ELSA LEGAL RESEARCH GROUPS

BILATERAL LEGAL RESEARCH GROUP ON

Using Artificial Intelligence in Legal Practice

"AI is a tool. The choice about how it gets deployed is ours."
Oren Eltiozi

The European Law Students' Association
UNITED KINGDOM

The European Law Students' Association
IRELAND

Usage of Artificial Intelligence (AI) in Legal practice

Concluding Report of the Bilateral Legal Research Group of ELSA Ireland and ELSA United Kingdom on Usage of Artificial Intelligence (AI) in Legal practice

The European Law Students' Association
UNITED KINGDOM

The European Law Students' Association
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FOREWORD

What is ELSA?

The European Law Students' Association (ELSA) is a non-political, non-governmental, non-profit making, independent Organisation which is run by and for students. ELSA has 43 Member and Observer countries with more than 375 Local Groups and 60.000 students. The Association was founded in 1981 by five law students from Poland, Austria, West Germany and Hungary. Since then, ELSA has aimed to unite students from all around Europe, provide a channel for the exchange of ideas and opportunities for law students and young lawyers to become internationally minded and professionally skilled. The purpose of the Association is to contribute to legal education, to foster mutual understanding and to promote social responsibility of law students and young lawyers. Our focus is to encourage individuals to act for the good of society in order to realise our vision: "A just world in which there is respect for human dignity and cultural diversity".

You can find more information about ELSA on http://www.elsa.org.

What is a Legal Research Group?

A Legal Research Group (LRG) is an academic, legal writing project that provides law students and young lawyers the opportunity to develop various legal skills, such as legal English, legal research and writing skills, as well as plenty of soft skills. A Legal Research Group is a group of law students and you

ng lawyers carrying out research on a specified topic of law with the aim to make their conclusions publicly accessible. The project can work at local, national or international level. The first working LRG was formed by ELSA International in October 1996 to work on aspects of "International Criminal Law". Since the publication of that first research in 1997, ELSA International has launched LRGs on different topics of law, making the project more appealing and popular to its National Groups.

What is the Usage of Artificial Intelligence (AI) in Legal Practice?

To strengthen cross-border collaboration and address vital changes in the legal profession, ELSA Ireland and ELSA United Kingdom have launched a Bilateral Legal Research Group dedicated to studying the integration of Artificial Intelligence into legal practice. This research seeks to examine AI's potential to redefine legal work, spanning from legal research and case prediction to judicial assistance and legislative drafting, while addressing the ethical, regulatory, and practical implications involved. By investigating these critical topics, the group aims to offer law students worldwide an in-depth understanding of AI's role, its benefits, and its challenges, equipping them with the knowledge and skills needed to thoughtfully engage with AI's growing impact on the legal landscape.

ACKNOWLEDGEMENTS

The Concluding Report of the Bilateral Legal Research Group on the Usage of AI in Legal Practice could not have been completed without the valuable contributions and support of many individuals.

First and foremost, ELSA Ireland and ELSA United Kingdom would like to thank and commend the researchers and authors of this project: thirty-nine bachelor's and master's law students from various countries who undertook the challenge of exploring this complex topic. Your dedication, creativity, and high standards have been invaluable. Through your efforts, you have delivered important insights into the role of Artificial Intelligence in legal practice, highlighting both its potential to enhance efficiency and the risks it may pose.

We are also deeply grateful to our Academic Board members, whose guidance and expertise from the outset provided vital support. Their constructive feedback shaped this work into a significant resource for the legal field.

Finally, we extend special thanks to those who worked diligently behind the scenes, including our Linguistic Editors and Designers, whose efforts ensured the professional completion of this project.

With sincere appreciation,

Aurore Talazac, Mariia Koval , Khulsam Musaliar and Lynn Kelly
Coordinators of the Bilateral Legal Research Group on the Usage of AI in Legal Practice

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ABSTRACT

By Khulsam Musaliar

This report explores the ongoing and evolving transformative role of Artificial Intelligence (AI) in the legal field namely addressing its potential, challenges and implications for Legal Practitioners, Judicial Decision-Making and Legislative Processes.

To delve into the complexities and nuances of how AI impacts these domains, this report is divided into three chapters, each dedicated to one specific arena: the impact of AI on Legal Practitioners, Decision-Making, and Lawmaking. Each Chapter is further divided into Sub-Chapters. The sub chapters discuss and analyse AI's impact on each domain through a series of targeted questions that adopt a multidisciplinary approach, analysing the intersection of AI, existing regulatory frameworks, ethical principles, extent of regulation, efficiency etc.

The report explores a diverse range of topics, from examining the role of AI in predictive analytics for case outcomes, exploring automated drafting of legal documents, and even AI's client advisory functions. It also addresses critical ethical and regulatory issues, such as data protection, algorithmic bias, and accountability. In the judicial context, the research highlights AI's potential to support judges through enhanced legal research, administrative efficiency, and decision-making tools, while addressing the ethical complexities of integrating AI into judicial authority. Similarly, in the domain of lawmaking, the study investigates AI's role in drafting legislation, anticipating social and economic impacts, and fostering transparency in legislative processes. These examples provide a glimpse into the broader scope of topics covered in the report.

The findings indicate that AI has the potential to transform legal practice by improving efficiency, automating routine tasks, and supporting decision-making, though its adoption requires careful attention to ethical concerns, algorithmic biases, and data privacy issues. While AI can assist in judicial decision-making and non-judicial functions, full autonomy remains impractical due to ethical and legal challenges, necessitating robust human oversight. On the other hand, in legal document drafting, AI shows promise for routine tasks but lacks the complexity needed for nuanced legal interpretations, underscoring the need for human involvement. Furthermore, effective regulation is crucial to ensure AI outputs align with societal values, addressing data quality and bias. Finally, the research reports that AI can enhance legislative efficiency, transparency, and public engagement, but its success depends on ethical deployment and continuous collaboration between humans and technology.

We hope that through the findings of this report, actionable insights are offered to stakeholders, including policymakers, legal professionals, and technologists, to foster the ethical and effective use of AI in legal contexts.

INTRODUCTION

What is the purpose of this Research?

By Mariia Koval, Aurore Talazac, Khulsam Musaliar, Lynn Kelly

Law has always been deeply interlinked with technological and societal developments adapting and evolving in response to new challenges and societal norms. The rise of Artificial Intelligence (AI) presents one of the most significant transformations in the world and in particular in legal practices, raising profound questions about how it integrates into the fabric of legal systems. The usage of AI in law introduces a complex balance that requires an understanding not only of legal principles but also of technological capabilities, ethical dimensions, and societal impacts. This study aims to provide a comprehensive understanding of AI's impact on the legal field, addressing practical, ethical, and regulatory considerations.

The research investigates how AI is being utilised to enhance legal research, automate routine tasks such as drafting documents, and assist in providing legal advice. It explores whether AI can understand and replicate the nuanced reasoning of legal professionals and how its adoption might affect efficiency and accuracy in legal work. The study also examines critical concerns such as data protection, ethical accountability, and the risks of delegating complex legal tasks to AI systems.

Moreover, the research has a focus on AI's role in decision-making, particularly its potential to assist judges or even make certain types of decisions autonomously. This involves assessing the practical feasibility of AI in decision-making processes, as well as examining concerns related to bias, transparency, and accountability. The study seeks to determine how AI might support fairness in legal outcomes and improve administrative efficiency while ensuring oversight mechanisms are in place to safeguard against misuse.

Furthermore, the research evaluates how AI technologies can contribute to the legislative process by analysing and drafting legislation, identifying gaps in legal frameworks, and forecasting the social and economic implications of proposed laws. It investigates how AI can improve transparency in the legislative process and support policymakers in designing effective, inclusive, and responsive legal systems.

Ultimately, this study seeks to balance the promise of AI-driven innovation with the need to uphold ethical standards, protect individual rights, and maintain public trust in the legal system. By addressing these multifaceted issues, the research aspires to contribute to the development of responsible and effective practices for integrating AI into the legal domain and aims to provide actionable insights for

legal professionals, policymakers, and stakeholders, ensuring that AI's integration into the legal profession strengthens its commitment to justice and the rule of law.

What is the most appropriate definition of AI for present purposes?

By Kyle Egan

The task of defining AI is one worthy of its own extended report. Such a task requires considering where AI transcends the boundaries of traditional technology. Further issues arise in defining AI when determining what elements are fundamental and which are incidental to AI. A great volume of articles discussing the definition of AI are quick to note the lack of consensus on the issue. Producing a novel definition which addresses these concerns is therefore beyond the scope of this report.

There currently exists a multitude of legal definitions for AI. It is therefore necessary to consider these definitions and to conclude which definition is most appropriate for the purposes of the report. The decision to analyse and ultimately rely upon pre-existing definitions is not to conclude that such definitions are ultimately correct. Rather, it reflects the fact that the research and development of AI systems is made with these definitions in mind. Therefore, using such definitions will allow the report to consider the use of AI in legal practice in a contextually accurate manner, reflecting the current understanding of AI within industry and legal practice.

The International Association of Privacy Professionals (the "IAPP") provides a non-exhaustive chart of AI definitions which helpfully outlines the key definitions currently used by major AI stakeholders.[1]

Consideration of Relevant Definitions

A comparison of the definitions currently used by various stakeholders illustrate common principles and elements across the AI ecosystem. Furthermore, the many organisations have evolved their definitions in line with international developments.

Predicated on the 51 definitions provided, the three most common elements included are: Data Processing, Learning and Adaptation, and Human-like Intelligence. Notably however, no single element is universally included across definitions. The most frequent, data processing, is included in 38 of 51 definitions.

Other key elements frequently appearing include: Decision-making, Autonomy, Predictions/Recommendations, Interaction with the Environment, and Problem Solving.

With the exception of problem solving appearing in 24 definitions, each of the seven other listed common elements are present in over half of the definitions compiled.

The frequency with which these elements appear illustrates a certain degree of convergence within definitions. However, it is also important to note that some definitions are developed for particular purposes, and therefore will be inherently different. For instance, even within the EU institutions,

[1] IAPP, 'International Definitions of AI' <https://iapp.org/media/pdf/resource_center/international_definitions_of_ai.pdf> accessed 1 September 2024.

different definitions are used for different purposes. The Council of Europe's 2023 AI Glossary[2] definition provides a less precise but more accessible definition than the EU's AI Act's definition for instance.[3]

The convergence of AI definitions was furthered by the adoption of the OECD definition by the EU in the AI Act. The evolution of Japan's AI definition provides a further illustration of this effect. A basic definition of AI was articulated during the 2019 "Conference toward AI Network Society, AI Utilization Guidelines".[4] This was superseded by the 2023 adoption of a definition akin to that provided for in the EU Act.[5]

The OECD definition contains all eight of the most common elements included in various definitions. The OECD definition is as follows:

'An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment'.[6]

For the sake of completion, each of the eight elements will be identified within the definition.

1. Data Processing is implicit through '…from the input it receives, how to generate outputs', as this describes the task of data processing.
2. Learning and Adaptation is explicitly mentioned in the final sentence.
3. Human-like Intelligence may be inferred through the use of 'infers, from the input it receives…' as inferences are often seen as a human form of intelligence.
4. Decision-making is explicit through 'how to generate… decisions that can influence…'
5. Autonomy is an explicit term in the definition.
6. Predictions/Recommendations is a clearly referenced element through 'generate outputs such as predictions, content, recommendations'
7. Interaction with the Environment is clearly interlinked with *Decision-making* and *Predictions/Recommendations* through the use of 'decisions that can influence physical or virtual environments.'

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[2] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) [2024] OJ L 2024/1689.
[3] Council of Europe, 'Artificial Intelligence Glossary' <https://www.coe.int/en/web/artificial-intelligence/glossary> accessed 1 September 2024.
[4] The Conference toward AI Network Society, 'AI Utilization Guidelines: Practical Reference for AI utilization' <https://www.soumu.go.jp/main_content/000658284.pdf> accessed 1 September 2024.
[5] Expert Group on How AI Principles Should be Implemented, 'Governance Guidelines for Implementation of AI Principles' <https://www.meti.go.jp/shingikai/mono_info_service/ai_shakai_jisso/pdf/20220128_2.pdf> accessed 1 September 2024.
[6] OECD, 'AI Principles Overview' <https://oecd.ai/en/ai-principles> accessed 1 September 2024.

8. Problem Solving is not as clearly implied in this definition as others, however, the inclusion of 'infers, from the input it receives, how to generate outputs…' can be seen as a form of problem solving, though the overlap with *Data-processing* must be acknowledged.

The comprehensive nature of the OECD definition, as well as the desire to adhere to commonly understood terminology makes it appropriate to adopt the OECD definition of AI systems for the purposes of this report.

What is the current state of AI technological development?

By Kyle Egan

The rapid advancements in AI technological development creates an inevitable difficulty of pinpointing when exactly to consider the state of AI technological development. Between the beginning of the research for this report, its editorial review, and subsequent publication, AI development has increased with incredible speed. The sheer breadth of AI's application across all sectors makes it impossible to consider the development of the technology on an industry-by-industry basis. It is therefore prudent to take a high-level approach. This section will therefore consider the direction of AI development, commenting on particular trends, as well as noting how this development has influenced the deployment of AI in industry. The AI Index developed by Stanford University provides reliable annual reports on the development of AI, which will substantially inform this section.[7]

Funding & Cost

The interest in the AI sector has been mirrored by a substantial increase in funding for AI research and development. The period between 2019 and 2023 has seen a 60% increase in private investment for AI, rising from 58.18 Billion USD, to 95.99 Billion USD by the time of publication of the 2023 AI Index.

Notably, AI investment peaked in 2021, with 132.36 Billion USD in private investment, which gradually fell over the following two years to the figure of 95.99 Billion USD. These figures must also be read in light of a surge in investment for generative AI technology, or "GenAI". The investment in GenAI skyrocketed from 2.85 Billion USD in 2022 to 25.23 Billion USD in 2023, illustrating the transformative effect ChatGPT has had on the sector.

The geographic breakdown of private investment in AI provides context to the total figures listed above. In 2023, private investment in the United States accounted for 67.22 Billion USD, over eight times the volume of private investment in China, and over 17 times the volume of private investment in the United Kingdom.

An important counterbalance to the increase in funding for the AI sector, is the increasing costs of training costs of AI models. Google's *Transformer* model which forms the backbone of most modern large language model architecture cost a mere 900 USD. This is in stark contrast to the 78 Million USD

[7] Stanford University, 'Artificial Intelligence Index Report 2024' <https://aiindex.stanford.edu/wp-content/uploads/2024/05/HAI_AI-Index-Report-2024.pdf> accessed 1 September 2024.

cost of developing OpenAI's GPT-4, and the 191 Million USD cost of developing Google's Gemini Ultra.

The massive and increasing costs of developing advanced AI models will have a significant impact in determining the state of technological development in the future. As costs increase, regions capable of supporting such investments will decrease in number, potentially leading to a massive concentration of AI models under the control of small geographic regions.

Such concentration of AI models can already be noted through the number of notable machine learning models by country in 2023. Stanford's AI index notes that the United States developed a total of 61 notable models. This is over four times more than China's 15 models. Germany and France combined also produced 13 models, as the third and fourth largest developers.

The industry responsible for the production of AI models adds further context. Whilst industry has remained the greatest producer of AI models above academia and government, the share of models produced by industry has substantially increased. In 2023, industry accounted for 72% of all new foundation models created.

Performance

Whilst trends concerning the funding and cost of AI development provide important context to the AI sector, it is crucial to consider how these trends have impacted the performance of AI systems.

A key difficulty in tracking the performance of AI systems on certain tasks is the use of human baselines to which an AI's technical performance is compared. Many high-profile human v AI challenges have been used to illustrate the performance of these systems and have contributed to the interest in the sector. IBM's *Watson* system competed in a *Jeopardy* contest against the competition's two most prominent contestants, emerging victorious. Similarly, Google's *AlphaGO* system defeated top-ranked Go players, a game which was considered reliant on human intuition and creativity.

The performance of AI systems in these highlight contests were notable for how they illustrated AI's progress in completing tasks otherwise considered inherently "human". The comparison of AI performance against a human baseline has continued and forms the basis for Stanford's analysis of performance in the *AI Index*. However, due to the pace of AI's improvements in many areas, it has become necessary to create more challenging benchmarks in order to effectively illustrate the capability of AI.

The *AI Index* notes that AI systems have now surpassed the human baseline in areas such as image classification, basic-level reading comprehension, English language understanding, and visual reasoning. Beyond the ability of AI to surpass the human baseline, the rate at which AI technology can develop from lesser abilities to surpassing the human baseline has also substantially increased. For instance, AI's visual reasoning potential improved from approximately 80% of the human-level baseline to surpassing it within 5 years, from the period 2016 to 2021. In comparison, AI's potential with regard to multitask language understanding increased from 60% of the human baseline in 2020 to surpassing the baseline in 2023, a notably quicker rate of improvement.

The increasing rate of improvement emphasises the importance of considering the effects of AI in particular industries. Research illustrating the impacts of AI in a given industry will ensure that regulators and key stakeholders can be well informed when considering the direction of AI and how or if this should be influenced.

This report is therefore concerned with the impacts of AI in legal practice, in order to ensure that the interaction between AI and legal practice is articulated clearly, allowing an informed response to any concerns regarding these developments.

What is the current regulatory landscape for AI and what are the recent developments?

By Kyle Egan

The rapid advancements in AI technology have prompted significant regulatory initiatives. It is necessary to consider how these initiatives have developed in recent years in order to contextualise the environment in which recent AI advances have taken place. However, this section does not intend to provide an in-depth consideration of the precise regulatory framework of each nation or region, to do so is beyond the scope of this report. Rather, illustrating regulatory trends and highlighting the current landscape will provide context to the substance of this report.

On a Policy Level

The first AI National Strategy was launched in Canada in 2017.[8] This was followed by several other nations over the following two years. The launch of national strategies peaked in 2019, which say 24 strategies launched.[9] By 2023, 75 nations had launched their own national strategy. These national strategies provide stakeholders with insight into the concerns and thoughts of regulators. Crucially, they provide insight into the regulatory approach a nation intends to adopt.

Contrasting the national strategy approaches of Ireland and the United Kingdom published in 2021 illustrates the benefit provided by these strategies. The United Kingdom's intention to adopt what the British Government considers a "pro-innovation approach" is evident through their national strategy.[10] By articulating this in their national strategy, it allows AI industry actors to determine how to navigate the regulatory landscape on a national and international basis. Thus, Ireland's national strategy which proposed that Ireland's current regulatory framework was sufficient to foster AI industry in the interim period before EU regulation provided certainty regarding the short-term regulatory landscape in Ireland.[11]

Whilst the policy approaches of Ireland and the United Kingdom are markedly different, both operate to provide clarity to AI stakeholders regarding the expected developments in the regulatory landscape.

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[8] Stanford University (n 7) section 7.3.
[9] Ibid.
[10] Secretary of State for Digital, Culture, Media and Sport (United Kingdom), 'National AI Strategy' (September 2021) <https://assets.publishing.service.gov.uk/media/614db4d1e90e077a2cbdf3c4/National_AI_Strategy_-_PDF_version.pdf> accessed 1 September 2024.
[11] Department of Enterprise, Trade and Employment (Ireland), 'AI - Here for Good A National Artificial Intelligence Strategy for Ireland' (July 2021) <https://enterprise.gov.ie/en/publications/publication-files/national-ai-strategy.pdf> accessed 1 September 2024.

Therefore, national strategies can inform stakeholders in the absence of clear regulatory decisions, instruments, or agreements.

Regulatory Developments

The plethora of national strategy publications was followed by an increase in regulatory developments across the world. The EU's AI Act served as a leading example of comprehensive AI governance. First proposed in April 2021, the AI Act entered into force on 1 August 2024.[12] However, the comprehensive nature of the AI Act which is intended to govern AI as a sector, differs to the approach taken by many Jurisdictions.

The United States has also been active in regulating AI. However, the State-by-State approach in the absence of comprehensive Federal Regulation stands as a clear difference in approach to the EU. Despite this, the adoption of the OECD definition of AI systems by the United States provides a welcome common ground.

The United Kingdom's decision not to adopt a similar regulatory approach to the EU has been the subject of much commentary. The British government has emphasised that it believes allowing existing regulators to govern AI in their respective sectors will promote innovation. However, there are concerns that such an approach leaves innovators with a lack of clarity to whom they owe duties, or who is supervising their activities.

The AI Act's entry into force on 1 August 2024 ushers in a new regulatory landscape which AI developers must adapt to in order to operate in the EU. However, the impact of the AI Act will extend far beyond the EU. The Brussels Effect will see similar measures taken across the world. What remains to be seen however, is how the AI sector will adapt to different regulatory regimes across the EU, the United Kingdom, the United States, and elsewhere.

Predicated on this developing regulatory landscape, the substance of this report will address the use of AI in legal practice.

[12] AI Act (n 2) Art. 113.

Chapter 1: Impact of AI upon Legal Practitioners

1.1. To What Extent Can Artificial Intelligence (AI) Be Used to Conduct Effective Legal Research?

By Evlampia Zachariadou

The advent of Artificial Intelligence (AI) has transformed many aspects of the legal profession, particularly in the field of legal research.[13] By automating document review, predicting case outcomes, and identifying relevant precedents, AI has the potential to significantly improve efficiency and accuracy of legal research processes, leading to more effective legal research overall.[14] However, alongside these benefits, concerns about algorithmic bias and the ethical implications of relying on AI in decision-making have emerged.[15] This paper will, therefore, look at the extent to which AI can be effectively used in legal research, by first examining its potential advantages and practical applications.[16] It will then turn to the regulatory challenges, particularly focusing on issues of accountability and liability in the use of AI tools.[17] Following this, the paper will assess how AI bias shapes legal research and justice, looking at the impact of algorithmic bias on fairness in legal proceedings.[18] A key focus will be the landmark US case *State v Loomis*,[19] a decision that ignited significant debate among legal practitioners and researchers regarding the use of AI tools and their implications on fairness and transparency in legal decision-making.[20] Finally, the paper will review the steps law firms have taken to integrate AI responsibly,[21] ensuring its use adheres to professional and ethical standards,[22] and will analyse how regulatory frameworks, like the EU's General Data Protection Regulation (GDPR) 2016,[23] may either hinder or facilitate the adoption of AI in legal research.[24]

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[13] Sean Semmler and Zeeve Rose, 'Artificial Intelligence: Application Today and Implications Tomorrow' (2017) 16 Duke Law & Technology Review 85, 85-86.
[14] Ibid.
[15] Maxi Scherer, 'Artificial Intelligence and Legal Decision-Making: The Wide Open? Study on the Example of International Arbitration' (2019) 36 Journal of International Arbitration 539, 542-543.
[16] Sean Semmler and Zeeve Rose (n 13).
[17] Ibid.
[18] Maxi Scherer (n 15).
[19] [2016] WI 68.
[20] Rishabh Warrier, 'Analysing The Use of Artificial Intelligence in Criminal Sentencing through the Loomis Decision' (*Centre for Criminal Law Studies*, 14 April 2020) <https://criminallawstudiesnluj.wordpress.com/2020/04/14/analysing-the-use-of-artificial-intelligence-in-criminal-sentencing-through-the-loomis-decision/> accessed 17 November 2024.
[21] Anthony Vigneron, 'A Responsible Approach to Secure Generative AI Tool Adoption' (*Clifford Chance*, 9 September 2024) <https://www.cliffordchance.com/insights/resources/blogs/responsible-business-insights/2024/09/a-responsible-approach-to-secure-generative-AI-tool-adoption.html> accessed 17 November 2024.
[22] Ibid.
[23] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119.
[24] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76, 79.

1.1.1. Is AI the Future of Legal Research or Just a Passing Trend?

1.1.1.1. Exploring its Current Capabilities and Impact in Legal Research

AI has the potential to revolutionise legal research by leveraging machine learning, such as natural language processing (NLP) to streamline complex tasks.[25] Unlike traditional systems that required detailed programming for every scenario, narrow AI systems, which are specifically designed to perform one task per time, use machine processes like NLP to learn from user-fed data to respond quickly to a new set of data.[26] By using these processes, those AI systems learn how to deliver accurate outputs with little to no guidance on how to carry out the task, without requiring human intervention like an engineer programming a specific set of rules for each data point.[27] These programmes also use 'iteration', a process of repetitively feeding data into an algorithm, to improve their outputs.[28] Over time, these programmes allow AI to adapt and make judgments based on previous data from tasks or patterns that are similar, though not identical.[29]

In the context of legal research, NLP plays a vital role by enabling AI to interpret and analyse legal texts, such as statutes, case law, and legal opinions, in plain English.[30] Instead of merely processing data into a computer code, AI systems trained in NLP can comprehend the nuances of human language, summarising vast amounts of information, recognising patterns, and even detecting 'emotional undertones' or 'implicit meanings'.[31] This capacity makes AI particularly valuable in legal research, where efficiency and accuracy are paramount.[32]

1.1.1.2. Practical Applications: Concrete Examples of AI Tools Shaping Legal Research

Despite the theoretical potential of AI in legal research, it is important to look at the practical applications to understand how these tools are being implemented in the legal sphere.[33] ROSS Intelligence, branded as 'the world's first [AI] attorney',[34] uses NLP to perform legal research and draft memorandums.[35] Meanwhile, a recently funded start-up called LawGeex uses machine learning to streamline contract management for in-house legal teams, significantly reducing time spent on contract

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[25] Sean Semmler and Zeeve Rose (n 13) 86-87.
[26] Ibid.
[27] Ibid.
[28] Nick McCrea, 'A Machine Learning Tutorial With Examples: An Introduction to ML Theory and Its Applications' (*Toptal Developers*, 9 December 2022) <https://www.toptal.com/machine-learning/machine-learning-theory-an-introductory-primer> accessed 17 November 2024.
[29] Ibid.
[30] Sean Semmler and Zeeve Rose (n 13) 87.
[31] Matt Kiser, 'Introduction to Natural Language Processing' (*ALGORITHMIA*, 11 August 2016) <https://blog.algorithmia.com/introduction-natural-language-processing-nlp/> accessed 17 November 2024.
[32] Ibid.
[33] Sean Semmler and Zeeve Rose (n 13) 87.
[34] Matthew Griffin, 'Meet Ross, the World's First AI Lawyer' (*Fanatical Futurist*, 11 July 2016) <https://www.fanaticalfuturist.com/2016/07/meet-ross-the-worlds-first-ai-lawyer/> accessed 17 November 2024.
[35] Deloitte, Artificial Intelligence Innovation Report 24 (2016).

review.[36] Beagle, on the other hand, focuses on making contract review accessible to non-lawyers by offering user-friendly tools for analysing and organising contracts.[37] These three tools showcase the diverse ways in which AI is transforming legal workflows, each addressing specific challenges in the legal field.[38] A closer look at these tools will reveal how they are shaping the future of legal practice across different areas.[39]

1.1.1.2.1. ROSS Intelligence

Launched in 2018, Ross Intelligence leverages NLP and its proprietary system, Legal Cortex, to transform how legal research is conducted.[40] Unlike older platforms such as Westlaw and LexisNexis,[41] which rely on keyword and 'Boolean searches' combining words like 'and, 'or', and 'not' to limit results,[42] ROSS Intelligence enables users to input full sentences or questions, much like using a search engine.[43] This approach therefore allows the tools to deliver search results optimised with NLP, surfacing the most accurate and relevant legal decisions based on prior queries that yielded strong results.[44]

The tool's capabilities go beyond legal research,[45] as ROSS Intelligence can also draft legal memorandums based on search results and evaluate legal writing, automating tasks typically performed by lawyers.[46] After conducting research, a user can, for instance, request the system to draft a memorandum summarising the findings, which is then delivered via email.[47] This tool also reviews the legal writing, providing feedback on aspects such as clarity and structure.[48] By incorporating features that mirror tasks traditionally carried out by lawyers, ROSS Intelligence sets itself apart as a transformative tool in the legal sector.[49] These capabilities, refined through user feedback, ultimately highlight its potential to redefine how legal research and writing are approached.[50]

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[36] Deloitte (n 35).
[37] Ibid.
[38] Sean Semmler and Zeeve Rose (n 13) 87.
[39] Ibid.
[40] Caroline Hill, 'Bryan Cave Signs Up to ROSS Intelligence and launches TechX' (*Legal It Insider*, 6 December 2016) <https://legaltechnology.com/2016/12/06/bryan-cave-signs-up-to-ross-intelligence-and-launches-techx/> accessed 17 November 2024.
[41] Nicole Yamane, 'Artificial Intelligence in the Legal Field and the Indispensable Human Element Legal Ethics Demands' (2020) 33 The Georgetown Journal of Legal Ethics 877, 879.
[42] Shauntee Burns, 'What is Boolean Search?' (*New York Public Library*, 22 February 2011) <https://www.nypl.org/blog/2011/02/22/what-boolean-search> accessed 17 November 2024.
[43] Caroline Hill, 'Bryan Cave Signs Up to ROSS Intelligence and launches TechX' (n 28).
[44] Stergios Anastasiadis, 'How is Natural Language Search Changing The Face of Legal Research?' (*ROSS,* 8 April 2019) < https://blog.rossintelligence.com/post/how-natural-language-search-changing-face-of-legal-research> accessed 17 November 2024.
[45] Nicole Yamane (n 41) 880.
[46] Ibid.
[47] Susan Beck, 'Inside ROSS: What Artificial Intelligence Means for Your Firm' (*LAW.COM*, 28 September 2016 <http://www.law.com/sites/almstaff/2016/09/28/inside-ross-what-artificial-intelligence-means-for-your-firm/> accessed 17 November 2024.
[48] Ibid.
[49] Nicole Yamane (n 41).
[50] Ibid.

However, despite its promising potential and growing adoption by prominent law firms like Latham & Watkins, Dentons, Baker Hostetler, and Jackson Lewis,[51] ROSS Intelligence faced significant legal challenges that ultimately led to its closure in 2021.[52] In the case *Thomson Reuters Enterprise Centre GmbH v ROSS Intelligence Inc.*,[53] the company was sued by Thomson Reuters in 2020, accused of unlawfully using its Westlaw database to develop its own competing platform.[54] In response, ROSS filed counterclaims, alleging that Thomson Reuters engaged in monopolistic practices 'by tying its search tools to its law database', thus limiting competition.[55] Unfortunately, ROSS failed to substantiate its claims, with a Delaware court ruling that it could not establish that the products were separate or demonstrate harm from the alleged tying practices.[56] Despite the innovative approach of ROSS Intelligence, the ongoing legal disputes, combined with the costs of defending against these lawsuits, hindered its ability to secure further investment and led to the eventual shutdown of the platform.[57]

It could be therefore argued that this case illustrates both the potential and the challenges AI tools can face in a competitive and heavily regulated industry.[58] While tools like ROSS Intelligence can significantly enhance efficiency when conducting legal research, their adoption requires navigating complex legal and regulatory landscapes, as seen in its challenges with intellectual property and competition laws.[59] Moreover, the reliance on AI tools raises broader questions about accountability, liability, and the legal frameworks needed to govern their use.[60] Addressing these issues is critical to ensuring that such tools can fulfil their transformative potential without undermining the quality and reliability of legal research.[61]

1.1.1.2.2. LawGeex

LawGeex, with $9.5 million in funding, provides a cutting-edge contract review and management tool designed specifically for in-house legal teams.[62] Using NLP, the platform reads, summarises, and

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[51] 'ROSS Intelligence Offers A New Take on Legal Research', (*ABOVE THE LAW*, 29 May 2019) <https://abovethelaw.com/2019/05/ross-intelligence-offers-a-new-take-on-legal-research/> accessed 17 November 2024.
[52] Bob Ambrogi, 'Legal Research Company ROSS to Shut Down Under Pressure of Thomson Reuters' Lawsuit' (*LawSites*, 11 December 2020) <https://www.lawnext.com/2020/12/legal-research-company-ross-to-shut-down-under-pressure-of-thomson-reuters-lawsuit.html> accessed 17 November 2024.
[53] [2023] US Dist Cv, Civ Action No.20-613 (D Del) Opinion of Judge Stephanos Bibas.
[54] Bob Ambrogi (n 52).
[55] Bob Ambrogi, 'Federal Court Dismisses ROSS Intelligence's Remaining Antitrust Claim Against Thomson Reuters' (*LawSites*, 30 September 2024 <https://www.lawnext.com/2024/09/federal-court-dismisses-ross-intelligences-remaining-antitrust-claim-against-thomson-reuters.html> accessed 17 November 2024.
[56] Ibid.
[57] Andrew Arruda, Jimoh Ovbiagele, and Pargles Dall'Oglio, 'Announcements' (*ROSS*, 11 December 2020) <https://blog.rossintelligence.com/post/announcement> accessed 17 November 2024.
[58] Ibid.
[59] Bob Ambrogi (n 55).
[60] Ibid.
[61] Ibid.
[62] Jonathan Marciano. 'Legal SaaS A.I. Platform LawGeex Raises $7 Million in Funding Round' (*PR Newswire*, 7 March 2017) <https://www.prnewswire.com/news-releases/legal-saas-ai-platform-lawgeex-raises-7-million-in-funding-round-615570484.html> accessed 17 November 2024.

suggests edits to a wide array of contracts, from Non-Disclosure Agreements (NDAs) to purchase orders, and software licenses.[63]

The platform operates by allowing users to upload contracts onto the platform (simple drag-and-drop), where they can be accessed, edited, and shared collaboratively among in-house counsel, external advisors and clients.[64] With this tool, users can detect any unusual or problematic clauses and highlight any missing standard provisions, thus ensuring contracts are both accurate and compliant.[65] By automating the editing process, LawGeex claims its AI tool can reduce contract review time by up to 80%,[66] significantly boosting efficiency for legal practitioners.[67]

1.1.1.2.3. Beagle

Contrary to ROSS Intelligence and LawGeex, Beagle is a contract review tool that was designed for non-lawyers, who need to review and manage contracts but do not have the necessary expertise or resources to hire a lawyer.[68] The platform operates the same way as LawGeex. Users first upload the contracts to the platform, where the NLP system identifies key clauses for review by comparing them to standard contract norms.[69] Beagle also has a built-in chatbot that allows users to interact with one another, discuss and work collaboratively on those documents.[70] Besides that, the system can learn individual preferences and incorporate them into future document review, personalising the experience for each user. [71]

1.1.1.3. Regulatory Challenges: Accountability and Liability in Legal AI Tools

While the practical applications of AI tools like Ross Intelligence, LawGeex, and Beagle demonstrate their transformative potential in legal research, their adoption raises critical concerns regarding accountability and liability.[72] These tools, capable of learning and adapting to user preferences, blur traditional lines of responsibility when errors occur.[73] For example, if ROSS Intelligence generates a flawed legal memorandum or Beagle misinterprets a key contract clause, should liability fall on the engineers who developed the software or the users who provided the input?[74] Scholars like Sean Semmler and Zeeve Rose raise similar questions, noting that these AI tools often act as extensions of

[63] Sean Semmler and Zeeve Rose (n 13) 87.
[64] Ibid.
[65] Zach Abramowitz, 'LawGeex Free Contract Review Could Be A Gamechanger' (*ABOVE THE LAW*, 21 April 2016) <https://abovethelaw.com/2016/04/lawgeex-free-contract-review-could-be-a-gamechanger/> accessed 17 November 2024.
[66] LawGeex, 'Lighten the Load' (*LawGeex*, 2024) <https://www.lawgeex.com/platform/> accessed 17 November 2024.
[67] Sean Semmler and Zeeve Rose (n 13) 88.
[68] Ibid., 87.
[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] Ibid., 95-97.
[73] Ibid.
[74] Ibid.

user preferences, adapting to specific tendencies that could inadvertently lead to intentional errors.[75] They further point out the ambiguity in determining whether such tools remain the same product after integrating user-specific instructions, complicating the threshold for liability.[76] Without clear regulatory guidelines, it remains uncertain 'who' or 'what' would be held accountable in such scenarios, leaving courts to address these issues only after lawsuits arise.[77]

Scholars like Harry Surden advocate for proactive regulations to address such ambiguities, proposing accountability frameworks that clarify whether engineers or lawyers should be 'vicariously liable' for AI-driven errors.[78] On the contrary, critics like Daniel E. Ho and Colleen Honigsberg caution against hastily implementing restrictive rules, warning that the overly restrictive frameworks might stifle innovation or fail to anticipate future advancements.[79] This divergence in scholarly perspectives underscores the need for a balanced regulatory approach that supports the integration of AI tools in legal research while ensuring accountability for their outputs.[80] Striking this balance requires crafting a nuanced framework that recognises the transformative potential of these AI tools to enhance efficiency and accuracy, alongside the risks they pose to the integrity of legal analysis when errors occur.[81]

1.1.2. The Price of Precision: How AI Bias Shapes Legal Research and Justice

One of the primary concerns associated with AI in legal research is the risk of algorithmic bias.[82] AI tools rely on vast datasets to make predictions and recommendations, and if these datasets are biased, the AI's conclusions may also be biased.[83] Algorithmic bias refers to instances where AI systems make prejudiced decisions based on the data they are trained on, which can lead to unjust outcomes, particularly in court systems where fairness and impartiality are crucial.[84] As Professor Maxi Scherer correctly noted, AI systems might extract patterns from the data and extrapolate them in ways that might lead to systemic mistakes.[85] Ultimately, unless AI systems are carefully designed to identify and correct these biases, they risk perpetuating and even exacerbating the inequalities they are meant to address, undermining the very principles of justice and fairness that the legal system relies upon.[86]

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[75] Sean Semmler and Zeeve Rose (n 13) 97.
[76] Ibid.
[77] Ibid.
[78] Harry Surden, 'Artificial Intelligence and Law: An Overview' (2019) 35 Georgia State University Law Review 1336, 1305-1337.
[79] Daniel E. Ho, Colleen Honigsberg and others, 'AI Regulation Has Its Own Alignment Problem: The Technical and Institutional Feasibility of Disclosure, Registration, Licensing, and Auditing' (Forthcoming 2024) 92 George Washington Law Review <https://dho.stanford.edu/wp-content/uploads/AI_Regulation.pdf> accessed 17 November 2024.
[80] Sean Semmler and Zeeve Rose (n 13) 97.
[81] Ibid.
[82] Maxi Scherer, 'Artificial Intelligence and Legal Decision-Making: The Wide Open? Study on the Example of International Arbitration' (2019) 36 Journal of International Arbitration 539, 559.
[83] Ibid.
[84] Ibid.
[85] Ibid.
[86] Ibid.

A notable example of algorithmic bias in the legal justice system was found in the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) tool.[87] COMPAS is a case management and decision support tool – otherwise known as risk assessment tool – used by US Courts to predict recidivism rates.[88] Studies have shown that COMPAS disproportionately portrayed black defendants as high risk compared to white defendants.[89] In fact, black defendants were found to be 'twice as likely as white defendants to be [flagged] as a higher risk of violent recidivism',[90] whereas 'white violent recidivists were 63% more likely to have been misclassified as a low violation recidivism, compared [to] black defendants'.[91] According to Professor Maxi Scherer, it remains unclear whether this racial bias was based on human biases that are embedded in the training dataset, or due to the algorithm misinterpreting patterns of overrepresentation in certain crime rates, and therefore incorrectly assuming a higher likelihood of reoffending for black defendants.[92]

As evidenced in the case of *State v Loomis*,[93] the use of AI in assessing recidivism sparked controversy among legal practitioners and researchers.[94] The accused Eric Loomis was charged with 'attempting to flee a traffic officer and operating a motor vehicle without the owner's consent'.[95] While sentencing the accused, the trial court took the help of the AI risk assessment tool, COMPAS, to predict recidivism on factors like the accused's criminal history, level of education etc.[96] COMPAS then generated a score, predicting the possibility of reoffending.[97] Based on that, Loomis was given six years imprisonment plus probation.[98] The accused appealed his sentencing as he argued that the use of this AI tool violated his 'due process rights'.[99] Yet, the trial court rejected his appeal and a further appeal to the Wisconsin Supreme Court was met with a similar fate.[100] The reasoning behind the court's judgment was that the methodology used to determine Loomis's risk could not be revealed, which ironically also violated his right to know the reason behind his conviction.[101]

A 2016 report published by ProPublica analysed over 7000 COMPAS decisions and found that its predictions were biased and unreliable.[102] The report highlighted that black individuals were far more

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[87] Scherer (n 86).
[88] Ibid.
[89] Ibid.
[90] Jeff Larson and others, 'How We Analyzed the COMPAS Recidivism Algorithm' (*PROPUBLICA*, 23 May 2016) <https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm> accessed 17 November 2024.
[91] Ibid.
[92] Maxi Scherer (n 82).
[93] [2016] WI 68.
[94] Rishabh Warrier, 'Analysing The Use of Artificial Intelligence in Criminal Sentencing through the Loomis Decision' (*Centre for Criminal Law Studies*, 14 April 2020) <https://criminallawstudiesnluj.wordpress.com/2020/04/14/analysing-the-use-of-artificial-intelligence-in-criminal-sentencing-through-the-loomis-decision/> accessed 17 November 2024.
[95] Ibid.
[96] Ibid.
[97] Ibid.
[98] Ibid.
[99] Ibid.
[100] Ibid.
[101] Ibid.
[102] Julia Angwin and others, 'Machine Bias: There's Software Used Across The Country To Predict Future Criminals. And it's Biased Against Blacks' (*PROPUBLICA*, 23 May 2016) <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing> accessed 17 November 2024.

likely to be incorrectly 'flagged' as high risk for reoffending compared to white individuals.[103] It is therefore evident that there is lack of transparency in how the algorithm operates, as well as its potential to perpetuate and amplify systemic bias embedded in its data.[104] While the court ultimately upheld its use, the case highlighted the risks of relying on AI tools that lack accountability and are susceptible to bias, especially in contexts where fairness and impartiality are important.[105] That is to say, the opacity of the methodology used in those types of risk assessment tools means that the 'due process rights' of individuals can be easily violated.[106]

In the context of legal research, concerns about AI bias raise significant questions regarding the reliability and fairness of AI-powered tools. Scholars like Professor Ruha Benjamin, in her work *Race After Technology,*[107] has discussed how AI tools and systems can reinforce existing biases, particularly when trained on biased datasets.[108] Similarly, Professor Timnit Gebru's study on the ethical implications of AI has highlighted how biases in AI tools can lead to unjust outcomes, specifically in fields like criminal justice and legal decision-making.[109] Gebru suggests that AI's reliance on flawed data can result in biased predictions or decisions that disproportionately affect marginalised groups.[110]

If legal research tools rely on past rulings or biased datasets, as Benjamin and Gebru warn,[111] they risk replicating the same algorithmic flaws seen in systems like COMPAS, which can further entrench existing disparities within the legal system.[112] As we saw in the case of *State v Loomis*,[113] AI tools like COMPAS might prioritise precedents that reflect biased patterns or omit cases that provide alternative perspectives, leading to skewed or incomplete research results.[114] This demonstrates that while AI has the potential to enhance efficiency and accessibility in legal research, its effectiveness is limited unless the data and algorithms underpinning these tools are carefully audited and designed to mitigate bias.[115]

1.1.2.1. Steps Law Firms Have Taken: What Works, What Doesn't, and the Path Forward

Unlike courts, which have struggled to adopt robust measures to mitigate algorithmic bias, law firms have taken proactive steps to address these challenges. Magic Circle firms like Clifford Chance have begun addressing these issues by implementing comprehensive frameworks, policies, and governance structures to guide AI adoption responsibly.[116] To illustrate, Clifford Chance has introduced 'AI

[103] Julia Angwin and others (n 102).
[104] Ibid.
[105] Ibid.
[106] Ibid.
[107] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (1st edn, Polity 2019).
[108] Ibid., 34.
[109] Timnit Gebru, 'Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification' [2018] 81 Proceedings of Machine Learning Research 1-15.
[110] Ibid.
[111] Ruha Benjamin (n 107).
[112] Ibid.
[113] [2016] (n 93).
[114] Timnit Gebru (n 109).
[115] Ibid.
[116] Anthony Vigneron, 'A Responsible Approach to Secure Generative AI Tool Adoption' (*CLIFFORD* CHANCE, 9 September 2024)

Principles' and a 'Comprehensive Policy Framework', aligned with international best practices, which emphasise the ethical standards of fairness, transparency, accountability, and privacy in the use of AI.[117] These principles shape the firm's responsible use of generative AI tools, such as Microsoft Copilot and Clifford Chance Assist, to ensure that AI adoption is secure, responsible, and beneficial across all practice areas.[118]

Additionally, Clifford Chance has invested in extensive training programmes, including mandatory eLearning modules and specialised workshops, designed to enhance staff members' technological competence and ensure that AI tools are used responsibly.[119] The firm's 'AI & Innovation Board' and 'AI Steering Groups', composed of diverse representatives, focus on identifying and evaluating AI applications that adhere to the firm's AI Principles and Policy.[120] To date, over 400 potential use cases have been reviewed and prioritised for broader implementation across the firm.[121] Together, these initiatives demonstrate Clifford Chance's proactive approach to integrating AI in a manner that upholds ethical standards and ensures equitable outcomes.[122]

Ashurst, a Silver Circle law firm, on the other hand, undertook a trial to evaluate generative AI tools, focusing on key factors like accuracy and time savings.[123] While their trial demonstrated that AI tools can outperform human lawyers in speed, Ashurst found that the time required to verify AI-generated results was a significant factor.[124] This challenge, particularly in balancing speed with accuracy, highlights a broader concern in the legal industry: ensuring that AI tools do not compromise the quality and fairness of legal outcomes.[125] Tara Waters, Ashurst's Chief Digital Officer, noted that while these tools are not yet perfect, they expect future versions to show improvements, addressing these issues more effectively.[126] This highlights the importance of continuous development and careful implementation of AI tools to prevent biases and ensure that they are both accurate and reliable.[127]

These efforts underline the importance of continuous development, rigorous testing, and careful implementation of AI tools, not only within law firms but also in broader legal research and judicial systems.[128] By prioritising ethical standards and addressing challenges like accuracy and bias, firms like Clifford Chance and Ashurst demonstrate how AI can be responsibly integrated into legal research to

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<https://www.cliffordchance.com/insights/resources/blogs/responsible-business-insights/2024/09/a-responsible-approach-to-secure-generative-AI-tool-adoption.html> accessed 17 November 2024.
[117] Ibid.
[118] Ibid.
[119] Ibid.
[120] Ibid..
[121] Ibid.
[122] Ibid.
[123] Isabel Gottlieb, 'AI Accuracy in Legal Research Remains in 'Check Your Work' Phase' (*Bloomberg Law*, 2 July 2024) <https://news.bloomberglaw.com/artificial-intelligence/ai-accuracy-in-legal-research-remains-in-check-your-work-phase> accessed 17 November 2024.
[124] Ibid.
[125] Ibid.
[126] Ibid.
[127] Ibid.
[128] Ibid.

produce reliable and equitable outcomes.[129] Their proactive measures serve as a reminder that courts, too, must take decisive steps to address bias and ensure transparency in AI tools.[130] By learning from these initiatives, courts can create AI frameworks that uphold justice and equity, safeguarding the integrity of legal systems in an increasingly technologically advanced world.[131]

1.1.3. Navigating the Legal Landscape: The Role of Regulatory Frameworks in AI

1.1.3.1. How the EU's General Data Protection Regulation (GDPR) 2016 [132] Might Hinder or Facilitate the Adoption of AI in Legal Research?

The adoption of AI in legal research has the potential to revolutionise the legal sector by improving efficiency and offering advanced tools for case analysis, precedent research, and legal drafting.[133] However, relying on AI tools raises various questions about how existing regulatory and legal frameworks like the EU's General Data Protection Regulation (GDPR) 2016[134] might hinder or facilitate its adoption.[135] While the GDPR is designed to protect individuals' data privacy and rights, it also creates challenges for the use of AI, especially in areas like transparency and decision-making.[136]

1.1.3.2. The Right to Explanation: Does it Really Exist in the GDPR?

One of the most discussed aspects of the GDPR when it comes to AI is the 'right to explanation' that individuals, whose data is being processed, are supposed to have when decisions are made about them through automated processes.[137] Automated decision-making refers to decisions made without human intervention, typically by algorithms or AI systems.[138] These decisions can significantly impact individuals,[139] as seen in cases like *State v Loomis*,[140] where a risk assessment tool was used to predict recidivism based on factors like criminal history and education, influencing sentencing outcomes and raising concerns about transparency and fairness.[141]

According to Professors Sandra Wachter, Brent Mittelstadt, and Luciano Floridi, the GDPR does not explicitly guarantee a 'right to explanation' in the way many people might think it does.[142] Instead, Article 13 to 15 of the GDPR provide a 'right to be informed',[143] which requires 'data controllers' to

[129] Gottlieb (n 128).
[130] Ibid.
[131] Ibid.
[132] GDPR (n 23).
[133] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76, 76-78.
[134] General Data Protection Regulation (n 132).
[135] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 133).
[136] Ibid.
[137] Ibid.
[138] Ibid.
[139] Ibid.
[140] [2016] (n 93).
[141] Rishabh Warrier (n 94).
[142] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135).
[143] GDPR (n 23) arts 13-15.

explain the 'logic' behind automated decisions, along with their 'significance' and potential 'consequences' for individuals.[144] This is important because it ensures that individuals are not left in the dark about their data being used.[145]

However, the problem is that this 'right to be informed' – or, as some scholars refer to it, the 'limited 'right to be informed"[146] – does not necessarily mean individuals will receive a detailed explanation of how AI systems and tools work.[147] This, in turn, raises the question of whether this right 'truly exists [in practice] or […] if it is [even] feasible [to begin with]',[148] a concern raised by various legal scholars and researchers.[149] Often, AI systems and tools, particularly those based on complex machine learning algorithms, are 'black boxes',[150] which are systems whose internal decision-making processes are not transparent or easily understood, even by the developers or 'data controllers' who create them.[151] This is especially problematic in the legal sector, where transparency and accountability are essential for maintaining trust.[152] If AI tools are used to recommend legal strategies or assess case outcomes, legal professionals must be able to explain how these tools arrived at their conclusions.[153] Without more detailed transparency, the utility and trustworthiness of these AI tools in legal research would be compromised.[154]

1.1.3.3. Automated Decision-Making and Profiling: A Toothless Protection or a Necessary Safeguard?

In addition to the 'right to be informed', the GDPR also addresses the broader issue of 'automated decision-making' and 'profiling'[155] through Article 22.[156] This article ensures that individuals are not subjected to decisions made solely through 'automated processing', especially when these decisions are based on the processing of their 'personal data'.[157] 'Personal data' in this context refers to aspects such as an individual's 'performance at work, economic situation, health, personal preferences [and] interests, reliability [and] behaviour, [as well as] location [and] movements'.[158] Such decisions can result in 'legal effects', such as changes to an individual's legal rights or status, or lead to 'similarly significant effects', like being denied participation in a contract, credit approval or job eligibility,[159] unless certain conditions are met.[160] These conditions include obtaining explicit 'consent' from the individual or having a

[144] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 91-4.
[145] Ibid
[146] Ibid., 77.
[147] Ibid., 77-8.
[148] Ibid., 76-7.
[149] Ibid.
[150] Richard E. Susskind, *Tomorrow's Lawyers: An Introduction to Your Future* (3rd edn, Oxford University Press 2013) 176.
[151] Ibid.
[152] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 96.
[153] Ibid., 97-8.
[154] Ibid.
[155] Ibid., 91-3.
[156] GDPR (n 23) art 22.
[157] Ibid., Recital 71.
[158] Ibid.
[159] Ibid.
[160] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 93.

significant reason for making the decision, such as fulfilling a contractual obligation.[161] This ensures that the individual's rights are safeguarded when their personal data is being used in 'automated' decision-making processes.[162]

For example, in legal research, AI might be used to automatically sort through vast amounts of data to predict the outcome of a case.[163] If the AI system makes a decision that significantly affects a person – such as predicting the likelihood of success in a case – it could be seen as a 'legal effect' under the GDPR.[164] The regulation thus aims to prevent people from being unfairly treated based on automated judgments, ensuring they have the right to challenge or even opt out of such decisions.[165]

However, scholars like Sandra Wachter, Brent Mittelstadt, and Luciano Floridi have argued that the language used in Article 22 is ambiguous,[166] particularly in its interpretation of 'solely automated' decisions.[167] The phrase 'solely automated' raises a lot of questions about whether these decisions are still classified as 'solely automated' when there is a nominal human involvement in the process.[168] In German SCHUFA judgments,[169] the Federal Court found that no 'automated decision-making' has been made because 'automated processing was only used for [the] preparation of evidence, while the actual decision was made by a human being'.[170] This interpretation, therefore, reveals a significant gap in the current regulation, as it opens the door, creating a 'loophole', for automated processes to be potentially exempted from Article 22's requirements due to minimal human involvement.[171]

This ambiguity extends to scenarios where automated systems prepare court decisions, but the human overseeing the process chooses 'not […] to interfere or […] adopt the decision'.[172] In such cases, it becomes unclear whether the decision should still be classified as 'solely automated', as 'any human [interaction]' could be seen as some form of human involvement.[173] Without clear criteria for assessing the 'level of human involvement', even slight human engagement could be enough to exclude the decision from being classified as 'solely automated'.[174] To address this, legal scholars have proposed clarifying the language of Article 22 by adopting phrasing such as 'solely or predominantly based on',[175] as previously suggested by the European Parliament in Article 20(5).[176] By providing specific examples

[161] General Data Protection Regulation (n 134) art 22(2)(a) and (c).
[162] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135).
[163] Ibid., 93-96.
[164] Ibid.
[165] Ibid.
[166] Ibid., 95.
[167] Ibid., 92.
[168] Ibid.
[169] BGH 2014, VI ZR 156/13 [German Federal Court], BGH v LG Giessen 2013, 1 S 301/12 [German Federal Court] and BHG v AG Giessen 2014, 47 C 206/12 [German Federal Court].
[170] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 88.
[171] Ibid.
[172] Ibid., 98.
[173] Ibid., 92.
[174] Ibid.
[175] Ibid., 98.
[176] European Parliament Committee on Civil Liberties, Justice and Home Affairs, 'Report on the Proposal for a Regulation of the European Parliament and of the Council on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation) COM (2012) 0011.

of decision-making processes that qualify as 'solely or predominantly automated', these loopholes could be closed, helping businesses, including law firms using AI for legal research, better understand their obligations.[177]

Without such clarifications, the vagueness of Article 22 risks hindering compliance efforts and creating uncertainty for AI developers, ultimately leaving the GDPR at risk of being 'toothless'.[178] This could significantly diminish the regulation's effectiveness in protecting against the risks of automated decisions-making, compromising the very safeguard the regulation aims to establish.[179]

1.1.4. Concluding Remarks

AI has the potential to revolutionise legal research by improving efficiency, reducing costs, and transforming the way legal information is accessed and utilised.[180] Tools like the now-shuttered ROSS Intelligence, LawGeex, and Beagle have demonstrated how AI can enhance legal decision-making and streamline the research process.[181] However, the adoption of AI in legal research is not without risks.[182] AI-powered tools designed to learn and adapt based on 'user preferences' obscure conventional boundaries of accountability when errors arise,[183] leading to issues like misinterpreted contract clauses or flawed legal memorandums.[184] This raises questions, as highlighted by scholars like Harry Surden, about whether engineers who design these tools or lawyers who use them should be 'vicariously liable' for such AI-driven errors.[185] At the same time, critics like Daniel E. Ho and Colleen Honigsberg caution us against implementing overly restrictive frameworks, arguing that excessive regulation could stifle innovation.[186]

Algorithmic bias and the ethical implications of AI in legal decision-making further complicate the adoption of these tools.[187] The key issue of algorithmic bias, as demonstrated in examples like the COMPAS tool and in the case of *State v Loomis*,[188] highlights the risks of perpetuating systemic inequalities.[189] Biased datasets and opaque methodologies can lead to unjust outcomes, particularly for marginalised groups.[190] Professors like Ruha Benjamin and Timnit Gebru warn that unchecked biases in AI undermine fairness, reliability, and 'due process' rights, raising critical concerns for the integrity of legal research and the broader justice system.[191] Addressing these issues requires transparency, rigorous

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[177] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 98.
[178] Ibid., 97.
[179] Ibid.
[180] Maxi Scherer (n 82) 572-73.
[181] Sean Semmler and Zeeve Rose (n 13) 98-99.
[182] Maxi Scherer (n 82) 557-60.
[183] Sean Semmler and Zeeve Rose (n 13) 95-97.
[184] Ibid.
[185] Harry Surden (n 78) 1305-1337.
[186] Daniel E. Ho, Colleen Honigsberg and others (n 79).
[187] Ibid.
[188] [2016] (n 93).
[189] Julia Angwin and others (n 102).
[190] Ibid.
[191] Ruha Benjamin (n 107).

auditing, and algorithms specifically designed to mitigate bias to ensure AI tools uphold the principles of justice and equity.[192] While AI can significantly improve efficiency and accessibility in legal research, its full potential can only be realised if these issues are addressed promptly.[193]

Regulatory frameworks like the GDPR 2016[194] play a vital role in shaping how AI is used in legal research.[195] However, we have seen how the 'limited 'right to be informed" does not mandate a detailed explanation of how AI tools function, therefore raising questions about whether this right, as it currently stands in the regulation, truly exists.[196] We also looked at how Article 22 addresses 'automated decision-making' and 'profiling',[197] revealing ambiguities surrounding its interpretation.[198] Specifically, we explored the concept of 'solely automated' decisions and found that the semantics of Article 22 give rise to 'two plausible interpretations', further complicating the legal landscape.[199] One interpretation is strict, considering a decision 'solely automated' only if there is no human element involved.[200] The other is more 'inclusive', allowing decisions to still be considered as 'solely automated' even if there is minimal 'human involvement', such as a human overseeing the process without intervening in the final decision.[201] This ambiguity complicates the legal landscape and weakens the GDPR's ability to fully address the complexities of AI-driven decision-making, as the regulation lacks 'precise language', [clearly] defined rights' and 'safeguards',[202] which risks rendering it ineffective in addressing the complexities of AI.[203]

To conclude, while AI can significantly enhance the effectiveness of legal research, its adoption must be approached with caution.[204] As AI advances, it is crucial to continuously scrutinise its ethical implications and refine data governance practices, while ensuring strict compliance with regulatory bodies, to promote its responsible use in the legal sector.[205] 'Data controllers' operating in 'highly sensitive or [high-risk] sectors' could, for instance, be required to employ decision-making methods that are interpretable by humans.[206] More ethical requirements for auditing algorithms may be needed, both as standalone tools for accountability and as systems that provide a clear 'evidence trail' of automated decision-making processes.[207] This will thus help ensure that AI systems are not only effective but also transparent and ethically aligned. Law firms, in particular, must prioritise these considerations to ensure AI tools support legal decision-making without compromising fairness, transparency, or integrity.[208]

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[192] Timnit Gebru (n 109).
[193] Ibid.
[194] GDPR (n 23).
[195] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 98-99.
[196] Ibid., 77.
[197] Ibid., 91-3.
[198] Ibid., 76-7.
[199] Ibid., 98.
[200] Ibid., 92.
[201] Ibid., 98.
[202] Ibid., 97.
[203] Ibid.
[204] Sean Semmler (n 13) 98-99.
[205] Ibid., 96.
[206] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 135) 99.
[207] Ibid.
[208] Sean Semmler (n 13) 96.

Similarly, courts must focus on maintaining impartiality and the integrity of the justice system while leveraging AI to enhance legal processes.[209] Moving forward, it is essential that the legal industry and the judiciary invest in AI solutions that are both innovative and ethically sound, striking a 'balance' between technological advancements and the core values that safeguard the legal system's integrity.[210]

1.2. Can predictive analytics be beneficially utilised to anticipate case outcomes?
By Charles McCulloch

Predictive analytics involves the application of various statistical techniques including AI and Machine Learning to identify patterns within large groups of data.[211] In the legal context, these datasets can comprise case law, judicial decisions and other legal documents. These are vast datasets that are traditionally analysed manually by lawyers - a time consuming task that can be streamlined and made more accurate through the integration of automated analytics,[212] case studies report up to a 90 percent reduction in document review time through the application of AI analysis.[213] Predictive analytics models utilise the aforementioned review process to create an output that reveals a quantified statistical depiction of what the likely outcome of a legal action will be. For instance, identifying the viability of a case or the impact of a contractual provision on later litigation.[214] This stands to support a lawyer's ability to provide their client with accurate predictions by bolstering their experience with data driven advice.[215]

By further incorporating AI, the analytical abilities of these models are expanded. Natural Language Processing (NLP) methods allow systems to look past substantive features like case metrics and delve into the personalities of litigation participants, identifying behavioural trends,[216] i.e. looking at how a judge is likely to rule based on their behaviour rather than case facts. US based AI firm 'Pre/Dicta' claims their model can predict a judge's ruling with 86 percent accuracy – without considering case facts.[217]

Moreover, the application of predictive analytics extends past the litigator and into judicial systems. Through the analysis of past judicial rulings, Automated Decision Making (ADM) processes can assist legal authorities with recommended actions or - in some cases - to filter and independently make

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[209] Sean Semmler (n 13).
[210] Ibid., 99.
[211] Frederic Michard and Jean Louis Teboul, 'Predictive Analytics: Beyond the Buzz' (2019) 9 Annals of Intensive Care.
[212] Irene Pietropaoli, 'Use of Artificial Intelligence in Legal Practice' (*BIICL*, 2023) <https://www.biicl.org/documents/170_use_of_artificial_intelligence_in_legal_practice_final.pdf> accessed 4 July 2024.
[213] Alex Shahrestani, 'AI in Legal Firms: A Case Study on Efficiency Gains' (*The Art of Law and Technology,* 17 June 2024) <https://blog.promise.legal/ai-in-legal-firms-a-case-study-on-efficiency-gains/> accessed 9 July 2024.
[214] Daniel M Katz, Ron Dolin and Michael J Bommarito, *Legal Informatics* (Cambridge University Press 2021) 93.
[215] Ibid.
[216] Kevin D Ashley, 'A Brief History of the Changing Roles of Case Prediction in AI and Law' (2019) 36 Law in Context. A Socio-legal Journal 93.
[217] Heath Ryan, 'AI Tells Lawyers How Judges Are Likely to Rule' (*Axios,* 12 September 2023) <https://www.axios.com/2023/09/12/ai-judges-trials-predictions> accessed 29 June 2024.

decisions.[218] This technology can be seen in the Brazilian Supreme Court who developed 'VICTOR' in 2018, a model that determines whether an appeal should be brought before a judge, greatly decreasing the time spent on appeal processing.[219] In doing so, the models go past predicting a case outcome and effectively make decisions.

The benefits and present capabilities of predictive analytics are reflected through its vast uptake. A survey conducted by Lex Machina found that 70 percent of legal professionals at large US law firms were already using legal analytics for litigation in 2020.[220] However, the uptake of such models is notably far lower in Europe. A survey of UK law firms found that only 2 percent of respondents were using predictive analytics for litigation in 2020.[221] There appears a likely reason for this discrepancy - data.

As established, predictive analytics requires a vast amount of training data, herein lies a key hurdle. The GDPR and Data Protection Act (DPA) place significant restrictions on the use of personal data to develop 'lawtech' applications, inhibiting development by law firms based in Europe.[222] In terms of use by the judiciary, predictive analytics and ADM models raise a plethora of Kafkaesque ethical questions due to their ability to effectively decide case outcomes and find a roadblock in the form of the new EU AI act; which has ranked AI use in the 'administration of justice and democratic processes' as 'high risk'.[223]

In a practical sense, it is easy to surmise that predictive analytics can be used to predict case outcomes - as the technology has been shown to exist, however, its beneficial use is contingent on the legislative environment where it is intended to be deployed and developed. Hence, this article will proceed to analyse whether predictive analytics can be beneficially utilised in Europe by examining the legal and ethical considerations regarding its viability in the continent. The article will first examine this through the view of litigators, examining the inhibitions regarding training data. This is followed by a discussion on its application in the judiciary focused on legislative and ethical hurdles. Ultimately, it will be concluded that data privacy restrictions and the EU AI act represent significant roadblocks for predictive analytics models to be trained to a level where beneficial use in Europe becomes viable.

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[218] Carolin Kemper, 'Kafkaesque AI? Legal Decision-Making in the Era of Machine Learning' (*SSRN*, 7 December 2020) 261 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3744199> accessed 1 July 2024.
[219] Amy Guthrie, 'Brazil's Overwhelmed Judiciary, Desperate for Help, Turns to Artificial Intelligence' (*ALM Law.com,* 16 January 2024) <https://www.law.com/international-edition/2024/01/16/brazils-overwhelmed-judiciary-desperate-for-help-turns-to-artificial-intelligence/> accessed 3 July 2024.
[220] Lex Machina, 'Legal Analytics' (*Lex Machina,* 2024) <https://pages.lexmachina.com/rs/098-SHZ-498/images/2024%20Legal%20Analytics%20Survey.pdf?version=0> accessed 1 July 2024.
[221] John Armour, Richard Parnham and Mari Sako, 'Augmented Lawyering' (2020) 558/2020 European Corporate Governance Institute Working Paper 1, 24.
[222] Richard Parnham, Mari Sako, and John Armour, 'AI-assisted lawtech: its impact on law firms' (2021) Oxford: University of Oxford 8, 24.
[223] European Commission, 'Regulatory Framework on AI | Shaping Europe's Digital Future' (*European Commission,* 6 March 2024) <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai> accessed 2 July 2024.

1.2.1. Use by litigators

Anticipating case outcomes using predictive analytics – at present – involves the use of a database that contains a catalogue of factors which can be manually compared to a case in question to provide a prediction. These factors are vast and can include: the ideological leanings of the court or judges, case specific factors from various texts and even linguistic features of judgements.[224] The role of AI here is to draw trends in these features and provide an analytical platform for lawyers. 'Lex Machina', for instance, provides users an overview of Judges containing their case history and comprehensive statistics involving their ruling patterns. This extends to analytics of opposing law firms or counsels past cases.[225] Developing these models can be done through training with publicly accessible data or with client information, each facing legislative hurdles.

1.2.1.1. Training with publicly accessible case data

Central to these programs is the large amount of training data required, this marks a key reason for the significantly lower uptake of such models in Europe compared to the USA.[226] Court documents and filings in the USA are considered 'public domain' and can typically be used with limited restrictions.[227] Contrarily, in the EU, the processing of personal data, even when found in publicly accessible information – e.g. CJEU proceedings – are contingent on the individuals rights under the GDPR. This is made clear under Recital 154 which allows the principle of public access to official documents while stating that the regulation: 'leaves intact and in no way affects the level of protection of natural persons with regard to the processing of personal data'.[228] In resolution of this, and in line with the *de minimis* principle of Article 5, companies seeking training data from public databases may specifically accumulate non-identifiable features and metrics like the type of case and how it was ruled. Through 'pre-processing' processes, this data can be transformed into numerical values to formulate statistical inferences. This must be done to an extent where the data can no longer be used to single out individuals – making the data no-longer 'personal' and outside the remit of the GDPR.[229]

While the importance of identifiable personal data within cases is perhaps negligible to predictive analytics, a key feature of these platforms is tying these statistics to individual judges.[230] This inherently

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[224] Rafe Athar Shaikh, Tirath Prasad Sahu and Veena Anand, 'Predicting Outcomes of Legal Cases Based on Legal Factors Using Classifiers' (2020) 167 Procedia Computer Science 2393, 2394.
[225] Lex Machina, 'Quick Guide 1: Legal Analytics Court Analytics' (2024) <https://pages.lexmachina.com/rs/098-SHZ-498/images/QuickGuidesComplete.pdf> accessed 4 July 2024.
[226] Cf. 70% usage of predictive analytics in US firms versus 2% in the UK. Lex Machina (n 220) and A2mour et al. (n 221).
[227] USC, 'Accessing Court Documents – Journalist's Guide' (*United States Courts,* 2020) <https://www.uscourts.gov/statistics-reports/accessing-court-documents-journalists-guide> accessed 4 July 2024.
[228] GDPR (n 23).
[229] ICO, 'How Do We Ensure Individual Rights in Our AI Systems?' (*Information Comissioner's Office* 19 June 2024) <https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/artificial-intelligence/guidance-on-ai-and-data-protection/how-do-we-ensure-individual-rights-in-our-ai-systems/#:~:text=You%20must%20inform%20individuals%20if> accessed 4 July 2024.
[230] Solomonic, 'Litigation Analytics: What Case Prediction Brings to the Litigator's Armoury' (*Solomonic,* 26 May 2024) <https://www.solomonic.co.uk/news-insights/litigation-analytics-what-case-prediction-brings-to-the-litigators-armoury#:~:text=The%20objective%20of%20case%20prediction> accessed 5 July 2024.

requires the use of personal data and would thus require explicit consent of the judges involved.[231] Moreover, a feature of programs like 'Pre/Dicta', involves full biographic breakdowns of judges including their political leanings inferred by the model, a process that is explicitly prohibited under Article 9 of the GDPR.[232]

Ultimately, the GDPR represents a significant roadblock to the training of predictive analytics programs using publicly available case data – within the EU. Notably, in 2019 these practices were made a criminal offence in France under Article 33 of the Justice Reform act which states: 'The identity data of magistrates and members of the judiciary cannot be reused with the purpose or effect of evaluating, analysing, comparing or predicting their actual or alleged professional practices.' [233]
The controversial reform was created in response to the publication of a ML based analysis of French asylum judicial decisions.[234] This highlights the drastically different viability of predictive analytics models based on region, even within the EU itself.

1.2.1.2. Training systems with client information

Law firms may also turn to internally gathered client data to develop their analytical models, deriving statistical insights in comparison with past clients.[235] Falling under GDPR/DPA requirements, the gathering and use of this data becomes an onerous task. Surveyed UK law firms generally held an aversion to using client data for other clients, citing difficulties with ownership and consent.[236] The GDPR stipulates data use must be 'necessary' in relation to its original purpose. The EU courts have taken a rigid interpretation to this requirement as highlighted in Meta[237] where processing must be: 'objectively indispensable for the purpose that is integral to the contractual obligation intended for the data subject'[238]

While this was in the context of predictive analytics for social media marketing, it reveals the bar of explicitly required when seeking client permission, increasing compliance difficulties – especially where the firm intends to contract an outside developer to build their models.[239] Such outsourcing spawns additional confidentiality and security risks that could necessitate a Data Protection Impact Assessment under Article 35 of the GDPR which states its relevance when 'using new technologies'.[240] Notably, in the US, the American Bar Association requires client data to be safeguarded 'with the care of a

[231] GDPR (n 23) Article 6a.
[232] Ryan (n 217).
[233] Malcolm Langford and Mikael Rask Madsen, 'France Criminalises Research on Judges' (*Verfassungsblog*, 2019) <https://verfassungsblog.de/france-criminalises-research-on-judges/#:~:text=Article%2033%20of%20the%20Justice> accessed 8 July 2024.
[234] Ibid.
[235] Parnham et al. (n 12), 25.
[236] Ibid.
[237] Case C-252/21 Meta v Bundeskartellamt [2023] OJ C320.
[238] Ibid., para 98.
[239] Parnham et al. (n 109), 26.
[240] GDPR (n 23).

professional fiduciary' when used for the development of AI tools,[241] perhaps indicating a similarity in the high standard of care required when training predictive models with client data.

Overall, using client information for predictive analytics faces differing regulatory hurdles to publicly accessible information where the main issues are acquiring the correct consent to use the information and developing the infrastructure to either develop or safely protect client information i.e. hiring a data protection officer.[242]

1.2.2. Judicial use & legislative hurdles

On the other side of the bench, AI tools like Brazil's 'VICTOR' aim to ease judicial workloads by identifying plausible appeal cases, predicting whether the case holds merit to stand trial.[243] The recently developed EU AI act specifically classes such systems as 'high-risk,' including those: 'intended to be used by a judicial authority or on its behalf to assist judicial authorities in researching and interpreting facts and the law'[244]

This extensive definition incorporates not only decision-making tools, but assistive tools like predictive analytics. A practical use for such tools is assessing the risk of recidivism of offenders. The infamous COMPAS system in the US, provides recidivism scores to judicial bodies that identify the probability of re offence to guide case outcomes.[245] To derive this score it analyses a variety of personal details including age, age at first arrest, histories of violence and noncompliance and vocation education.[246]

Developing such a program in the EU would likely struggle to meet GDPR requirements due to the vast amount of personal data required. While Article 6(e) allows lawful processing 'carried out in the public interest or in the exercise of official authority'[247], in *Norra Stockholm Bygg*[248] the courts took a very narrow view of this application in line with the principles of proportionality and data minimisation. Hence, the practical application of predictive analytics for judicial assistance would have to pass hurdles of the GDPR and EU AI act compliance. The latter, subjects 'high-risk' tools to requirements set out in Articles 8-15 of the AI act that include robust risk management systems, accuracy and oversight requirement and extensive record keeping *inter alia.*[249] Interestingly, multiple research papers cite Estonia

[241] Irene Pietropaoli, 'Use of Artificial Intelligence in Legal Practice' (*BIICL*, 2023) <https://www.biicl.org/documents/170_use_of_artificial_intelligence_in_legal_practice_final.pdf> accessed 4 July 2024.
[242] GDPR (n 23) Rec 77.
[243] Guthrie (n 219).
[244] EU AI Act (n 2), Rec 61.
[245] Cynthia Rudin, Caroline Wang and Beau Coker, 'The Age of Secrecy and Unfairness in Recidivism Prediction' (2020) 2 Harvard Data Science Review.
[246] Ibid., 7.
[247] GDPR (n 23).
[248] Case C-268/21 *Norra Stockholm Bygg* [2023] ECLI:EU:C:2023:145.
[249] EU AI Act (n 2), Section 2.

as an example of an EU member state developing an AI 'robot judge'.[250] This assertion is false and has been rebutted by the Estonian Ministry of Justice.[251]

1.2.2.1. Ethical considerations

A well-documented risk of AI systems is their propensity to perpetuate biases found when analysing past behavioural trends. This marks the aforementioned infamy of the COMPAS system which has faced accusations of racial bias - despite not using races as input data it has been suggested the model reverse engineers 'proxies for race'.[252] However, independent studies have indicated that it is unlikely that COMPAS depends on 'criminal history and proxies for race'.[253] Nevertheless, an issue here was the 'black box' nature of the model where it was difficult for even the developers to identify how conclusions were made by the model,[254] which clashes with the principle of transparency central to judicial systems.[255]

Moreover, there are concerns of 'automation bias' where a lack of explainability means a Judge could struggle to meaningfully review the reasonings behind an algorithmic conclusion and form an opaque reliance upon the data.[256] This aligns with academic debates about the compatibility of mathematical logic with law where it is argued that the binary nature of statistics can take away from the contextual interpretation of laws.[257] By relying on AI generated predictions, Koukoulioti suggests the conscious reasoning and intuition that Judges apply to interpret case facts could be diminished, leading to 'ossified' outcomes. She further suggests the possibility of AI-induced 'judicial conformism' that can exacerbate biases and ignore 'evolving societal intricacies.'[258]

Statistics led decision making *prima facie* promises to support increased efficiency and consistent judicial decision making by providing an 'impartial' numerical value.[259] However, its conflict with common law principles and the 'humanity' of a Judge-led decision making represent significant ethical hurdles for the application of predictive analytics in the courts. Hence, shifting the primary question to whether these models should be used.

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[250] See Kemper (n 218) 266 as an example.
[251] Marta Cantero and Giulia Gentile, 'Algorithms, Rule of Law, and the Future of Justice: Implications in the Estonian Justice System' (2023) EUI, STG, Policy Brief, 2023/27 (EUI School of Transnational Governance 2023) 4.
[252] Kemper (n 218) 266.
[253] Rudin et al. (n 245) 30.
[254] Ibid.
[255] Kemper (n 218) 280.
[256] Ibid.
[257] Cantero and Gentile (n 251) 4.
[258] Vasiliki Koukoulioti, 'Robot Judges and the Use of Predictive Justice in Tax Cases' (2024) Tax Journal <https://www.taxjournal.com/articles/robot-judges-the-use-of-predictive-justice-in-tax-cases> accessed 8 July 2024.
[259] Cantero and Gentile (n 251) 5.

1.2.3. Conclusion

As established, the technology for predictive analytics to predict case outcomes exists primarily in the US where programs like 'Lex Machina' provide anticipatory statistics for case outcomes. For judicial application – tools such as 'COMPAS' exist that predict recidivism, guiding the outcome of cases. The key benefit of these tools is the role of data led decision-making and predictions. However, the practicality of adoption in Europe is hindered by the need for personal training data which is often protected by extensive GDPR/DPA requirements. With regards to Judicial uses, the EU AI act's 'high-risk' categorisation of such models further raises the compliance hurdle for developers. Furthermore, using predictive analytics in the judiciary raises a plethora of ethical considerations that could hinder public acceptance and thus, its beneficial use. Ultimately, it is safe to conclude that predictive analytics could be used to beneficially predict case outcomes. However, this faces tough legislative hurdles in Europe which presently inhibit the development and deployment of these models.

1.3. Can AI replicate and understand the nuance of law and lawyers?

By Hilal Durek

The development of technology in the legal profession has offered new potentials for enhancing communication with clients, reducing costs, and enabling more people to access legal services.[260] In recent years, Artificial Intelligence ("AI") based technologies, such as Machine Learning ("ML"), Natural Language Processing (NLP), and data analytics, have further deepened this transformation.[261] To this extent, AI has automated tasks in the field of law with its functions of processing massive amounts of data sets and making predictions and has proved significantly convenient in terms of supporting human intelligence[262] and increasing productivity.[263] Well-known examples include Ross Intelligence[264], designed by IBM Watson to provide concise answers to legal questions, and DoNotPay[265], a legal service that uses AI to dispute parking tickets.

However, to assess whether AI can truly understand the nuances of the law and lawyers and whether it has the competency to replace the practice, it is necessary to delve deeper into the current applications and future potential of these technologies. To this end, this paper is divided into five sections in making the assessment. The following points will be analysed in the subsequent order: the role of AI in legal

[260] The Law Society of England and Wales, 'Artificial Intelligence (AI) and the Legal Profession' (*The Law Society*, May 2018) <https://www.lawsociety.org.uk/topics/research/ai-artificial-intelligence-and-the-legal-profession> accessed 25 September 2024.
[261] Dana Remus and Frank S. Levy, 'Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law' (2016) 2 SSRN <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2701092> accessed 25 September 2024.
[262] The Law Society of England and Wales (n 260) 4.
[263] Ammar Zafar, 'Balancing the Scale: Navigating Ethical and Practical Challenges of Artificial Intelligence (AI) Integration in Legal Practices' (2024) 4 *Discov Artif Intell* 27, 38 <https://doi.org/10.1007/s44163-024-00121-8> accessed 25 September 2024.
[264] *'ROSS'* <http://www.rossintelligence.com> accessed 25 September 2024.
[265] *'DoNotPay'* <https://donotpay.com> accessed 25 September 2024. See also Garry E. Marchant, 'Artificial Intelligence and the Future of Legal Practice' (2017) TheSciTechLawyer 21 <https://www.iadclaw.org/assets/1/7/10.4-_Marchant-_ai_and_practice_of_law_SciTech_lawyer.pdf> accessed 25 September 2024.

practice, AI's capabilities in replicating legal tasks, AI versus human lawyers, understanding the nuance of law and legal practice, and conclusion.

1.3.1. The Role of AI in Legal Practice

AI offers potential solutions to speed up traditionally lengthy and complex legal proceedings, improve the accuracy and consistency of decisions,[266] and enhance the quality of legal services provided by human lawyers.[267] AI presents the opportunity to automate routine and simplify processes,[268] allowing human lawyers to better interact with laws, court decisions, and case law[269], and to focus on more complex problems with greater diligence.[270] Moreover, the analysis of existing data can allow for the identification of potential downfalls in the legal process, the formulation of targeted strategies and the uncovering of relevant information.[271]

AI technologies used in the legal sector are generally Machine Learning functioned (ML), where computers learn by routine and experience, or alternatively Natural Language Processing (NLP), where computers learn "to understand the meaning of spoken or written human speech and to apply and integrate this understanding to perform human-like analysis" [272]. In essence, AI operates as a chain of logical processes. In this context, it first takes some inputs that have previously appeared in practical legal practice, client interviews, or legal documents and generates outputs based on a series of pre-programmed processes. [273] "This process, while seemingly complex, is often routine, repeatable, and programmable."[274] This technology facilitates the adaptation of legal principles to real-world scenarios and can aid the obtaining of fair and objective decisions. [275]

1.3.2. AI's Capabilities in Replicating Legal Tasks

While AI can perform some legal tasks as well as, and sometimes even better than, a human lawyer, it is still too weak to automate others. AI technologies can be used in several ways in the practice of law. These can be simple tasks[276] such as searching legal databases for court decisions or precedents, or

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[266] DRI Center for Law and Public Policy Artificial Intelligence Working Group, 'Artificial Intelligence in Legal Practice Benefits, Considerations, and Best Practices' (2024) Artificial Intelligence in Legal Practice 10 <https://www.dri.org/docs/default-source/dri-white-papers-and-reports/ai-legal-practice.pdf> accessed 25 September 2024; Zafar (n 263) 2; See also University College London, 'AI predicts outcomes of human rights trials' (October 24, 2016) <https://www.ucl.ac.uk/news/2016/oct/ai-predicts-outcomes-human-rights-trials> accessed 25 September 2024)

[267] American Bar Association, 'Formal Opinion 512-Generative Artificial Intelligence Tools' (29 July 2024) 1 <https://www.americanbar.org/content/dam/aba/administrative/professional_responsibility/ethics-opinions/aba-formal-opinion-512.pdf> accessed 25 September 2024.

[268] The Law Society of England and Wales (n 260) 8.

[269] Anum Shahid, Gohar Masood Qureshi and Faiza Chaudhary, 'Transforming Legal Practice: The Role of AI in Modern Law' (2023) 4 Journal of Strategic Policy and Global Affairs 36 <https://jspga.com/index.php/jspga/article/view/21> accessed 25 September 2024.

[270] Ibid.

[271] DRI Center for Law and Public Policy (n 266) 10.

[272] Shahid, Masood Qureshi and Chaudhary (n 162) 37. See also Marchant (n 265) 21.

[273] DRI Center for Law and Public Policy (n 266) 12.

[274] Ibid.

[275] Zafar (n 263) 4.

[276] Marchant (n 265) 21.

more complex tasks such as document management and review, discovery, and drafting legal documents[277]:

Document Review and Management: AI technologies have long been successfully applied to legal tasks such as creating databases and filing systems and managing documents. [278] Furthermore, reviewing the content of documents in depth by analysing their main points and requirements and assessing whether these documents respond to specific requests is another important function AI provides. These applications have been used as a cost-effective tool to increase the productivity of lawyers.[279] In fact, many studies have shown that predictive coding technology provides much better analysis and accuracy in document scanning than human lawyers. [280]

Legal Research: In legal research, it is generally accepted that AI systems perform more effectively and efficiently than human lawyers because they can conduct research faster and more proficiently.[281] LexisNexis[282], for example, is one of the AI tools created to perform simple tasks. It should be noted, however, that the AI system may be weak in the face of complex questions that it has not yet encountered.[283] Although better results can be obtained with more training data,[284] it should be kept in mind that the data minimisation principle, which has an important place in European Union data protection law,[285] does not allow unlimited quantitative use of data and that continuous data training may cause heavy burdens both temporally and financially.

Discovery: Discovery applications are another area where AI fulfils legal tasks well due to their capabilities such as document scanning. [286] However, this area cannot be fully automated as it requires training and classification by a human lawyer and even creates excessive costs for small-scale cases.[287] Furthermore, the outputs generated by AI technologies will need to be reviewed by human lawyers and defended in court. [288]

Due Diligence: Due diligence refers to the comprehensive assessment and investigation of all legal and factual issues relevant to a legal transaction.[289] This process includes steps such as reviewing documents,

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[277] Marchant (n 265) 21.
[278] Shahid, Masood Qureshi and Chaudhary (n 269) 38.
[279] Remus and S. Levy (n 261) 17.
[280] Marchant (n 265) 21; Ibid., 20.
[281] Shahid, Masood Qureshi and Chaudhary (n 162) 39; Marchant (n 265) 22; Remus and S. Levy (n 261) 25.
[282] *'LexisNexis'* <https://www.lexisnexis.com/en-us/gateway.page> accessed 25 September 2024.
[283] Remus and S. Levy (n 261) 28.
[284] The Norwegian Data Protection Authority, 'Artificial Intelligence and Privacy' (*Datatilsynet*, January 2018) 11 <https://www.datatilsynet.no/globalassets/global/english/ai-and-privacy.pdf> accessed 25 September 2024.
[285] Council Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC [2016] OJ L119/1.
[286] Dana Remus and Frank S. Levy (n 154) 20.
[287] Michael Legg and Felicity Bell, 'Artificial Intelligence and the Legal Profession: Becoming the AI-Enhanced Lawyer' (2019) 38(2) University of Tasmania Law Review 34, 42 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3725949> accessed 25 September 2024; Remus and S. Levy (n 261) 20.
[288] Remus and S. Levy (n 261) 20.
[289] Ibid.

investigating facts, and interviewing parties. [290] An example of an application of automated due diligence is KiraSystems, which provides effective use in many legal areas, such as risk assessment and conformity checking, through the review and analysis of contracts and documents. [291] While AI exhibits positive characteristics in performing some of the due diligence procedures [292], it is weak in other aspects that require the investigation of unexpected documents. [293] Where the human lawyer can act with common sense and context in the face of unexpected facts, AI is unable to develop automation beyond the data they are trained to understand contexts and use common sense. [294] Moreover, common sense communication requires unstructured communication, which is difficult for AI to replicate. [295]

Drafting Legal Documents: AI can prepare sample templates similar to human lawyers for the production of documents such as petitions, contracts, wills, etc. [296] LegalZoom [297] is one of the examples that allows the production of many documents such as wills, powers of attorney, and divorce petitions. However, in documents prepared outside the areas where template petitions can be used, it is much more difficult for AI technologies to automate characteristic legal writings typical of human lawyers.[298] This is because legal writings usually do not contain the configuration required for automation, except for the standard and predictable parts.[299] They also require creativity and flexibility in dealing with ambiguous situations and a strong interaction between legal rules and practical facts which at present is difficult for AI to achieve.[300] While the human lawyer shows the ability to fill in the gaps in the law when necessary and to adapt different legal concepts to the case at hand by analogy, these requirements may be beyond the capacity of AI systems for the time being.

As can be seen, AI is more effective in routine tasks and less capable in legal tasks where creativity, flexibility, and other human-like behaviours are needed. AI systems are limited in cases where there is no specific routine or in cases outside the data it is trained on, and the power of its predictive ability decreases.[301] Legal tasks may prove too complex to be modelled by a set of instructions or to form a sequence or comprehensive routine that matches AI algorithm.[302]

1.3.3. AI Versus Human Lawyers

AI has obvious shortcomings in comparison to a lawyer. For instance, AI is not strong enough to explain rationale and reasoning to its clients.[303] Moreover, the human lawyer is capable of questioning

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[290] Remus and S. Levy (n 261) 20.
[291] *'Kira Systems'* <https://kirasystems.com> accessed 25 September 2024.
[292] DRI Center for Law and Public Policy (n 266) 9.
[293] Remus and S. Levy (n 261) 21.
[294] Ibid., 21-22.
[295] Ibid., 49.
[296] Zafar (n 263) 1; Legg and Bell (n 287) 53.
[297] *'LegalZoom'* <https://www.legalzoom.com> accessed 25 September 2024.
[298] Remus and S. Levy (n 261) 23.
[299] Ibid., 24.
[300] Ibid.
[301] Ibid., 13-14.
[302] Ibid.
[303] Legg and Bell (n 287) 56.

and objecting, for example, objecting to the inclusion of a clause in a contract where necessary[304], or dissuading a client from certain demands.[305] Lawyers must also be diligent in protecting personal data, and ensuring confidentiality.[306] AI may not always understand the context of a particular legal task and therefore may fall short of the qualifications of a human lawyer as mentioned above.

Furthermore, the human lawyer has the ability to detect the emotions of parties to a legal scenario and, where necessary, can change strategy according to certain emotions. Although many advances have been made in affective computing and emotion recognition systems to enable computers to detect human emotions and exhibit emotional behaviours, this field is still with many uncertainties and has not yet achieved full confidence.[307] In this context, the inability of AI technologies to recognize and act on complex emotional states like a lawyer proves disadvantageous.[308]

AI is far from being able to perform many tasks that require human communication and interaction.[309] Legal counselling involves facilitating individuals' access to legal information, interacting with the client, and providing assurance.[310] AI proves weak in communicating and interacting with the client and adversary, as such functions and behavioural scenarios cannot be automated.[311] The skill of human lawyers proves to be of utmost importance in the face of clients who want the judgement and assurance of a lawyer. [312]

Effective lawyering involves offering more than predictions but rather involves negotiation and the establishment of personal connection.[313] Lawyering also may require non-verbal communication and confirmations. Human tactics of sarcasm or the ability to withhold information require more flexibility than a machine is capable of.[314] For instance, mediation practice requires lawyers to use skills that AI does not yet have the capacity to do effectively and consistently, such as reading body language and identifying and interpreting underlying concerns and emotions.[315]

AI technologies are significantly weaker than human lawyers in terms of defence of court proceedings. [316] This is because a lawyer has to present the facts during the hearing by the principles of justice and

[304] Legg and Bell (n 287) 56.
[305] DRI Center for Law and Public Policy (n 266) 12.
[306] Legg and Bell (n 287) 56.
[307] Remus and S. Levy (n 261) 14; Thomas Gremsl and Elisabeth Hödl, 'Emotional AI: Legal and Ethical Challenges' (2022) 27 *Information Polity* 163-174 <https://content.iospress.com/articles/information-polity/ip211529> accessed 25 September 2024.
[308] Ibid.
[309] Ibid., 17, 31.
[310] Qureshi (n 261) 41; Remus and S. Levy (n 261) 31.
[311] Ibid.
[312] Ibid., 32.
[313] Ibid., 63.
[314] Ibid., 34.
[315] Mathilde Janier and Chris Reed, 'Towards a Theory of Close Analysis for Dispute Mediation Discourse' (2017) 31 Argumentation 45 <https://doi.org/10.1007/s10503-015-9386-y> accessed 25 September 2024.
[316] Remus and S. Levy (n 261) 36.

fairness, engage emotionally with the judge, and be convincing, persuasive, and sincere.[317] AI technologies will also fall short in terms of the lawyer's skills based on his or her humanity and moral and ethical values.[318]

1.3.4. Understanding the Nuance of Law and Legal Practice

AI technologies have potentially transformative prospects in the legal field, with their ability to easily scan laws and legislation and glean relevant information from this data.[319] However, there are some obstacles for AI technologies to understand the notion of law and to be successful in legal practice.

As explained in the section above, AI utilises the "prediction" step in decision-making but cannot perform the "judgement" step.[320] Judgement requires a combination of many human factors such as experience and empathy, and consideration of both legal and non-legal processes.[321] Judgement cannot be represented by formulae or rules. [322] AI cannot currently automate these abilities of judgement and discretion that human lawyers possess[323] and because it lacks this unquantifiable ability, will need external observation for its shortcomings and may fail to take all concerns into account when making decisions.[324]

Moreover, machine errors pose a much greater risk and can be very difficult or impossible to recover. [325] Some AI systems may make mistakes that humans would not make, such as mistaking a turtle for a gun.[326] In addition, AI technologies such as ML may have difficulty in identifying sudden problems and may fail to alert the user or may sometimes be late in alerting the user because they cannot identify the existence of the problem, to begin with.[327]

Finally, the transposition of laws into computer codes is a significant problem. Transferring complex real-world relationships, non-objective considerations or abstract concepts such as discretion into

[317] John C Shepherd and Jordan B Cherrick, 'Advocacy and Emotion' (2006) 3 Journal of the Association of Legal Writing Directors 154, 165 <https://heinonline-org.ucc.idm.oclc.org/HOL/Page?handle=hein.journals/jalwd3&div=11&id=&page=&collection=journals> accessed 25 September 2024.
[318] Legg and Bell (n 287) 36.
[319] Y Qu, Z Zhang and B Bai, 'The Way Forward for Legal Knowledge Engineers in the Big Data Era with the Impact of AI Technology' (2023) 6th International Conference on Artificial Intelligence and Big Data (ICAIBD) 225 <https://ieeexplore.ieee.org/document/10206169/> accessed 25 September 2024.
[320] Legg and Bell (n 287) 37.
[321] Ibid.
[322] Ibid., 55.
[323] DRI Center for Law and Public Policy (n 266) 1.
[324] Ibid.
[325] Remus and S. Levy (n 261) 55.
[326] Zafar (n 263) 3.
[327] Remus and S. Levy (n 261) 61.

computer programs requires us to "quantify the qualitative, discretise the continuous, or formalise the informal".[328] AI technologies are still not capable of fully automating the law and the work of lawyers.[329]

1.3.5. Conclusion

The general argument in favour of AI technologies is that AI can deliver better services to clients by eliminating human error, standardising services, and reducing costs.[330] In this sense, AI can be successful in routine legal tasks such as reviewing and analysing documents, conducting legal research, discovery or drafting simple templates, and can greatly benefit in facilitating the work of legal experts. Yet it is still a long way from meeting the capabilities of a human lawyer in performing complex tasks such as consultancy, defending in court, or mitigating risks that involve more than scanning and prediction. Moreover, the possibility that AI errors may be far more destructive than human errors, the ability of human experts to act strategically and ethically, and AI's lack of understanding of legal concepts that cannot be expressed in codes or abstract notions may further increase the need for human experts, despite legal tasks that AI can replicate in the legal profession.[331]

In this context, the integration of AI into legal practice remains an area that needs to be carefully evaluated.[332] Although AI technologies do not currently appear to be able to completely replace legal practice, they have the potential to replace at least the part of it that does not require a complex process.[333] Of course, this may change over time, and as AI technology evolves, machines may combine their predictive abilities with creativity to become more effective lawyers.[334]

1.4. To what extent can AI be used for automated drafting of routine legal documents?

By Danielle Blair and Wai Yuk Audrey Ku

As ChatGPT was launched by OpenAI in 2022, the revolutionary technology shocked the world. With the technology becoming more commonly used, this raises the question: to what extent can AI be used for automated drafting of routine legal documents?

This essay will use ethics as the basis for determining AI's capability in the legal profession because currently 'AI ethics is still in the infancy stage.' The technology has a low-level of transparency, data security and privacy and responsibility. This poses both technical and ethical concerns. The rapid evolution of AI necessitates an effective legal framework on its application, ensuring that public trust remains in legal processes. Ethical principles and regulations on AI should be evaluated to build ethical

[328] Friedman, B ve Nissenbaum, H, 'Bias in Computer Systems' (1996) 14 ACM Transactions on Information Systems 334 <https://nissenbaum.tech.cornell.edu/papers/Bias%20in%20Computer%20Systems.pdf> accessed 25 September 2024.
[329] Johansson E, Sutinen K, Lassila J, Lang V, Martikainen M, and Lehner OM, 'RegTech: A Necessary Tool to Keep Up with Compliance and Regulatory Changes?' (2019) 8 ACRN Journal of Finance and Risk Perspectives Special Issue Digital Accounting 71-85, 81.
[330] Remus and S. Levy (n 261) 59.
[331] The Law Society of England and Wales (n 260) 10.
[332] Ammar Zafar (n 263) 13.
[333] Legg and Bell (n 287) 25; Remus and S. Levy (n 154) 45.
[334] Dana Remus and Frank S. Levy (n 261) 64.

AI so this technology can finally be used in a safe way.[335] It is imperative to create regulations that maximise efficiency without compromising individual rights.

In this chapter, an overview of the current legislation on AI will be introduced. Then, the opportunities and risks of adopting AI in drafting will be examined. It will be concluded that despite AI being a powerful tool, legal professionals have not yet implemented AI in legal drafting. The future of using AI in doing so remains to be seen.

1.4.1. Definition

A variety of routine legal documents are drafted, including contracts, wills, judgments, indictments, claims, appeals, bills, and orders. [336] The focus of this chapter will be on legal practitioners, looking at the extent to which lawyers can draft routine documents like contracts or wills for their clients with the assistance of AI. Whether AI can be used in the legislative and judicial decision-making process will be examined in later chapters.

When it comes to drafting, we define it as including: 1. a large database with a search engine and 2. actual writing. Imagine a lawyer drafting a contract. First, AI can store and index the existing contracts. It then analyses the large volumes of contracts to find the relevant ones according to the lawyer's instructions.[337] Second, using appropriate materials, AI writes the initial contract and then reviews it by incorporating better legal terms to improve the contract's quality.[338]

1.4.2. Legislation

As a newly emerging, rapidly developing science, the legislation around AI is only now emerging. It primarily involves principles and recommendations.

1.4.2.1. The Organisation for Economic Co-operation and Development (OECD) Principles on AI

The OECD Recommendation on AI was adopted in 2019 and has most recently been updated in May 2024.[339] It is the first intergovernmental standard for the regulation of AI, comprising 47 adherents to the Principles[340], including the European Union, the United States and the United Nations. These

[335] Keng Siau & Weiyu Wang, 'Artificial Intelligence (AI) Ethics: Ethics of AI and Ethical AI' (2020) Journal of Database Management, 31(2) 74-87.
[336] Marko Marković & Stevan Gostoji, 'Legal document assembly system for introducing law students with legal drafting' (2023) 31 Artificial Intelligence and Law, 829–863.
[337] Irene Pietropaoli, 'Use of Artificial Intelligence in Legal Practice' (British Institute of International and Comparative Law 2023).
[338] Kathryn D. Betts & Kyle R. Jaep, 'The Dawn of Fully Automated Contract Drafting: Machine Learning Breathes New Life into a Decades-Old Promise' (2017) 15 Duke Law & Technology Review 216-233.
[339] OECD, 'OECD AI Principles Overview', OECD.AI Policy Observatory < https://oecd.ai/en/ai-principles > accessed 1 July 2024
[340] Ibid.

principles have created global interoperability, providing guidance on legal frameworks concerning the ethics and risks behind AI.

The OECD focuses on value-based principles. Section 1 concerns principles for responsible stewardship of trustworthy AI. It begins with 'Inclusive growth, sustainable development and well-being'.[341] This entails 'augmenting human capabilities and enhancing creativity.' Augmenting human capabilities allows AI to assist in drafting legal documents, a time-consuming task, so lawyers can work more efficiently. Adherents must also commit to the requirement of 'transparency and explainability.' Thus, if lawyers use AI in legal drafting, not only must they have a deep understanding of the technology, only using it in a way that doesn't violate the client's privacy and security, but they are also required to disclose their use of AI at work to the client.

The use of AI in automated drafting appears to align with a majority of the OECD principles. However, 'accountability'[342] may pose challenges. It states that AI actors must be 'accountable for the proper functioning of AI systems.'[343] AI systems are complex, which comes with issues regarding responsibility distribution. As mentioned above, there remain concerns regarding liability. There are multiple stakeholders in AI systems, including developers, data scientists and law firms. The determination of liability remains unresolved. More extensive legislation is required.

Section 2 provides guidance for the implementation of section 1 principles. It explains the importance of public investment in AI development[344] to 'spur innovation in trustworthy AI'[345] and 'respect privacy and data protection'[346]. But it also emphasises the preparation for 'labour market transformation'[347]There are concerns regarding the potential decrease in employment opportunities, specifically work for junior lawyers, after the integration of AI. How exactly can countries strike a balance between developing reliable AI while not causing unemployment is still uncertain. It may well be an empty promise made by countries to their workforce as no concrete plans are currently being made.

1.4.2.2. The EU AI Act

The first comprehensive law regulating AI is the EU AI Act.[348] The Act prohibits certain AI practices[349] and classifies AI systems according to their risk.

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[341] OECD Recommendation of the Council on Artificial Intelligence, section 1.1.
[342] Ibid., section 1.5
[343] Ibid.
[344] Ibid., section 2.1.
[345] Ibid., section 2.1(a).
[346] Ibid., section 2.1(b).
[347] Ibid., section 2.4.
[348] 'High-level summary of the AI Act', *EU Artificial Intelligence Act,* <https://artificialintelligenceact.eu/high-level-summary/ > accessed 1 July 2024
[349] EP Legislative Observatory, Artificial Intelligence Act, 2021/0106 (COD), Article 5.

Article 6 explains the classification rules for what the Act deems a 'high risk' AI system: either it is intended to be used as a safety component of a product, or the is itself a product[350]. An AI system used for the automation of routine documents does not fall within this category by virtue of Article 6(3). It performs a narrow procedural task[351] and is intended to improve a previously completed human activity.[352] But there are still numerous regulations that firms must follow. For instance, a risk management system must be established[353] , the training data must fulfil the criteria under Article 10 and there must be technical documentation drawn on before the AI system is used.[354]EU law seems to have provided a clear framework on regulating the use of AI in legal drafting. Whether EU member states would adhere to the rules is to be observed.

1.4.2.3. UNESCO Recommendation on the Ethics of Artificial Intelligence

The UNESCO Recommendation on the Ethics of Artificial Intelligence is another globalised standard of the ethics of AI, created in November 2021, and adopted by all 193 Member States.[355]

It centres around four core values (human rights and human dignity, living in an interconnected society, diversity and sustainability), embracing a human rights perspective. It closely resembles the principles of the OECD. Notably, the principle of proportionality is listed first in the ten core principles – explaining AI should only be used to achieve what is necessary, with the use of risk assessment for the prevention of harm.[356] It also lists key principles such as the right to data protection[357], respect for international law[358], accountability[359], transparency[360]and the importance of human oversight.[361]

When it comes to execution, UNESCO has suggested some feasible rules to oversee the use of AI. It has developed the Readiness Assessment Methodology (RAM) to assess whether Member States are capable of integrating the Recommendation effectively, allowing UNESCO to provide the necessary support. Furthermore, the Ethical Impact Assessment (EIA) allows for the assessment of the impacts of AI, identifies risks and provides harm prevention actions. Yet again, how well these rules can be implemented remains to be seen.

Hence, although there are some international legislations on AI, seemingly providing some guiding principles on how AI can be used in work in an ethical and unproblematic way, there are issues to be

[350] EP Legislative Observatory (n 242), Annex I and Annex IIII.
[351] Ibid., Article 6(3)(a)
[352] Ibid., Article 6(3)(b)
[353] Ibid., Article 9
[354] Ibid., Article 11
[355] UNESCO, 'Ethics of Artificial Intelligence The Recommendation', *UNESCO,* < https://www.unesco.org/en/artificial-intelligence/recommendation-ethics > accessed 1July 2024
[356] Ibid.
[357] UNESCO Recommendation on the Ethics of Artificial Intelligence, principle 3
[358] Ibid., principle 4
[359] Ibid., article 5
[360] Ibid., article 6
[361] Ibid., article 7

overcome. This includes how can these rules be carried out? What are countries' willingness to follow the rules? Who is overlooking countries' implementation of the rules?

1.4.3. Opportunities and Risks

Apart from the effectiveness of legislation on the use of AI in drafting routine legal documents, another crucial factor to be considered is how well legal professionals anticipate this new technology. A recent survey conducted by Reuters found that 82% of legal professionals agree that AI can be used for legal work. But only 54% think that it should be used for legal work.[362] Theoretically, AI seems to be a powerful tool that can assist lawyers. Realistically, some hurdles remain to be overcome before the technology can be adopted.

1.4.3.1. Pros

Before AI became prevalent in recent years, research conducted by the American Bar Association in 2014 showed that 54.7% of lawyers reported that contract drafting software was available for use at their firms. Although only 37.2% of lawyers said they regularly used the software, it had a 92% satisfaction rate.[363] Lawyers often won't draft legal documents from scratch. Instead, they rely on former documents as a template with the assistance of legal software. Not only is it a time-saving practice, but for many lawyers, especially younger professionals, writing a new document in precise language with good organisation can be difficult.[364] There is an actual demand for new and better tools to help legal professionals in routine document drafting.

Thus, a decade later, with the increasing digitalization and fast-growing AI technology, it is foreseeable for legal professionals to use AI to draft routine legal documents, similar to how they gradually used drafting software. Recently, Reuters released an AI tool called Practical Law Clause Finder that is developed for professionals, aiming to help them on 'searching, cutting, pasting, deleting, and editing contracts.'[365] With ongoing development, it seems possible to adopt AI in work, helping lawyers.

1.4.3.2. Cons

Yet, the use of AI is not without its problems, making it exceptionally difficult to be used for daily work. A crucial ethical issue is privacy and data protection for AI to be used during legal drafting.[366] Take, law firm A drafts contracts for company B using AI, this raises the question of how B's

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[362] Thomson Reuters, 'Corporate Legal Departments See Use Cases for Generative AI & ChatGPT, New Report Finds' *Thomson Reuters* (Hong Kong, 5 March 2024).
[363] American Bar Association, '2014 American Bar Association legal technology survey report : II-38' (ABA 2014).
[364] Marković & Gostoji (n 336).
[365] Thomson Reuters, 'Use Artificial Intelligence you can Trust to Enhance your Legal Drafting' (Thomson Reuters, 24 January 2024) <https://legal.thomsonreuters.com/blog/use-ai-you-can-trust-to-enhance-your-legal-drafting/> accessed 29 June 2024.
[366] Claudio Novelli, Federico Casolari, Philipp Hacker, Giorgio Spedicato & Luciano Floridi, 'Generative AI in EU Law: Liability, Privacy, Intellectual Property, and Cybersecurity' (2024) Centre for Digital Ethics <https://ssrn.com/abstract=4694565 or http://dx.doi.org/10.2139/ssrn.4694565> accessed 29 June 2024.

confidential information can be stored properly? How can B prevent unauthorised disclosure by A?[367] Privacy is a legitimate concern. For instance, Italy's data authority originally banned ChatGPT because it allegedly violated the EU General Data Protection Regulation by unlawfully collecting personal data from users.[368] ChatGPT only became accessible again after OpenAI addressed the issue and promised to make changes. [369] Therefore, similar concerns may arise if AI becomes widely used in the legal industry, how clients' sensitive information can be protected is uncertain. Law firms, chambers, as well as legal professionals might be held accountable for data leaks as mentioned in the previous session. In fact, 33% of firms view "liability for damage" as the most significant challenge in the integration of AI.[370] This very reasonably makes legal professionals reluctant to use AI at work.

In addition, there are realistic issues with adopting AI. The law is continuously changing, with new case law and legislation established across the globe every day, there is a risk that AI cannot keep up with the changes. Although some have argued that AI 'will likely be more reliable as processing technology improves, and data becomes more accessible over time,'[371] this has yet to be achieved. The reliability of AI is still insufficient for legal professionals to use it for routine work.

1.4.4. Conclusion

In conclusion, although international legislation by OCED, EU and UNESCO regulate the use of AI, the practical effects of its implementation remains unclear. The current framework is constantly evolving. The OECD principles focus on accountability, emphasising transparency to clients. Similarly, the EU Act establishes a risk management framework, categorising regulation for higher to lower-risk applications.

Regardless of these frameworks, legal professionals are reluctant to use the technology. Despite the potential for AI to become a great assistance to lawyers, the fundamental ethical concerns on transparency, data security, and responsibility remain. Not to mention other determinants such as the reliability of the technology and potentially causing unemployment by replacing people's jobs. The potential risks overweigh the mere benefit of improving efficiency. Thus, prohibiting law firms and legal professional to immediately turn to use AI to draft routine legal documents

[367] Daniel W. Linna Jr. & Wendy J. Muchman, 'Ethical Obligations to Protect Client Data when Building Artificial Intelligence Tools: Wigmore Meets AI' (2020) American Bar Association The Professional Lawyer 27. 1<https://www.americanbar.org/groups/professional_responsibility/publications/professional_lawyer/27/1/ethical-obligations-protect-client-data-when-building-artificial-intelligence-tools-wigmore-meets-ai/> accessed 29 June 2024.
[368] Adam Satariano, 'ChatGPT Is Banned in Italy Over Privacy Concerns' *New York Times* (New York, 31 March 2023).
[369] Shiona McCallum 'ChatGPT accessible again in Italy' (*BBC*, 29 April 2023) <https://www.bbc.com/news/technology-65431914> accessed 29 June 2024.
[370] Novelli et al. (n 370).
[371] Ryan Tanny Kang, 'What "Shall" and "Will" Teach Us about Contract Drafting (and Some Thoughts on AI)' (2019) 2 The Journal of Robotics, Artificial Intelligence & Law, 421.

At present, the legal industry's working culture has been hourly billing, knowledge hoarding, and keeping email running,[372] with very limited use of AI. Yet, even in its infancy, the growth of AI is a watershed moment.[373] The future of AI remains to be seen.

1.5. What data protection issues are raised by the use of AI by lawyers?
By Zofia Kaczmar and Luca Nemeth

Artificial Intelligence is one of the most current technological phenomena worldwide, with Large Language Models (LLM) such as ChatGPT and Gemini suddenly being available to the general public. One of the most interesting, and arguably important parts of AI, is the data it uses, where it is collected from and how it is processed. There are multiple issues posed by the use of AI in legal practice such as confidentiality breach, data security, privacy, bias and accountability. Big data scraping and mining used by companies like OpenAI and Alphabet to train their LLMs raises critical questions of data protection for internet users. They pose even greater questions when considering how lawyers might use AI in legal proceedings and raise further concerns over cybersecurity. This section will cover the multifaceted nature of AI, focusing on the inadvertent biases that can be caused by training data, followed by the pressing issues of transparency and explainability. Equally, the implications of data transfer between companies will be addressed. Further, individual data rights are a particularly significant issue within the sphere of AI and data protection. As such, these rights will also be explored in this section.

1.5.1. Concerns with Training Data

There are multiple definitions of AI, with each paper tending to create their own. In the current paper, generative AI (GenAI) is understood as a programme that produces responses and content through algorithms trained to predict patterns. These responses are trained on extensive and comprehensive data sets, ranging from YouTube videos to academic journals.[374] In layman's terms, it is similar to a child being taught to walk, talk and behave by their guardians, which also helps them learn how to react and adapt to different situations. Issues arise from what IT experts call the data shift. Similar to medicine, LLMs are first programmed and tested on a set of data in a controlled and supervised environment. Yet, the real world is not a controlled and supervised environment. Upon passing a certain threshold, GenAI is released into the world with a much larger dataset and room for performance variation.[375]

Google's DeepMind Programme is currently focusing on the development of a safe AI and possible its implementations.[376] The scientists involved in the project have been addressing issues in differences of

[372] Anja Oskamp & Marc Lauritsen, 'AI in Law Practice? So Far, Not Much' (2002) 10 Artificial Intelligence and Law, 227-236.
[373] Thomson Reuters, 'ChatGPT & Generative AI in Law Firms: New Report Shows Opportunities Abound' *Thomson Reuters* (Hong Kong, 19 April 2023).
[374] Cole Stryker and Eda Kavlakoglu 'What Is Artificial Intelligence (AI)?' (*IBM*, 16 August 2024) <https://www.ibm.com/topics/artificial-intelligence> accessed 20 July 2024.
[375] Will Douglas Heaven, 'The Way We Train AI Is Fundamentally Flawed' (*MIT Technology Review,* 18 November 2020) <https://www.technologyreview.com/2020/11/18/1012234/training-machine-learning-broken-real-world-heath-nlp-computer-vision/> accessed 13 July 2024.
[376] Ibid.

datasets, and have argued that as of right now the bar is extremely low for what GenAI has to pass before its release.[377] An issue with the data shift is also seen in a recent Cornell University report, which addresses the difference in performance of LLMs in a controlled versus a free-form environment.[378] As a result of the rapid data processing of LLMs, coupled with access to human biases encoded in datasets fed into them during the training process, AI can perpetuate discrimination.[379] These datasets range from horrendous ideologies, including pre-scraped sexism and racism, to fairy tale stories written centuries ago. Suppose the datasets used to train GenAI can answer a limited portion of possible outcomes compared to what it will have to handle upon release. In that case, language models cannot provide sufficient support to lawyers unless one rolls out that addresses these moral and technological gaps.

1.5.2. Biases

All humans have biases which can be conscious and unconscious. Every individual has pre-set ideas and notions that drive our daily lives.[380] In the case of AI, one might think that such a programme cannot have biases since it did not have an upbringing, experiences and a background that could mould its biases.[381] Just because ChatGPT is a series of 0s and 1s, does not mean it cannot provide discriminatory results. If the data contains encoded human biases, the programme learns from it and adopts similar implicit and explicit bias. Since AI learns and trains from data sets fed to it, if the datasets contain biases, AI will produce biassed answers. As an example, the recent report from Cornell University found that LLMs have been developing specific racist traits, such as against speakers of African American Vernacular English.[382]

Let us consider this scenario: a company uses AI to screen applications and save time sifting through CVs. If companies then place additional requirements upon applications, such as higher education or no criminal background, AI will learn to associate these traits as negative and readjust its future responses accordingly.[383] There has been previous research as to how ChatGPT and Gemini can have undisguised racism but covert bias is a recent field of study.[384] With such automated biases, and AI being available globally, usage of such tools to select candidates can lead to enforcing stereotypes already existing in communities, thereby creating a vicious cycle. It is especially important to consider this in the face of a rise in the use of criminal risk assessments algorithms. These tools will screen the defendant's profile and give them a score estimating the likelihood of reoffending.

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[377] V. Hofmann et al.,'Dialect Prejudice Predicts AI Decisions about People's Character, Employability, and Criminality' (*arXiv*, 1 March 2024) <http://arxiv.org/abs/2403.00742> accessed 13 July 2024.
[378] Ibid.
[379] Ibid.
[380] Pronin, E. (2007) 'Perception and misperception of bias in human judgment', *Trends In Cognitive Sciences* 11(1) 37–43 <https://www.cell.com/ajhg/abstract/S1364-6613(06)00299-3 > accessed 19 July 2024.
[381] Ibid.
[382] Ibid.
[383] Ibid.
[384] Ibid.

In the legal world, the issue is that LLMs learn from statistical patterns, which is not the same as legal causation. This also connects to multiple other papers in this ELSA report, as it is a popular idea to see if AI could take the place of the judge in the courtroom. The reality is that judges are not free of bias, and neither is AI. Yet due to the black box issue surrounding training of AI, we are far from using AI in the courtroom.[385] In the absence of due process mechanisms such as contextual knowledge, prior notification and consent, the collection and processing of case information by AI may create greater risk of infringement of citizen privacy.[386] Using AI in legal practice requires addressing questions of the programmers ability to control and understand the results produced by AI.[387]

1.5.3. Issues of Transparency

Most AI codes are unavailable to the public. Machine learning comprises algorithms, datasets and a model. Any and every of these internal workings can be made invisible to the user, such as ChatGPT making it impossible to examine the system's code or the logic predating the output. This makes it burdensome to implement AI on both state and private law firm levels.[388] A cornerstone of the EU AI Act is the explainability of LLMs output, which enables effective oversight of AI. In general, one trusts what they know and can explain, but due to the complexity of AI programmes this is not quite as easy as one would hope so.[389] A question of conflict of interest also arises if a law firm uses client's data to build up a tool that helps another client in another case. As such, there is a need for robust guidelines to inform clients about such use, any possible ramifications and acquire informed consent. Both lawyers and clients in the legal system must be fully informed on the use of AI in legal practice. Transparency is crucial for lawyers, and unless they can explain how AI output was generated, transparency is in question. There is a need to provide lawyers with the necessary tools and skill to understand the background of AI to ensure transparency.

1.5.4. Individual Data Rights

Data security laws (GDPR) deal with the protection of digital assets, which is an increasingly important area of risk for the legal profession.[390] The biggest concern when it comes to data and AI is the question of consent to data processing, transfer of data and handling of data. Integrating AI into legal

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[385] Karen Hao, 'AI Is Sending People to Jail—and Getting It Wrong' (*MIT Technology Review*, 21 January 2019) <https://www.technologyreview.com/2019/01/21/137783/algorithms-criminal-justice-ai/ > accessed 19 July 2024

[386] Wang W, 'An Analysis of the Feasibility of Artificial Intelligence to Replace Lawyers' (2023) *Advances in Politics and Economics* 6(2) 161.

[387] Ibid.

[388] Wachter, Sandra, Mittelstadt, Brent and Kane, Melissa (2020) 'What's Inside the Black Box? AI Challenges for Lawyers and Researchers', Science Direct <https://www.researchgate.net/publication/332612588_What's_Inside_the_Black_Box_AI_Challenges_for_Lawyers_and_Researchers> accessed 19 July 2024.

[389] Shea Coulson, 'Explainability, Misrepresentation, and the Commercialization of Artificial Intelligence' (DLA Piper, 18 March 2024) <https://www.dlapiper.com/en-ca/insights/publications/2024/03/explainability-misrepresentation-and-the-commercialization-of-artificial-intelligence> accessed 19 July 2024.

[390] Anurag Bana and David Hertzberg, 'Data Security and the Legal Profession: Risks, Unique Challenges and Practical Considerations' (2015) 16(3) *Business Law International* 247 <https://www.ibanet.org/MediaHandler?id=C7F100DC-04F5-46ED-84B7-649C19E30B5E> accessed 19 July 2024.

practice requires answering questions about privacy, confidentiality and compliance with data protection laws. All around the world there are initiatives as to how data should be handled in specific areas or countries, such as the GDPR in the EU.[391] There have been numerous scandals involving AI datasets, but one of the best examples is the Google Project Nightingale. Google wanted to enter the financially beneficial healthcare system in the US and store the healthcare data of over 50 million patients connected to Ascension, one of the largest healthcare providers.[392] Yet, neither patients nor doctors were aware of the storage of their data by Google, nor did they consent. The final nail in the coffin was the fact that the data transferred was not anonymized.[393] Due to these factors, Google employees were able to access patient data.[394] Ensuring proper data protection and preventing cybercrimes is crucial to maintaining confidentiality and protection of the individual's data.[395] Without proper regulations and supervision, risk of infringement of data protection is high.[396] AI tools must ensure the protection of client data and maintain strict confidentiality.

Although Project Nightingale technically did not break any laws, it did jump-start a discussion about data protection and handling.[397] The scandal was soon followed by other cases such as Clearview AI, which is a facial recognition developer company, that wanted to create a more current facial recognition software for law enforcement.[398] To train their model, they scraped social media for pictures and names of individuals.[399] Yet Clearview AI was confident that even if they got caught, the chances of them having to delete the data was relatively low.[400] Clearview AI decided to run the risk of being caught, assuming it is better to ask for forgiveness than to ask for permission. Since the incident there has been international uproar against the tech giant, which has been continuously fined for breaking data protection laws of different regions. Clearview AI is not in the clear yet as most countries do not agree with their methods, but it is for the future to see which side is stronger, the protecting of the data or sacrificing personal details such as faces in the name of higher chance of catching criminals.[401]

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[391] Intersoft Consulting, 'General Data Protection Regulation (GDPR) – Legal Text' < https://gdpr-info.eu/> accessed 19 July 2024
[392] Schneble C.O., Elger B.S. and Shaw D.M. 'Google's Project Nightingale Highlights the Necessity of Data Science Ethics Review' (2020) *EMBO Molecular Medicine* 12(3) 12053.
[393] Ibid.
[394] Ibid.
[395]Pietropaoli I, Anastasiadou I, Gauci JP and MacAlpine H, 'Use of Artificial Intelligence in Legal Practice' (*British Institute of International and Comparative Law*, 2023)
<https://www.biicl.org/documents/170_use_of_artificial_intelligence_in_legal_practice_final.pdf > accessed 19 July 2024
[396] Hao (n 385).
[397] Ibid.
[398] Alex Hern, 'TechScape: Clearview AI Was Fined £7.5m for Brazenly Harvesting Your Data – Does It Care?' (The Guardian, 25 May 2022)
<https://www.theguardian.com/technology/2022/may/25/techscape-clearview-ai-facial-recognition-fine> accessed 19 July 2024
[399] Ibid.
[400] Ibid.
[401] Robert Hart, 'Clearview AI—Controversial Facial Recognition Firm—Fined $33 Million For "Illegal Database"' (Forbes, 3 September 2024)
<https://www.forbes.com/sites/roberthart/2024/09/03/clearview-ai-controversial-facial-recognition-firm-fined-33-million-for-illegal-database/> accessed 4 September 2024.

If data infringement does occur, there are questions of accountability. This has been a prominent problem in GenAI generally and is especially difficult in the realm of legal practice. There are simply too many third parties to address the question of accountability of AI. To what extent should lawyers be liable when they use AI solutions to address client needs and an error occurs? Or should the developer be liable? Or the company producing the model? AI systems could generate legal interpretations that significantly deviate from established legal norms, leading to serious consequences through incorrect advice or legal action. The quality of these responses will largely depend on the training data. The black box automated nature of AI makes it difficult to know the processes and methods of its decision making. Lawyers express hesitancy around letting AI answer client questions, but they are comfortable allowing it to implement automation-based tasks such as contract drafting and legal research.[402]

These cases highlight the issues of data protection and serve as a cautious warning. While there are existing safeguards (GDPR), there is a need for global cooperation and regulation to protect the individual's data. Many of the provisions within the GDPR highlight challenges at the intersection of data protection and use of AI in legal practice such as purpose limitation, data minimisation, the treatment of sensitive data, the limitation on automated decisions and the deployment of AI, which entails the collection and use of vast quantities of personal data.[403] Without global laws companies like Meta, who can simply withdraw launches of AI which violate GDPR.[404] Law firms are especially vulnerable to cyberattacks due to a lack of robust guidelines and in-house expertise.[405] With 85% of Top 100 firms extremely or somewhat concerned about cybersecurity and 71% firms considering the speed of technological changes as a risk, lawyers must continue to educate themselves while advocating for safeguards to protect individuals as well as allow technology to develop.[406]

1.5.5. Conclusion

The topic of dangers of the use of AI by lawyers when it comes to data protection is quite large, and as a result, the authors made the conscious choice of aiming to show all sides of the problem, not only as a lawyer what can affect us, but also to paint a broader picture when it comes to the topic. There is a need for future development of safeguards and protection of individuals, but it is also a topic on which humanity as a whole has to keep their fingers on its pulse as it is quickly developing. While it cannot be evaded, it can be tamed by advocacy and continuous education.

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[402] Sartor G, *The Impact of the General Data Protection Regulation (GDPR) on Artificial Intelligence* (European Parliamentary Research Service 2020).
[403] Ibid.
[404] Dan Milmo, 'Meta Pulls Plug on Release of Advanced AI Model in EU' (The Guardian, 18 July 2024) <https://www.theguardian.com/technology/article/2024/jul/18/meta-release-advanced-ai-multimodal-llama-model-eu-facebook-owne> accessed 19 July 2024
[405] Bana A. and Hertzberg D. 'Data Security and the Legal Profession: Risks, Unique Challenges and Practical Considerations' (2015) *Business Law International* 16(3) 247-264.
[406] PricewaterhouseCoopers, *Annual Law Firms' Survey 2023 - Bold Steps to Sustainable Transformation* (2023) <https://www.pwc.co.uk/industries/legal-professional-business-support-services/law-firms-survey.html> accessed 5 September 2024

1.6. To what extent can AI provide automated legal advice to clients?

By Alexandra Shuck and Amelia Zochowska

As numerous professions anticipate the day when Artificial Intelligence (AI), will take over a variety of positions, the legal sector should view AI as something to be embraced rather than something be weary of [407]. The addition of AI should be regarded as complementary to legal practitioners and services, as it can be used to support lawyers in providing legal advice. The major concern, however, is what are the limitations to AI providing legal advice to clients solely or lawyers relying on the help of AI? What does liability look like if a lawyer relies on AI and it is incorrect? [408] Though the implications seem off-putting, positive impacts on efficiency in the legal profession have been widely suggested, favourably indicating technology with the use of AI can be deployed to provide legal advice to clients or work as a support to lawyers [409].

1.6.1. Harnessing AI for Enhanced Legal Efficiency

AI's unique capacity to process large amounts of data makes it suitable for data exploration and research that can be utilised by clients and lawyers alike. Its ability to correlate and cross-reference multiple variables while making accurate memory recalls proves to be useful in collecting and retrieving data for lawyers [410]. Notwithstanding data collection, analysis and collation strengthened by AI, the inherent property of technological processing allows for analyses and case [411] predictions which are more accurate and precise than humans. With advancements of technology, lawyers can considerably reduce routine work and improve efficiency[412] by having AI assist them in low-level data collection and retrieval, document and brief generation, and predictive analytics[413][414].

Lawyers are required to uphold a high level of competency that is regulated in each jurisdiction individually [415]. Generally, legal knowledge, skill, thoroughness, and preparation are emphasised

[407] Pawel Marcin Nowotko, 'AI in Judicial Application of Law and the Right to a Court' (2021) 192 Procedia Computer Science 2220, 2228.
[408] Mata v. Acianca, Inc (2023) 22-CV-1461 (PKC)
[409] Marc Lauristen, 'Toward a Phenomenology of Machine-Assisted Legal Work' (2018) 1 J. Robotics Artificial Intelligence & L. 67, 78-79.
[410] Ni Xu and Kung-Jeng Wang, 'Adopting Robot Lawyer? The Extended Artificial Intelligence Robot Lawyer Technology Accepted Model for Legal Industry by an Exploratory Study' (2021) Journal of Management & Organisation 27, 867, 870 <https://www.cambridge.org/core/journals/journal-of-management-and-organization/article/abs/adopting-robot-lawyer-the-extending-artificial-intelligence-robot-lawyer-technology-acceptance-model-for-legal-industry-by-an-exploratory-study/DA4AFD28E477B20CC0807ACEB6A6A98F#access-block> accessed 31 October 2024.
[411] Ibid., 871; Kashif Javed and Jianxin Li, 'Artificial Intelligence in Judicial Adjudication: Semantic Biasness Classification and Identification in Legal Judgement (SBCILJ)' (2024) 10(9) *Heliyon* 10, 1.
[412] Anthony E Davis, 'The Future of Law Firms (and Lawyers) in the Age of Artificial Intelligence' (2020) 16(1) *Revista de Direito e Tecnologia* 1.
[413] Ibid., 879.
[414] John O. McGinnis and Russell G. Pearce, 'The Great Disruption: How Machine Intelligence Will Transform the Role of Lawyers in the Delivery of Legal Services" (2014) Fordham Law review 82(6) 3041, 3065/3043 <https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=5007&context=flr> accessed 31 October 2024.
[415] 'The Future of Law Firms (and Lawyers) in the Age of Artificial Intelligence' (See also) American Bar Association, Rule 1.1 of Model Rules of Professional Conduct <https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_1_competence/> accessed 31 October 2024; Australian Solicitor Conduct Rules 2012, Rule 37

measures that are obliged of lawyers to follow [416]. Confidentiality is an example of a duty that has made the legal industry weary to vet new tools into professional services, including AI. The proven efficiency of AI will require that lawyers employ IT-based systems with the use of AI to fulfil obliged responsibilities and ensure they meet standards of reasonable competence and due diligence in representation [417].

1.6.2. Balancing Technological Advancements with Human Expertise

Academics and practitioners are split on whether AI can wholly replace human expertise in law. Considering the fast paced development of AI, lawyers may be obligated to utilise AI in order to comply with increasing industry standards. Scholars argue it is only a matter of time until technology outperforms human lawyers, with the latter becoming redundant and obsolete [418]. If AI provides empirical and objective answers, it may be unethical for law firms to employ conjecture or hunches in delivering legal services to clients, thus requiring AI use [419], though many suggest this to be an exaggeration. Despite the constant development of AI, it will never be able to replicate certain human skills, or the 'human touch[420]' and discretion which are essential to the profession.

1.6.3. Irreplaceable Nature of Human Interaction

For example, considering paths forward in a matter that suits clientele best on a personal level instead of solely maximising gains. The limitations of AI in complex situations and the irreplaceable nature of human interaction show AI is a better support to lawyers than it is to provide legal advice on its own. It may be a matter of time before the legal profession will need to revisit this concern if General Artificial Intelligence becomes available – where AI is able to comprehend judgement, empathy, creativity and adaptability. The question remains whether AI is capable of replacing human characteristics essential to the legal profession. Adequate training will bring AI as it is quite close; however, nuance and experience is a human quality which is difficult to replicate, especially automated systems. It is hard to 'code' human traits like common sense, nuance, or reasoning, making a traditional conveyance of legal advice more advantageous presently. As aforementioned, if General Artificial Intelligence is successfully adapted, it may open a Pandora's Box to the possibility of AI 'feeling' as a

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<https://www.qls.com.au/Guides/Australian-Solicitors-Conduct-Rules/Law-practice-management/Supervision-of-legal-services> accessed 31 October 2024; American Bar Association, Rule 1.4 of Model Rules of Professional Conduct <https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_4_communications/ > accessed 31 October 2024; Australian Solicitor Conduct Rules 2012, Rule 7 <https://www.qls.com.au/getattachment/f52dcbc2-8641-4cc0-b43f-55d865ac3f04/qls-australian-solicitors-conduct-rules.pdf > accessed 31 October 2024; Ibid., 2228.

[416] Edward J. Walters 'The Model Rules of Autonomous Conduct: Ethical Responsibilities of Lawyers and Artificial Intelligence.' (2019) Social Science Research Network pg. 1037, 1075. <https://www.semanticscholar.org/paper/The-Model-Rules-of-Autonomous-Conduct%3A-Ethical-of-Walters/bd512f6476464833bfb27380ca9afddbf2553a94 > accessed 31 October 2024.

[417] Ibid., 1079, 2228.

[418] Walters (n 461) 78-79.

[419] Ibid., 1091.

[420] Phoebe Liu, Josephine Liu, Joseph Liu and Emily X Ding, 'Efficient Court Justice Using Auto-Judgement with Artificial Intelligence' (2024) 8(1) *Journal of Artificial Intelligence and Law* 1.

human might, including judgement, empathy, creativity and adaptability for the future of the legal profession.

1.6.4. Limitation in Complex Situations and the Irreplaceable Nature of Human Interaction

1.6.4.1 Cognitive Range of AI

Despite its memory capacity and machine learning, AI remains to have a limited cognitive range. Computational patterns and logic are fixed, resulting in incompetence where technical expertise is called for [421]. Negotiation is a crucial skill in the profession, fostered by long-term professional training and human experience, which AI is unable to reproduce [422]. Various rhetorical techniques and manipulation tactics are employed during negotiation, where AI may lack in as it is today due to being unable to contextualise and comprehend ethos, pathos and logos in negotiation strategies.

1.6.4.2 Human Emotions and AI

Legal disputes often than not are composed of controversies in which emotional involvement is essential to cater to appropriate legal advice. The cornerstone of law is ethics and morality based on human ideology and emotional intelligence, of which AI has none. Human lawyers feel empathy and understand the difficulties, anxieties, and expectations of clients, enabling them to think from the perspective of the clientele. The intuitive response to human emotions is too complex for AI to understand as AI is today [423]. Communication is imperative when dealing with legal matters [424], though it is beyond AI capability.

1.6.4.3. AI Legal Strengths and Weaknesses

The premise of AI is to use previous datasets to find patterns, and repeat them in applicable situations. This effectively removes creativity or innovative thinking implemented in the legal advice generated artificially, which may be important as new problems arise or when a particular circumstance calls for a new approach. The human touch, such as emotions, intuition, skill and creativity, are integral to the legal profession, without which it would not be able to function properly. To begin to build trust with AI and the legal profession, humans must be involved as a supervisory role when working with AI. AI cannot provide automated legal advice without human oversight or monitoring as technology has not come far enough, an example being general artificial intelligence that can function with judgement, empathy, creativity and adaptability, to rely on solely AI legal advice alone. Though humans are not as resilient as technology, the human touch is needed to guide clientele effectively.

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[421] Liu et al. (n 420) 869.
[422] Ibid., 873.
[423] Ibid., 872.
[424] American Bar Association, Rule 1.4 of Model Rules of Professional Conduct.

1.6.5. Confidentiality, Privilege and Infringement of Privacy

1.6.5.1. Lawyers and AI

Lawyers deal with privileged information and delegating this responsibility onto AI may infringe on the privacy of clients. While data protection laws are strongly enforced in the EU by the General Data Protection Regulation ("GDPR") [425], the broad definition of personal data [426] will enable AI to process it [427]. However, it does not adequately cover the implications of AI on privacy because it is a technology neutral regulation [428]. In contrast, the EU AI Act [429] does not create any rights for individuals, which sets it apart from the prodigious GDPR. The recently ratified EU AI Act and the GDPR are designed to work hand-in-glove, with the latter 'filing the gap' in terms of individual rights and prior adjusting to allow the exponential development of technology.

1.6.5.2 Attorney-Client Privilege and AI's Interference

A lawyer and a client have a special and unique relationship of trust called privilege. Privilege is a concept tied to data protection requiring all communication be related to the performance of a lawyer's professional duties and that all information is stored confidentially. AI tools pose new considerations of how confidential information is analysed, stored, destroyed, and transmitted[430]. Lawyers deal with confidential information compromised on two different levels if AI is utilised to provide advice. First, it could be interpreted that forwarding information to AI breaks privilege. This could be prevented by the client expressing consent to utilise information to help the clientele. Since AI could be interpreted as a tool to process sensitive information as opposed to an entity which information is shared to. Although recognising automated legal advice as privileged would expand the scope of privilege beyond traditional human lawyers which could lead to a broader interpretation of the definition [431]. This has the potential to be detrimental to the safety of clients' data and trust in the profession as a whole.

1.6.5.3 AI Breaking Attorney-Client Privilege

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[425] GDPR (n 23)
[426] Ibid., Article 4.1.
[427] James Clark, Muhammed Demircan and Kalyna Kettas, 'Europe: The EU AI Act's Relationship with Data Protection Law: Key Takeaways' (2024) Privacy Matter: DLA Piper's Global Privacy and Data Protection Resource <https://privacymatters.dlapiper.com/2024/04/europe-the-eu-ai-acts-relationship-with-data-protection-law-key-takeaways/ >accessed 31 October 2024.
[428] Article 22 GDPR serves as a form of indirect control over the use of AI systems, on the basis that AI systems are frequently used to take automated decisions that impact individuals.
[429] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) [2024] OJ L 2024/1689.
[430] Ibid., 1082.
[431] M. Stockdale & R. Mitchell, 'Legal Advice Privilege and Artificial Legal Intelligence: Can Robots Give Privileged Legal Advice?' (2019) The International Journal of Evidence & Proof 23(4) 422, 431.

A second problem arises once the information is shared to AI because privilege pertains to lawyers only. AI is free to share the information on its own volition, which puts clients at risk. In this scenario, the distinction between advice generated by a human lawyer versus that produced by AI becomes crucial, as the latter may not be protected under the same privilege [432]. If AI is capable of communicating the privileged information further, or using it in any way, the argument of AI as a tool is no longer applicable since the machine functions would clearly overstep that of an aid [433]. This hypothetical analysis provides another argument in favour of traditional means of providing legal advice. Mitigating measures have been considered in the recent EU AI Act. Article 2(7) [434] explicitly highlights the applicability of existing EU law on privacy and data protection. Recital 69 [435] reinforces this by guaranteeing the right to privacy and protection of personal data throughout the entire life-cycle of the AI system [436].

1.6.4. Encrypted Bias and Hallucinations

1.6.4.1. Hallucinations of AI From Judgements

AI hallucinations are misleading or incorrect statements generated by AI. Such occurrences arise due to insufficient or non-objective data, or inefficient and unstructured algorithms which lead to erroneous assumptions made by the AI model. If the AI model encounters a prompt that is poorly or not at all represented in the training data, it has to extrapolate and speculate to come up with an answer.
This process can lead to implicit discrimination. Bias serves as an example here, as it often arises when AI replicates what is provided in the training data, which are themselves influenced by human decision-making and may harbour discriminatory tendencies [437].

1.6.4.2. The Outcome of AI Legal Advice

AI can generate legal advice within seconds, however it does not always provide the thought process or computer analysis behind it, like what data it relied on, leaving sources indistinguishable. This phenomenon is referred to as a "black box", where these systems become opaque due to the sheer sophistication of the system [438]. The ability to explain how it reached the conclusion is crucial for lawyers to exercise their duties of supervision [439]. The consequences of this is explored in the next section.

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[432] Stockdale and Mitchel (n 131) 428.
[433] Liu (n 420).
[434] EU AI Act (429) Art. 2.
[435] Ibid., Recital 69 <https://gdpr-info.eu/recitals/no-69/#:~:text=Where%20personal%20data%20might%20lawfully,party%2C%20a%20data%20subject%20should%2C> accessed 31 October 2024.
[436] Laura Lazaro Cabrera, 'EU AI Act Brief – Pt. 2, Privacy & Surveillance' (2024) Center for Democracy and Technology <https://cdt.org/insights/eu-ai-act-brief-pt-2-privacy-surveillance/#:~:text='The%20Act%20not%20only%20explicitly,AI%20system%20(Recital%2069)> accessed 24 October 2024.
[437] Liu (n 420); *(See also)* Javed and Li (n 411).
[438] Stockdale and Mitchel (n 431) 434-435.
[439] Ibid., 1091.

1.6.5. Liability and the Unauthorised Practice of Law by AI

1.6.5.1. Attorney's Perspective Reliance on AI

Eventually, the incorporation of AI may resort to approval by a lawyer of advice generated by AI in practice. These may have high rates of accuracy but will not prevent trained lawyers from occasionally disagreeing with the AI's proposition, therefore advising their client to not follow it. This may create new ethical conflicts including malpractice insurance issues [440]. In turn, this may incentivise lawyers to advise in accord with AI systems, creating over-reliance and lack of scrutiny which may manifest in negligence liability for law firms [441].

1.6.5.2. Ethical Dilemma of AI and the Legal Field

Almost every jurisdiction requires an individual to have obtained relevant credentials and training to practice law; AI generating legal advice blatantly breaks these provisions. AI, although specifically trained [442], would not have completed qualifications and would be unfamiliar with ethics of the profession. In theory, this would constitute unauthorised practice of law ("UPL"), especially when provided directly to a consumer [443]. As technology continues to improve and becomes more competent, it is more likely to encroach into what would traditionally be considered legal practice. However, this would depend on how AI is categorised, whether it is considered a sentient entity or a mere tool aiding practitioners. Moreover, it is virtually impossible to impose repercussions on AI. Traditional means of punishment are ineffective to the nature of an AI, making ascribing liability challenging. Paradoxically, if used as a tool, a licensed lawyer using AI technology could be found guilty of negligence or malpractice by proxy. This area of law is currently unexplored and the parameters of AI practising lawyers are not well defined.

1.6.5.3. Faux Reliability of AI Advice

The possibility of AI participating in UPL was addressed in *Unauthorised Practice of Law Comm. v. Parsons Tech* [444], concerning the company's library of computerised, fillable legal forms. The court determined that the program did constitute UPL. In coming to this conclusion it was mentioned that the software, "…created an air of reliability about the documents, which increases the likelihood that an individual user will be misled into relying on them." However subsequent Texas legislature amended its UPL statute so as to not include the above [445].

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[440] Stockdale and Mitchel (n 431) 1084-1085.
[441] Ibid., 1085.
[442] Javed and Li (n 411).
[443] Ibid., 1085
[444] Unauthorised Practice of Law Comm. v. Parsons Tech., No. Civ.A. 3:97CV-2859H, 1999 WL 47235, at *1 (N.D. Tex. Jan. 22 1999).
[445] Ibid., 1090.

1.6.5.4. AI and Attorney Supervision

The extent to which AI can provide legal advice is heavily influenced by the level of human supervision involved. If a human lawyer supervises the AI and actively engages with its outputs, the advice may be more likely to be considered valid legal advice. Conversely, if the AI operates with minimal or nominal supervision, the advice may not meet the standards required for legal advice privilege, as the lawyer may not be exercising their professional judgement [446].

1.6.5.5. AI Legal Advice and Where it is Going

The current system places the accreditation of those who can give legal advice above the potential improvements in the quality of legal services by AI [447]. As these technologies improve, the focus may shift to improving the quality of services to stay competitive. In the quest of balancing advancement and protocol, the future will witness further strain before any clear progress is made.

1.6.6. Conclusion

Considering the accelerated force at which AI is growing, it is inevitable that eventually, as machine intelligence becomes more capable, it will be able to perform more than the routine tasks of lawyers. While AI certainly has the potential to reshape the traditional role of a lawyer, it is not in the position to completely replace human lawyers at present. AI, as it is today, will work as a magnificent auxiliary support to lawyers providing legal advice, but it must be explored further how liability and professional negligence may look if AI advice is utilised incorrectly.

1.7. How can AI be used for administrative purposes to increase firm efficiency?

By Avril O'Mahony and Aibhe Tierney

"Advancements in Artificial Intelligence (AI) technologies have led to changes in the way we carry out personal and work activities. The legal profession is no exception to this transformation"[448]. There are numerous functions of AI that can be used to increase firm efficiency and almost as many benefits. Such AI types include machine learning,[449] data processing, predictive analysis[450] and generative AI.[451] The direct application of theses technologies for the legal profession can be seen in environmental

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[446] Unauthorised Practice of Law Comm. (n 444) 434 – 438.
[447] Ibid., 1090.
[448] I. Pietropaoli , 'Use of Artificial Intelligence in Legal Practice ' (*British Institute of International and Comparative Law* , 17 October 2023) <https://www.biicl.org/documents/170_use_of_artificial_intelligence_in_legal_practice_final.pdf > accessed 20 June 2024.
[449] J. Mark Phillips, 'The Infinite Legal Acumen of an Artificial Mind: How Machine Learning Can Permanently Capture Legal Expertise and Optimize the Law Firm Pyramid' (*Pepperdine Digital Commons*2018) <https://digitalcommons.pepperdine.edu/jbel/vol11/iss2/3/ > accessed 02 July 2024.
[450] Brian R Burge, 'AI and Administrative Work: Enhancing Productivity' (*Office Dynamics International*, 21 December 2023) <https://www.facebook.com/brianrburge> accessed 14 July 2024.
[451] 'AI in Litigation: Tools That Enhance Predictive Analysis' (*Getlegalbuddies.com,* 20 November 2023) <https://getlegalbuddies.com/blog/ai-in-litigation-tools-that-enhance-predictive-analysis/ > accessed 12 July 2024.

adjustments and energy conservation,[452] training and support for workers,[453] workflow streamlining,[454] process automation[455] and data review.[456] The benefits of implementing these technologies in legal firms include higher rates of efficiency,[457] accuracy,[458] client satisfaction,[459] cost savings[460] and mitigation of human error and bias.[461] With these benefitscomes some limitations to their application, including data protection, work dislodging and ethical concerns.[462]
While these limitations remain very real, with the goal of streamlining administrative tasks in legal firms, the benefits seem to outweigh the disadvantages.

1.7.1. Types of Relevant AI Machine Learning

Examples of areas in which machine learning (ML) can be utilised by legal administrative teams are document review, document prep and optimisation of resource allocation[463]. "Dating back as early as the 1990s, natural language-enabled algorithms have allowed attorneys to sift through massive amounts of documents for keywords and concepts", these supervised learning systems save immeasurable amounts of that had this work been done manually[464]. " ML can assist in making strategic decisions in terms of resource allocation, client management and other administrative tasks in order to enhance overall profitability and efficiency[465]. ML systems have the capability to preserve valuable knowledge within the firm and ensure that any expertise or insight can be retained and leveraged even when the contributing individuals have left the firm creating "a platform that continuously learns from their masterstrokes and follies alike, and ultimately produces a reservoir of institutionalized expertise"[466]. The ability to standardise and streamline administrative processes and ensure consistency to reduce variability so that best practices can be consistently applied across the firm leads to a significantly more

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[452] Yoko E Fukumura et al., 'Worker Perspectives on Incorporating Artificial Intelligence into Office Workspaces: Implications for the Future of Office Work' (2020) 18(4) Int J Environ Res Public Health 1690 <https://doi.org/10.3390/ijerph18041690> accessed 9 July 2024.
[453] Ibid.
[454] J Armour and M Sako, 'AI-Enabled Business Models in Legal Services: From Traditional Law Firms to Next-Generation Law Companies?' [2019] Social Science Research Network 13 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3418810> accessed 21 June 2024.
[455] James Warner, 'The Role of AI in Automating Routine Tasks and Workflows within Organizations' (*Customer Think*, 11 March 2024) < https://customerthink.com/the-role-of-ai-in-automating-routine-tasks-and-workflows-within-organizations/ > accessed 03 July 2024 .
[456] Power ,'Automation of RoutineLegal Tasks with AI' (*PowerPatentcom*,16 September 2023)<https://powerpatent.com/blog/automation-of-routine-legal-tasks-with-ai >accessed 09 July 2024
[457] Warner (n 455).
[458] Malgorzata Kruszynska, 'AI in the legal sector: How can legal professionals use AI & automation? '(*Spyrosoft* , 15 March 2024) <https://spyro-soft.com/blog/legal-tech/ai-in-the-legal-sector-how-can-legal-professionals-use-ai-automation#:~:text=Automation%20and%20management%20of%20legal%20documents&text=AI%20tools%20for%20legal%20document,and%20ensuring%20consistency%20across%20documents> accessed 12 July 2024.
[459] Nymiz, 'Automating Routine Legal Tasks: How AI is Freeing Up Time for Lawyers' (*Nymizcom*, 10 July 2024) <https://www.nymiz.com/automating-rotuine-legal-tasks-how-ai-is-freeing-up-time-for-lawyers/ > accessed 14 July 2024.
[460] Ibid.
[461] Kruszynska (n 458).
[462] Warner (n 455).
[463] Phillips (n 449).
[464] Ibid., 305-306.
[465] Ibid., 319.
[466] Ibid.

efficient administrative process within legal firms. If these systems are utilised effectively for administrative purposes there is a potential to gain a competitive edge by operating more efficiently, enhancing the firm's reputation and ultimately improving financial performance, client satisfaction and operational efficiency.

1.7.2. Data Processing & Predictive Analytics

AI tools for data entry and analysis can be of significant help to administrative workers in their abilities to manage large databases with speed and without sacrificing accuracy. These transformative tools once implemented will free time for other more critical tasks[467]. A notable AI tool would be IBM Watson Analytics, a smart data analysis and visualisation service which "allows users to quickly discover patterns and meanings in their data. It's designed to make advanced and predictive analytics accessible to a wide range of business users, including administrative professionals"[468]. Tools such as these enable legal firms to streamline data processing, in turn, enhancing accuracy and efficiency. AI-driven Customer Relationship Management (CRM) systems play a crucial role in client interactions and can "significantly enhance the client experience as well"[469]. The abilities of these systems go beyond simply crunching numbers, they have the capabilities to uncover invaluable insights to aid in strategic decision-making and developments in all areas of operations[470]. Another example of these systems is Lex Machina, which provides "insights from millions of legal cases to predict outcomes and opposing counsel behaviour", this can be utilised and integrated into workflows[471]. Analytics here can be helpful in projecting legal budgets based on insights from previous matters.

1.7.3. Generative AI

Generative AI (GenAI) is revolutionising law firm administration through the automation of processes and data processing abilities. Unlike predictive analytics, GenAI has the ability to create new content that mimics the data set it is working from by using "neural networks to generate brand new content that is similar to data it has been trained on"[472]. GenAI can identify "key contract clauses and potential legal risks", this is particularly helpful when dealing with lengthy contracts so that "lawyers can streamline contract analysis to pinpoint crucial clauses and detect potential risks"much more efficiently[473]. Certain GenAI programs can draft legal documents or "suggest alternative wording in a contract to ensure clarity and avoid ambiguity, flagging potentially risky clauses based on legal

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[467] Brian R Burge, 'AI and Administrative Work: Enhancing Productivity' (*Office Dynamics International*, 21 December 2023) <https://officedynamics.com/ai-and-administrative-work-enhancing-productivity-and-efficiency/> accessed 14 July 2024.
[468] Ibid.
[469] Haddad M, 'Generative AI and the Small Law Firm: Leveling the Playing Field - Thomson Reuters Institute' (*Thomson Reuters Institute,* 19 October 2023) <https://www.thomsonreuters.com/en-us/posts/legal/generative-ai-small-law-level-field/> accessed 21 June 2024.
[470] Burton L, 'How AI Is Used to Streamline Administrative Tasks in the Modern Office' (*Swipedon.com,* 13 February 2024) < https://www.swipedon.com/blog/how-ai-is-used-to-streamline-administrative-tasks-in-the-modern-office > accessed 19 July 2024.
[471] 'AI in Litigation: Tools That Enhance Predictive Analysis' (*Getlegalbuddies.com,* 20 November 2023) <https://getlegalbuddies.com/blog/ai-in-litigation-tools-that-enhance-predictive-analysis/> accessed 19 July 2024.
[472] Ibid.
[473] Ibid.

precedents"[474]. Moreover, it can be utilised to identify errors as documents can be put through these AI tools to "catch hidden and subtle inconsistencies, spot legal errors, and even identify biases based on pre-trained language models"[475]. GenAI has the potential to stay up-to-date with rules and regulations such as "changes in GDPR, CCPA, HIPPA, and the legal framework in a country" and can flag any non-compliant activities and advise accordingly saving a significant amount of time previously spent on manual document scanning as well as preventing any subsequent financial penalites[476]. Overall, the integration of generative AI in law firm administration would boost productivity, accuracy, compliance as well as efficiency.

1.7.4. Applications in Law Firm Administration

1.7.4.1. Environmental Adjustments & Energy Conservation

Machine Learning's transformative potential in optimising work environments can be seen in its capabilities to create individualised adjustments to work environments (e.g. lighting, temperature)[477]. This automation of lighting and temperature control promotes healthy work behaviours. This potential is further reaching than individual needs with the potential to create adjustments that "could benefit all workers and energy costs (e.g., automated adjustment of window coverings)" and the ability to turn off unnecessary lights and devices, contributing to overall energy efficiency[478]. There is the potential to process data, identify inefficiencies and identify opportunities for savings not only in energy consumption but also in maintenance and operational efficiency[479].
AI's capability to predict peak usage times and identify underutilised assets allows for a more strategic approach to managing resources. This ensures that office spaces and equipment are used to their full potential, reducing waste and increasing efficiency[480].
These systems have the capability to free up time and create healthier and more productive workspaces and, in the context of an administrative role within a legal firm, they can optimise work environments and enhance efficiency and productivity [481].

1.7.4.2. Training and Support for Workers

The incorporation of AI systems that can adapt and evolve based on user interactions is of benefit in training and support for workers, "this type of approach would be beneficial in the ongoing training of an AI system that must learn and change based on the user to achieve the ultimate goal of altering a

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[474] Ibid.
[475] Ibid.
[476] Ibid.
[477] Fukumura (n 452).
[478] Ibid.
[479] AI B, 'Making Your Buildings Energy-Efficient with AI' (*Brainboxai.com,* 29 November 2023) <https://brainboxai.com/en/articles/making-your-buildings-energy-efficient-with-ai> accessed 18 July 2024.
[480] Burton (n 470).
[481] EU Business School, 'How Can Artificial Intelligence Improve the Workplace?' (*Euruni.edu*, 7 June 2022) <https://www.euruni.edu/blog/how-can-artificial-intelligence-improve-the-workplace/> accessed 18 July 2024.

worker's behaviors"[482]. For AI systems to positively impact operational and administrative dynamics within a legal firm the systems must evolve alongside user interactions to enhance productivity among administrative staff[483]. Additonally, there are benefits on an organisational level to the integration of AI as it can be leveraged to enhance employee satisfaction and boost overall firm performance and efficiency, there is a strategic potential in AI to optimise administrative workflows from this perspective[484]. AI can be used to identify skill gaps within the workforce and aid in addressing them to increase efficiency, for example, by issuing a standardised test in which an AI system can analyse and recommend different courses to "further each employee's skillset in areas that they didn't perform as well in"[485]. These systems can also provide 24/7 support, for example in the form of a chatbot which has been customised with answers that frequently come up during training[486]. All of the above can save time and increase leverage and efficiency for the firm as a whole.

1.7.4.3. Workflow Streamlining

AI could aid in streamlining workflows and in doing so, enhancing efficiency within legal firm administration. The integration of AI would ensure that legal administration and operations were aligned with digital solutions and advancements in other sectors which would create a more cohesive and efficient operational ecosystem[487]. Furthermore,
through its ability to automate the sorting, filing and processing of documents, AI is transforming tasks that were traditionally manual and time-consuming into streamlined, efficient operations. By harnessing the power of AI, businesses can now automate data entry, effortlessly extract critical information from various forms and even compile comprehensive reports with ease[488]. These systems can analyse data provided on law firms' resources and provide actionable insights to aid firms in optimising resource allocation[489]. For example, email management systems that are personalised to the individual and can intuitively "prioritize messages, flag important items, and suggest replies"[490]. Moreover, AI systems can be used to coordinate schedules with tools that can find suitable meeting times as well as send invites and reminders, reducing time spent on back-and-forth communication, and providing for a much more efficient process [491].

1.7.4.4. Process Automation

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[482] Fukumura (n 452).
[483] Ibid.
[484] Ibid.
[485] Rusconi G, 'Artificial Intelligence in Training: 10 Uses & Benefits' (*Cloud Assess,* 15 April 2024) <https://cloudassess.com/blog/artificial-intelligence-in-training/#what-types-of-ai-are-being-used-in-training> accessed 18 July 2024.
[486] Ibid.
[487] Armour (n 454).
[488] Burton (n 470).
[489] Ibid.
[490] 'Discover How Automation and AI Can Transform Office Administration by Streamlining Tasks and Increasing Efficiency with New Technology' (*Linkedin.com,* 23 June 2024) <https://www.linkedin.com/advice/1/heres-how-you-can-streamline-administrative-7fage?trk=organization_guest_main-feed-card_feed-article-content> accessed 19 July 2024.
[491] Ibid.

AI may also be used to automate routine processes within the workplace, allowing employees to focus on more high level tasks.[492] Routine processes within legal firms often include tasks such as the automation and management of legal documents,[493] contract review and drafting,[494] analysing text[495]and conducting due diligence.[496] The manual creation of legal documents is time-consuming, and poses the risk of errors and inconsistencies. AI-powered solutions for legal document automation and management utilise advanced algorithms to automate tasks, such as template customisation, clause selection, and document assembly.[497]

Natural language processing (NLP),[498] can assist with the time intensive task of reviewing and drafting documents.[499] With this technology, AI can rapidly extract key information from lengthy legal documents and flag potential risks, inconsistencies and clauses. Machine learning algorithms[500] can be trained to identify sequences and trends in contractual terminology, allowing for the creation of model templates, tailored to specific client needs. By automating contract review, a corporate legal department reduced contract review times by 60%.[501] This efficiency gain allowed legal professionals to focus on strategic legal initiatives, contributing to the company's overall success.[502]

Rather than spending hours attempting to file through copious amounts of legal texts, employees can now utilise AI, to "generate concise summaries that highlight the key takeaways."[503] For example, algorithms such as Chat GPT can sift through large amounts of customer reviews, and generate insights into how customers feel about a particular product or service.[504]

Conducting due diligence requires lawyers to review copious amounts of documents. AI can be leveraged to review such documents at an exponentially faster pace.[505] Despite needing to double check the work of the algorithms, the time required is significantly reduced. Some obvious benefits to these tools include cost efficiency and time savings. AI powered law firms will spend significantly less time on manual tasks, allowing for fewer personnel and reduced operating costs.[506]

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[492] Bdo, 'Eliminate Routine Tasks with Automation and Generative AI' (*BDOcom*, 27 April 2023)<https://www.bdo.com/insights/digital/eliminate-routine-tasks-with-automation-and-generative-ai> accessed 14 July 2024.
[493] Kruszynska (n 458).
[494] Ibid.
[495] Bdo (n 492).
[496] Nymiz (n 459).
[497] Kruszynska (n 458).
[498] Warner (n 455).
[499] Power (n 456).
[500] Krishnapriya Agarwal , 'Machine Learning + Contract Review: Unlocking the 10X Legal Counsel' (*Spotadraft*, 29 November 2023) <https://www.spotdraft.com/blog/machine-learning-contract-review#:~:text=The%20ML%20model%20at%20the,%2C%20obligations%2C%20or%20termination%20clauses > accessed 16 July 2024.
[501] Power (n 456).
[502] Ibid.
[503] Bdo (n 492).
[504] Ibid.
[505] Nymiz (n 459).
[506] Ibid.

1.7.4.5. Document Review

A further application of AI in legal firms is algorithmic document review. The review of documents is a key task for lawyers, but one that can be intensely time consuming. Through the use of eDiscovery software, this review time can be reduced significantly.[507] eDiscovery software such as Relativity[508] enables legal professionals to process, review and tag a large number of electronic documents, and can identify relevant documents and extract relevant information.[509] This software can also categorise evidence, label documents and summarise text.
Not only does this significantly reduce the time and cost involved, AI systems excel at minimising human-induced errors,[510] ensuring comprehensive and unbiased legal research.[511] The heightened precision of AI tools enables them to identify minor inconsistencies, ensuring documents are "thoroughly reviewed and vetted". [512]

1.7.5. Conclusion

"This evolution is not just about efficiency; it's about reshaping how administrative work is perceived and executed in the modern - and ultra-flexible - office".[513] The result of the implementation of AI in legal administrative work leads to a dramatic reduction in manual labour hours spent on repetitive tasks. It leads to a significant decrease in the margin for human error and provides systems with the ability to constantly create new processes to streamline office operations with unprecedented precision[514] which will in turn contribute to a much more efficient administrative force for legal firms who leverage these systems effectively. However, there are limitations to the extent that these systems can be leveraged, such as the need for a large and representative set of data in order to train these models effectively.[515] Additionally, there may also be concerns raised about trust and privacy in data handling.[516] While these systems can enhance productivity and efficiency in terms of legal administration, the expertise and judgement of human workers are crucial to client trust and remain integral.[517] Ultimately, the integration of AI leads to a competitive edge for firms that leverage these technologies in synergy with administrative workers can ultimately lead to a more efficient workplace.

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[507] Everlaw, 'What is E-Discovery Software ?' (*Everlawcom*, 08 August 2022) <https://www.everlaw.com/blog/ediscovery-software/what-is-ediscovery-software/> accessed 19 July 2024.
[508] Nymiz (n 459).
[509] Ibid.
[510] Warner (n 455).
[511] Kruszynska (n 458).
[512] Nymiz (n 459).
[513] Burton (n 470).
[514] Ibid.
[515] Armour (n 454) 8.
[516] Fukumura (n 452).
[517] Haddad M, 'Generative AI and the Small Law Firm: The Value of Legal Domain Expertise - Thomson Reuters Institute' (*Thomson Reuters Institute,* 28 November 2023) <https://www.thomsonreuters.com/en-us/posts/legal/generative-ai-small-law-domain-expertise/> accessed 21 June 2024.

1.8. Who is accountable when tasks delegated to AI by lawyers go wrong?

By Aoife Moloney and Pamela Pavlovska

The integration of artificial intelligence (AI) into legal practice has revolutionized the legal profession, offering tools that increase efficiency, accuracy, and access to legal services. However, delegating tasks to AI raises complex questions about accountability when errors of unforeseen consequences arise. Determining who is responsible - lawyers, AI developers, or the AI systems themselves - when tasks go wrong is a pressing issue that legal systems worldwide must address.

In traditional legal contexts, accountability is straightforward: lawyers are directly responsible for their decisions and actions. When AI is introduced, the lines of responsibility blur. AI systems, while highly capable, operate based on pre-programmed algorithms and datasets, which may not fully capture the nuances of legal practice. Errors in AI, such as providing incorrect legal advice or misinterpreting data, can have significant consequences for clients. For instance, if an AI-powered contract review tool overlooks critical clauses, resulting in financial or legal harm, who is accountable? It is the lawyer who relied on the tool, the company that developed the AI, or both? Current legal frameworks struggle to address such questions, particularly when AI systems are marketed as autonomous or self-learning.

Accountability in AI-driven legal practice also involves ethical dimensions. Lawyers have a duty to their clients to provide competent and diligent representation. Delegating tasks to AI doesn't absolve them of this responsibility. Transparency is key; clients should be informed when AI systems are used in their cases and understand the associated risks and limitations. Moreover, lawyers must ensure that the AI tools they use are free from biases and comply with ethical standards. AI systems trained on biased datasets can inadvertently perpetuate inequalities in the justice system. The responsibility to identify and mitigate these biases ultimately lies with the lawyers who choose to use such technologies.[518]

Globally, regulatory approaches to AI accountability vary. While some jurisdictions have begun to develop frameworks for AI governance, many legal systems lack specific regulations addressing the use of AI in legal practice. This creates a gap in determining liability when AI-related errors occur. In Macedonia, the adoption of AI in legal practice is still in its early stages. Macedonian lawyers often rely on traditional practices and are cautious about integrating advanced technologies like AI. There is a pressing need for clear guidelines that address accountability for AI-driven errors, especially given the country's focus on professional accountability and maintaining public trust in the judiciary.

In contrast, Ireland and England are more advanced in incorporating AI into legal practices. England, as a global legal hub, has seen a rapid rise in the use of AI for predictive analytics, case management, and document review. The UK's legal framework emphasizes the role of human oversight, ensuring that lawyers remain responsible for AI-related decisions. Ireland, meanwhile, has started adopting AI technologies in specific areas of legal practice, with a focus on ethics and minimizing biases. However, both countries face challenges similar to Macedonia, such as addressing AI biases and ensuring

[518] Harry Surden, 'Artificial Intelligence and Law: An Overview' (2019) 35(4) Georgia State University Law Review 1304, 1335-1337.

transparency. While Macedonia can learn from the progress made in Ireland and England, it must tailor these approaches to its unique legal and societal context. A comparative study of these jurisdictions underscores the importance of a balanced framework that incorporates international best practices while respecting local legal traditions. Macedonian lawyers must navigate these challenges within the context of a legal system that values professional accountability and public trust. Establishing guidelines for AI use, including provisions for human oversight and mechanisms for addressing AI errors, is essential. Drawing from global best practices while considering the unique characteristics of the Macedonian legal system will be crucial for ensuring accountability in the face of AI-driven innovations.

Examining case studies and legal precedents can offer valuable insights into how courts worldwide approach AI accountability. For instance, disputes involving AI tools in contract analysis or predictive legal analytics have highlighted gaps in existing liability frameworks. Lessons learned from these cases can guide the development of clearer accountability standards for AI use in legal practice.[519]

We believe that, despite the advantages of artificial intelligence, human intervention remains crucial in legal practice, as lawyers bring not only legal expertise, but also moral and ethical responsibility that machines cannot replace. The delegation of tasks to AI in legal practice represents a transformative shift in the profession, but it also brings significant accountability challenges. Lawyers must balance the benefits of AI with their ethical and legal responsibilities to clients. Clear guidelines, robust ethical standards, and adaptive regulatory frameworks are essential for ensuring accountability when AI systems go wrong. As the legal profession continues to embrace AI, collaboration between legal practitioners, technologists, and policymakers becomes essential to ensure that these tools are implemented ethically, transparently, and with accountability at their core.[520]

1.9. What are the advantages of openly implementing AI in one's legal practice?

By Adithi Suryanarayana Avadhani and Patrick Brice

Implementing artificial intelligence (AI) opens the door for a more efficient and accessible legal industry, allowing firms to provide more client-focused services. Despite the repeated viewpoint that AI might lead to a robotic, job-replacing, and restrictive future, this report reveals that openly integrating AI can make the legal practice more 'human'. Additionally, while AI's value in improving the efficiency of monotonous tasks is not in doubt, it is also found that the technology has its creative advantages as well. With AI able to perform an extensive legal review to predict a case's likelihood of success, practising lawyers can use it to further boost the quality of their legal action.

This report aims to outline the two main advantages offered by the implementation of AI – (1) its efficiency-boosting effects leading to a more accessible and personalised legal system and (2) its ability

[519] Andrea Radonjanin, Andreas Lazarevska, Filip Srbinoski, 'Artificial Intelligence 2024' (*Chambers and Partners*, 28 May 2024)<https://practiceguides.chambers.com/practice-guides/artificial-intelligence-2024/north-macedonia/trends-and-developments> accessed 21 June 2024.

[520] ABA, 'ABA issues first ethics guidance on a lawyer's use of AI tools' (*ABA*, 29 July 2024) <https://www.americanbar.org/groups/science_technology/publications/aibook/> accessed 21 June 2024.

to improve the quality of legal advice through supplementing the creative operations of a practising lawyer.

1.9.1. The Automative Benefits of AI: Greater Efficiency

Artificial intelligence, due to its ability to quickly process a vast amount of data at a time, can be utilised by law firms in a way that reduces both the time and cost it takes to perform repetitive and monotonous tasks. Operations that require minimal expertise such as generating legal documents, reviewing contracts and legal research can be delegated to AI systems. E-discovery software can quickly analyse and retrieve a vast number of statutes, cases and legal articles to support a solicitor's case.[521] As such, legal research with the assistance of such software results in a more effective and accurate law review process since a manual review of the law takes significantly more time than those utilising e-discovery technology. [522] The benefit for law firms lies in AI's ability to automate the repetitive process required in tasks such as legal research. Manual reviews of the law call for lawyers to check every single document in collection, with the need to constantly make a conscious decision on the document's relevance to the case. Recently, the immense growth in the sheer size of digital legal information available has made the process of manual review less than desirable with law firms needing a more innovative alternative. [523] E-discovery tools are observed to be up to three times as fast while also improving the process' accuracy by as much as 500%. [524] With these technologies experiencing exponential development over the past few years, the time saved through the usage of these tools will only increase. [525] Therefore, as efficiency is improved across monotonous tasks, firms can dedicate fewer resources to tasks such as these. As such, more focus can be put on working closer with the client, providing a more client-centric service.

The open implementation of AI within the legal research process can also have benefits for the consumer. With the average billable hour in the UK ranging from around £300 - £400,[526] the added increase in efficiency will not only lower the costs of law practice but may provide the groundwork for more accessible legal services. Lawyers who employ e-discovery tools now can lay the groundwork for the case at a much quicker pace, reducing the number of chargeable hours for the client.[527]
There remains an ultimate drawback which limits the ability of firms to fully capitalise on the efficiency-boosting advantages of AI tools. Experts have often referred to the existence of a "trust gap"

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[521] Irene Pietropaoli, 'Use of Artificial Intelligence in Legal Practice' (British Institute of International and Comparative Law 2023) 3.
[522] Maura R. Grossman & Gordon V. Cormack, 'Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient than Exhaustive Manual Review' (2011) 17 Rich JL & Tech 1, 43.
[523] The Sedona Conference, 'The Sedona Conference Best Practices Commentary on the Use of Search and Information Retrieval Methods in E-Discovery' (2007) 8 Sedona Conference Journal 189, 199.
[524] Grossman & Cormack (n 522) 37.
[525] Taerim Lee and Hun Kim, 'A Study on Design and Implementation of E-Discovery Service Based on Cloud Computing' (2012) Journal of Information Systems and Services 68, 74.
[526] Statista, 'Fees per Chargeable Hours at Top 10 Law Firms in the United Kingdom from 2018 to 2023' (Statista, 31 January 2024) <https://www.statista.com/statistics/1446285/top-uk-law-firms-fees-per-chargeable-hour/ > accessed 24 July 2024.
[527] Pietropaoli (n 521) 3.

when it comes to implementing such tools within practice. [528] Most practitioners are cautious when implementing AI throughout their firm, either doubting the technology's accuracy or imposing "significant checks and balances." [529] What this ultimately leads to is double-checking – practitioners do not trust the results of AI to the extent in which they ultimately, to ensure accuracy, end up doing most of the work manually instead. As such, the need for firms to implement AI openly is undeniable – there needs to be a degree of trust surrounding the results AI tools may produce to achieve maximum efficiency.

1.9.2. The Generative Benefits of AI: Increased Quality

While the benefit of open implementation of artificial intelligence is evident in its ability to automate tedious tasks throughout legal practice, AI can also increase the quality of legal advice through predictive analysis and content generation. Operations such as trial strategy and client communication, involving a more 'creative' and human aspect, can still benefit heavily from the implementation of AI. Predictive analytical (PA) tools such as Lex Machina [530] and LawNotion [531] can consider multiple factors to predict the outcome of a trial. Factors such as opposing lawyers, judges, and relevant precedent are all used by PA technology in order to ensure an accurate prediction. [532]

These tools' predictions are strongly accurate - a recent study found such a tool to be 79% accurate when trying to predict the outcome of 585 European Court of Human Rights cases. [533] Through this, legal practitioners can be more effective in the planning stage of their trial strategy, making more informed decisions when it comes to their client's case. Rather than relying solely on intuition, the ability of PA software to provide empirical evidence on a client's legal position can help advise settlement negotiations or litigation tactics. [534] This is enabled with large data sets of historical case outcomes, wherein AI systems can provide predictive analytics for assessing the potential for success in different case approaches to lawyers. [535]

One of the most important advantages released from AI use in trial strategy is that it gives one the ability to generate and then review several strategic options quickly. AI can create simulations of the different possibilities on the case at hand, for example, showing a legal team paths forward that look most promising. This is mostly beneficial in complex cases, wherein variables and possible results involved are too high for human analysis.

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[528] Geoffrey D. Ivnik, 'Trust me I'm a legal AI: Can the legal profession close the 'trust gap' with Gen AI?' (Lexis Nexis, 10 July 2024) <https://www.lexisnexis.com/community/insights/legal/b/thought-leadership/posts/trust-me-i-m-a-legal-ai-can-the-legal-profession-close-the-trust-gap-with-gen-ai > accessed 24 July 2024.
[529] Pietropaoli (n 521) 4.
[530] Lex Machina <https://lexmachina.com > accessed 24 July 2024.
[531] LawNotion <https://lawnotion.co.uk> accessed 24 July 2024.
[532] James Morgan, 'Computer Says "No": An Evaluation of Predictive Analytics in the Law' (2024) 13 CRJ 6, 7.
[533] Ibid.
[534] Ibid.
[535] Harry Surden, 'Machine Learning and Law' 2014, Washington Law Review, 89(1), 87-115.

Moreover, AI's ability to read great volumes of past cases allows it to recognise subtle patterns and precedents that may apply to the current case. Such deep analysis can thus inform strategy development and therefore help the lawyer build more robust and effective arguments. Beyond trial strategy, AI is also transforming the wider space of legal advice. One of the largest applications is in automated legal research and document review. AI systems can quickly go through thousands of legal documents, case laws, and statutes and get information on a case, saving countless hours of manual research by lawyers. [536]

1.9.3. Cost Reduction and Competitive Advantage of AI

AI technologies can significantly streamline legal operations, leading to substantial cost savings. By automating routine and time-consuming tasks, law firms can reduce the number of billable hours spent on low-value work.

AI research tools can quickly sift through vast databases of case law, statutes, and legal articles, providing relevant information in a fraction of the time it would take a human researcher. For example, ROSS Intelligence, an AI legal research tool, claims to reduce research time by up to 30%. [537] AI-powered tools are able to review and analyse large volumes of documents much faster compared to human lawyers. A study by JPMorgan Chase & Co. has shown how its AI system, COIN-Contract Intelligence, could review commercial loan agreements in seconds, which used to take 360,000 hours of annual lawyers' time. [538] Moreover, AI systems can operate 24/7 without additional costs, enabling firms to provide faster services and handle larger workloads without incurring overtime expenses. This round-the-clock capability can be a significant competitive advantage, particularly for firms serving global clients across different time zones.

AI can rapidly analyse and extract key information from contracts, significantly reducing the time and cost associated with contract review and management. A report by Gartner predicts that by 2024 AI will reduce manual data entry in contracts by 50%. [539] However, these advantages are not infallible and there are significant hurdles to overcome before implementing AI openly into legal practice. One set of challenges is that of security and ethical issues. Law firms, being guardians of sensitive information pertaining to their clients, have an added responsibility to make sure their AI systems are aligned with data protection regulations and ethical standards. This may mean further investment in security and the creation of full-scale ethics regimes for AI.

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[536] Eric Talley & Drew O'Kane, 'The Measure of a MAC: A Machine-Learning Protocol for Analysing Force Majeure Clauses in M&A Agreements' (2012) Journal of Institutional and Theoretical Economics 168(1), 181-201.
[537] Michael Mills, 'Artificial Intelligence in Law: The State of Play 2016' (*Thomas Reuters*, 23 February 2016) <https://www.thomsonreuters.com/en-us/posts/legal/artificial-intelligence-in-law-the-state-of-play-2016/> accessed 24 July 2024.
[538] Hugh Son, 'JPMorgan Software Does in Seconds What Took Lawyers 360,000 Hours' (*Bloomberg*, 28 February 2017) <https://www.bloomberg.com/news/articles/2017-02-28/jpmorgan-marshals-an-army-of-developers-to-automate-high-finance> accessed 24 July 2024.
[539] Gartner, 'Gartner Predicts 50% of U.S. Healthcare Providers Will Invest in RPA in the Next Three Years' (*Gartner*, 21 May 2020) <https://www.gartner.com/en/newsroom/press-releases/2020-05-21-gartner-says-50-percent-of-us-healthcare-providers-will-invest-in-rpa-in-the-next-three-years> accessed 24 July 2024.

Perhaps the most significant challenge, however, lies in change management. Successfully implementing AI often necessitates fundamental shifts in workflows and, potentially, the very culture of the firm. Resistance to change can pose a considerable barrier, demanding careful management and transparent communication regarding the advantages of adopting AI.

1.9.4. Conclusion

Overall, AI can provide extreme advantages to legal practice on both an automotive and a generative level. AI, through e-discovery software and document management tools can perform monotonous tasks within a law firm to a higher degree of efficiency and accuracy. On the generative side of things, AI can improve the quality of legal advice, advising lawyers on case outcomes and aiding in determining a trial strategy. As such, there are exceptional advantages to the open implementation of AI in one's legal practice.

1.10. Does the appropriateness of AI usage differ based on geographical usage?

By Mariia Koval

A key aspiration in advancing artificial intelligence is to create technologies that address the diverse needs of all communities, transcending geographical and cultural boundaries. The ultimate goal is not to serve a single demographic or region but to ensure that AI systems are equitable and effective on a global scale. A critical challenge in achieving this lies in the fact that knowledge and practices are often locally nuanced, deeply rooted in the cultural, social, economic, and environmental contexts of specific regions. [540] For instance, a solution that works seamlessly in one part of the world may be irrelevant or even detrimental in another due to these regional differences.

If AI models are not designed with an understanding of these regional and cultural differences, they can end up being less effective or even harmful in some areas. This is because the data used to train these models might not accurately represent the needs and conditions of every region. As a result, certain groups might face unfair disadvantages or be excluded from the benefits of AI technology.

Recent studies have identified key determinants affecting international collaboration in various research fields, such as geographic, economic, and cultural distance, though their impacts vary by discipline and remain largely unexplored in the context of artificial intelligence. [541] Understanding these determinants is essential for advancing and unifying AI research and usage across borders.

Geographic distance, despite the advances in information and communication technology aimed at bridging physical gaps, continues to present significant challenges. Economic distance also plays a

[540] Da Yin, Feng Gao, 'GIVL: Improving Geographical Inclusivity of Vision-Language Models with Pre-Training Methods' (2023) 1 < https://doi.org/10.48550/arXiv.2301.01893 > accessed 15 July 2024.
[541] Xuli Tang, Xin Li, Feicheng Ma, 'Internationalizing AI: evolution and impact of distance factors' (2022) 127(1) 181 < 10.1007/s11192-021-04207-3 > accessed 15 July 2024.

pivotal role in shaping collaborative dynamics. Countries with similar economic levels are more inclined to engage in collaborative efforts due to shared resources and comparable technological capabilities. Conversely, countries with poorer economies face significant obstacles, as limited resources and infrastructure can impede their ability to effectively implement and integrate AI technologies. [542]

Moreover, cultural distance, defined by differences in conduct and communication styles, significantly affects the effectiveness of AI usage, as these differences can influence how well AI systems are perceived and integrated into local practices. [543]

By exploring these determinants in the context of AI, we can gain valuable insights into the challenges and opportunities to work towards more effective and integrated AI solutions.

1.10.1. Economic factors

While developed countries are making strides with AI, developing nations encounter unique challenges and opportunities in adopting these technologies. [544] This section explores how AI's potential interacts with the practical difficulties of implementing it in developing countries.

The first major barriers to effective AI implementation in developing countries are both inadequate infrastructure and a shortage of skilled professionals. Essential factors like high-speed internet, powerful computing resources, and advanced data storage facilities are often lacking, which can hinder real-time processing and widen the digital divide. [545] Compounding this issue is the lack of a skilled workplace proficient in AI technologies, such as machine learning and data science. [546] Bridging this gap requires not only concerted efforts in education and training programmes to develop the necessary skills but also significant investment in infrastructure development to provide the technological foundation required for AI initiatives.

The second major barrier to effective AI implementation in developing countries are the ethical and societal considerations. The ethical dimensions of AI implementation pose complex challenges, including bias in algorithms, lack of transparency in decision-making processes, and concerns about

[542] Tang, Li and Ma (n 541) 185.
[543] Ibid.
[544] Sood, A., Sharma, R.K., Bhardwaj, A.K. 'Artificial intelligence research in agriculture: a review. Online Information Review' (2022) 46(6) 1054; Biswas, S., Carson, B., Chung, V., Singh, S., & Thomas, R. 'AI-bank of the future: Can banks meet the AI challenge' (2020) < https://www.mckinsey.com/industries/financial-services/our-i'nsights/ai-bank-of-the-future-can-banks-meet-the-ai-challenge > accessed 15 July 2024.
[545] Adebayo Olusegun Aderibigbe, Peter Efosa Ohenhen, Nwabueze Kelvin Nwaobia 'Artificial intelligence in developing countries: bridging the gap between potential and implementation' (2023) CSIJ 185-199, 188; ITU 'Measuring the information society report' (2018) ITU Publications.
[546] Ibid.; World Bank 'World Development Report 2019: the Changing Nature of Work' (2019) World Bank Publications

data privacy and security. Additionally, societal implications such as job displacement, social inequality, and the potential misuse of AI technologies need careful consideration to minimise negative impacts.[547]

While these ethical and societal considerations are relevant to developed nations, they pose more significant barriers in developing countries due to several factors. For instance, developing countries typically have weaker legislative frameworks for data privacy and security, making it harder to protect citizens. Furthermore, these countries are often more susceptible to a lack of transparency in decision-making processes, which can exacerbate issues of bias and inequality. Additionally, the limited investment in infrastructure development in developing nations leaves less room for addressing ethical and societal implications compared to their developed counterparts.

To address these barriers and promote the inclusive deployment of AI technologies, several key strategies must be adopted. Firstly, significant investments in digital infrastructure are crucial, with collaboration between governments and private entities to enhance broadband connectivity, ensure reliable power supply, and establish data centres.[548] Secondly, addressing skill gaps is paramount, requiring initiatives for capacity building and education in AI-related fields, including AI courses in educational curricula and training programs for professionals. Thirdly, comprehensive AI policies must be developed to ensure ethical practices. [549] Governments should establish frameworks that address concerns related to bias, transparency, and privacy. Engaging stakeholders, including AI developers, civil society, and marginalised communities, in the policy-making process ensures diverse perspectives are considered. Fourthly, public-private partnerships can facilitate resource sharing and data exchange, while building trust and fostering community engagement through awareness initiatives ensures AI solutions are culturally sensitive and locally relevant. [550]

Despite these challenges, within the spectrum of difficulties lies a spectrum of opportunities. AI has the potential to drive innovation, improve public services, and address pressing issues in healthcare, agriculture, and education in developing countries.

For instance, Brazil is deploying AI to address environmental challenges, particularly in the Amazon rainforest. The Instituto Nacional de Pesquisas Espaciais (INPE) utilises AI algorithms to analyse satellite imagery and monitor deforestation in real-time. This AI-driven approach helps authorities detect illegal logging and enforce environmental regulations. By combining AI with geographic information systems (GIS), Brazil aims to preserve the biodiversity of the Amazon and combat deforestation. [551] Another example is Rwanda, which has embraced AI in the education sector to enhance learning experiences. The Smart Africa initiative collaborates with companies like Zindi Africa to implement AI-driven platforms that provide personalised learning content. These platforms adapt to

[547] Floridi, L. Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Lutge, C., Madeli, R., Pagallo, U., Rossi, F., & Schafer, B. 'An ethical framework for a good AI society: opportunities, risks, principles, and recommendations. Ethics, governance, and Policies in Artificial Intelligence' (2021) Minds and machines 28(4), 689-707, 690.
[548] Adebayo (n 545).
[549] Ibid.
[550] Ibid.
[551] Adebayo (n 545) 192.

individual student needs, supporting educators in delivering tailored educational experiences. AI in education in Rwanda aims to bridge educational gaps and improve learning outcomes. [552]

To summarise, developing countries face significant challenges in AI implementation, including inadequate infrastructure, skill shortage, and ethical concerns. Addressing these requires strategic investments in digital infrastructure, comprehensive education and training, and robust policy frameworks. Despite these challenges, AI has the potential to drive socio-economic development and improve public services in healthcare, agriculture, and education. With the right strategies, developing countries can harness AI to achieve significant advancements and ensure its benefits reach all segments of society.

1.10.2. Cultural factors

Cultural differences also play a pivotal role in AI development. A substantial amount of knowledge is region-specific, shared predominantly within certain areas, and may not be universally applicable. AI models that fail to account for regional characteristics risk creating performance disparities and perpetuating biases against underrepresented groups. [553] For these reasons, it is crucial for AI development to be culturally aware and inclusive, ensuring equitable performance and benefits across different regions and communities.

In her article, Sally Applin highlights that many AI systems are programmed and designed by individuals with similar backgrounds, a phenomenon he terms the 'Silicon Valley approach to ethics', reflecting the concentration of tech companies in that region. Conversely, countries like China, South Korea, and Japan are making significant investments in AI development, and AI developed in these nations may also reflect their own distinct ethical approaches based on their cultural contexts. [554]

In practice, cultural influences on AI can extend to various situations that raise questions about fairness, ethics, and inclusion. For instance, in criminal justice, AI can play a significant role in risk assessment and sentencing, with cultural differences affecting the parameters considered as risk factors. A culture valuing rehabilitation may emphasise different criteria than one prioritising retribution. [555]

Similarly, in education, AI algorithms are increasingly integrated into systems to predict student success and recommend further learning opportunities. Cultural differences may influence how AI weighs

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[552] Harerimana, A., & Mtshali, N.G. 'Conceptualisation of e-learning in nursing education in the context of Rwanda' (2020) 10(6) Journal of Nursing Education and Practice 26.
[553] D. Yin, F. Gao, G. Thattai, M. Johnston and K. -W. Chang, 'GIVL: Improving Geographical Inclusivity of Vision-Language Models with Pre-Training Methods,' *2023 IEEE/CVF* Conference on Computer Vision and Pattern Recognition (CVPR), Vancouver, BC, Canada, 2023, pp. 10951-10961, 10951.
[554] Sally Applin 'Everyone's talking about ethics in AI. Here's what they're missing' (*Fast company*, 12 June 2019) <https://www.fastcompany.com/90356295/the-rush-toward-ethical-ai-is-leaving-many-of-us-behind> accessed 19 July 2024
[555] Elena Aliseychik 'The impact of cultural differences on AI' (*LinkedIn*, 28 February 2024) < https://www.linkedin.com/pulse/culture-codes-ai-navigating-moral-landscape-elena-aliseychik-vmdof/> accessed 19 July 202'

factors such as academic performance, extracurricular involvement, and teacher recommendations, reflecting varying cultural priorities in education. [556]

In employment and recruitment, AI is increasingly used to screen candidates and make hiring decisions. Cultural biases can affect the criteria used to evaluate potential employees. For instance, some cultures may place a higher value on academic qualifications, while others may prioritise practical experience and skills.

These scenarios highlight the urgent need for AI systems to integrate cultural nuances to ensure they are ethical, impartial, and inclusive. As AI increasingly influences decision-making across various sectors, it is essential to recognise and address cultural differences to develop technologies that effectively meet the diverse needs of all communities. AI must be developed with a comprehensive understanding of human collective behaviour, individual behaviour, and contemporary global cultural ethics, philosophies, and laws.

The EU's plan to enforce specific regulations with hefty fines for unethical AI usage [557] is a significant step, but proactive and preventive measures are equally important. Researchers worldwide must collaborate to eliminate major ethical biases, making the establishment of an international governing body for AI ethics essential. This body, as proposed by the EU, should include interdisciplinary experts from fields like computer science, philosophy, law, and engineering.

1.10.3. Conclusion

In conclusion, advancing AI technology offers significant opportunities to improve global well-being, but it requires a nuanced and inclusive approach. Economic and infrastructural disparities between developed and developing countries as an example, present challenges for AI implementation. Investing in digital infrastructure, education, and training programs is necessary to bridge these gaps.
Despite obstacles, developing countries could use AI successfully to tackle important issues in healthcare, agriculture, education, and the environment, as seen in Brazil and Rwanda.

Cultural factors significantly influence AI development and application. To promote fairness and inclusivity, AI systems need to integrate cultural sensitivities and regional differences to avoid biases and enhance the global relevance and effectiveness of AI technologies.

Overall, by focusing on these areas through international cooperation, we can create AI systems that enhance human well-being and advance a more just and inclusive future for everyone. This requires encouraging global cooperation, investing in infrastructure and education, and prioritising ethical issues.

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[556] Ibid.
[557] European Parliament 'EU AI Act: first regulation on artificial intelligence' (European Parliament, 08 July 2023) < https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence> accessed 19 July 2024.

1.11. Does the appropriateness of AI usage differ based on the legal context?

By Áilill Park-Sullivan

This essay examines the primary circumstances which may affect the appropriateness of AI use in a legal context. Specifically, the legality of AI outsourcing, the importance of data protection, the dangers posed by biassed training data and the opacity of AI algorithms, the need for courtroom protocol and technologically educated judges, and the key 'leverage points' by which AI can be made appropriate to legal contexts.

1.11.1. Data Protection and Outsourced AI Tools

The content of the EU's AI Act suggests that the use of AI in most legal contexts will be classified as 'high risk'. [558] Specifically, Article 6 of the AI Act states that systems related to the administration of justice, democratic processes and law enforcement will be categorised as high-risk, while Article 5 states that some legal technology will be banned for posing 'unacceptable risk'. [559] However, legal providers may circumvent this regulation by outsourcing AI-generated outputs to non-EU jurisdictions or using similar outputs generated by lower-risk systems. Importantly, the use of outsourced AI to generate legal documents or advice raises questions of legality because this may be regarded as practising law without a license. [560] Although it is unlikely that law firms will outsource restricted AI tools, since doing so may undermine client trust, AI tools are likely to be outsourced by corporate legal departments seeking to reduce costs. [561] Whether the outsourcing of AI is legally or ethically appropriate will ultimately depend on the particular nature of the AI tool and the stakeholders involved.

The appropriateness of AI usage depends on the extent to which an AI's training data is secure. AI should not be used or developed in a legal context where sensitive data is at risk of being leaked. Law firms that develop their own AI systems using client data such as demographic information, deal history, and strategic priorities, [562] must ensure that training data is protected because a leakage would breach data regulations and the firm's duty of client confidentiality. [563]

The American Bar Association has preliminarily responded to this risk by requiring that firms which use client data to build AI tools "safeguard the client data with the care of a professional fiduciary". [564] There is a clear tension between data protection and the appropriate deployment of AI. As AI becomes increasingly integrated into the legal industry, law firms will rely on access to high-quality training data to gain a competitive advantage. As such, they are unlikely to provide access to their internal data for

[558] EU AI Act (n 2).
[559] Emma Cooke and Elyse Barg, 'Ai in Law and the Legal Profession: Industry Insights Report', LSE Law Summit 2024 (London: London School of Economics 2024) 1-54, 41.
[560] Irene Pietropaoli at al, 'Use of Artificial Intelligence in Legal Practice' (2023) London: British Institute of International and Comparative Law 15; Richard Susskind, *Tomorrow's Lawyers: An Introduction to Your Future* (Oxford University Press, 2023) 60-90.
[561] Barg (n 559) 43.
[562] Ibid., 25.
[563] Irene Pietropaoli at al. (n 560) 14.
[564] Ibid.

the purposes of training any AI system that will be used externally to the firm. However, firms may attempt to navigate this tension by forming strategic alliances and thereby accessing an extensive pool of data history. [565] In these instances, the use of AI is appropriate only where client data can be reliably protected and informed client consent has been obtained. [566]

1.11.2. The Impact of AI Bias on Legal Context

Bias is perhaps the most blatant risk associated with the use of AI in legal contexts. Unfortunately, this risk is difficult to mitigate because it is impossible to ascertain how or why specifically any given input is processed by the AI; even experts cannot account for the application of AI algorithms. This is known as the 'Black Box' problem and it has profound implications for legal adjudication, such as case outcomes or penalties. [567] The opaqueness of AI algorithms undermines procedural fairness and impedes the capacity for self-informed advocacy because evaluations based on incomprehensible measures can be neither challenged nor justified. [568] Furthermore, the issue of algorithmic opaqueness is connected to the issue of unclear accountability. For example, should the AI developer or the legal practitioner bear fault for any harm caused by the output of an AI trained with erroneous data? There is currently no comprehensive framework that assigns responsibility for the consequences of any mistake made by an AI tool. [569] The use of AI in the legal context may be inappropriate until a clear order of liability is established.

The danger posed by unintended bias in AI systems varies according to the category of AI that is being deployed. According to a study by the London School of Economics, these categories include management technology, execution technology, generative and AI-powered automation, and data analytics. [570] Management technology is associated with a low risk of unintended bias because it is confined to ancillary functions such as search bars. Executive technology is associated with a low-to-moderate risk of unintended bias because the impact of these AI tools will have little bearing on the substance of deliverables.

Generative and AI-powered automation falls on the more impactful end of the scale, with a moderate-to-high risk. It was found that "a single algorithmic error that lowers market valuations of female-founded companies by just 1% could translate into billions of dollars' worth of losses as M&A transactions continue operating on the partial basis of this data". [571] However, the impact of generative automation can be mitigated somewhat by ensuring that all outputs are checked and edited by qualified professionals. [572] The most dangerous category of AI is data analytics, which is associated with a very

[565] Barg (n 559) 25.
[566] Irene Pietropaoli at al (n 560) 14.
[567] Yavar Bathaee, 'The Artificial Intelligence Black Box and the Failure of Intent and Causation' (2018) 31(2) Harvard Journal of Law & Technology 890-905.
[568] Barg (n 559).
[569] Irene Pietropaoli at al (n 560) 12.
[570] Barg (n 559) 29.
[571] Ibid.
[572] Ibid.

high risk of unintended bias. This is because small-world biases present in historical training data can have outsized effects. Furthermore, legal professionals are not sufficiently equipped to understand these data outputs and therefore cannot mitigate the presence of bias. [573]

1.11.3. The Importance of Oversight and Education

AI is not appropriate in a legal context unless its end-users have a clear protocol to follow and a comprehensive understanding of the tool's limitations. The danger of responding to AI tools without sufficient protocol is highlighted by a series of cases in the American COMPAS system. In these cases, COMPAS classified black defendants as almost 200% more likely to commit a future offence than white defendants. [574] Although the COMPAS survey did not directly factor race into its calculations, some of its 137 questions were highly correlated with race and therefore prejudiced. These questions included, for example, those that related to the defendant's neighbourhood and the incarceration histories of their family members. [575] In several documented instances, judges inappropriately cited COMPAS risk scores as a factor in their sentencing decisions due to their mistaken belief that these scores indicated a defendant's level of criminality. [576] This miscarriage of justice took place largely because there were no laws or official guidelines that dictated how judges were to interpret COMPAS scores or the circumstances in which COMPAS scores should be admissible evidence. [577]

It is evidently inappropriate to rely on AI without scrutinising both its inputs and outputs. In a paper published by the National Civil Justice Institute, Professor G. Marchant argues that judges have an ethical obligation to become, and remain, informed about AI. [578] He further states that, due to AI's present limitations, judges should not use AI tools to make decisions or to draft final opinions.

A similar conclusion has been reached in West Virginia, where the appropriate use of AI in a legal context is currently restricted to research. Under no circumstances may a judge in West Virginia use AI to reach a case outcome and using AI to form opinions should be done with extreme caution. [579] The effect of this restriction is to treat AI as a 'law clerk', whose work must be highly supervised. [580] Although AI risks undermining legal principles of fairness, it also has the potential to greatly reduce the influence of external factors of which a judge is not aware of his or her judicial decision. [581] Education, regulation, and ongoing scrutiny will therefore determine whether AI has the effect of distorting justice or promoting it.

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[573] Barg (n 559) 29.
[574] Ibid., 28.
[575] Ibid., 30.
[576] Ibid.
[577] Ibid.
[578] Gary E. Marchant, 'Artificial Intelligence, Judges, and Legal Ethics' (2024 Forum for State Appellate Court Judges: Artificial Intelligence and the Courts, Nashville, 20 July 2024).
[579] Cynthia Gray, 'Artificial Intelligence and Judicial Ethics', <Artificial intelligence and judicial ethics | NCSC> accessed 24 July 2024.
[580] Ibid.
[581] Barg (n 559) 28.

The importance of technologically vigilant and informed judges is further highlighted by the risks associated with AI use among pro se litigants. AI enables pro se litigants to more easily represent themselves in court, which is all the more valuable in countries where justice is often financially inaccessible. However, pro se litigants who rely on AI to file their court proceedings are also the most likely to use false citations or deep fakes, since they typically do not have the expertise or access to legal databases that are necessary to verify mistakes made by AI.

There have been repeated cases of lawyers or pro se litigants filing pleadings with courts that contain fabricated citations created by so-called "hallucinations" by generative AI programs. This tendency of generative AI programs to simply invent citations or facts is well-documented. For example, one study in 2023 found that ChatGPT 4 fabricated 20% of its citations. [582] A related risk posed by AI fabrications is that powerful litigants will attempt to use fabricated citations against pro se litigants because the latter are unable to identify the falsification. There has already been at least one such incident reported. [583] In light of these risks, Professor Marchant calls on judges to detect false citations that are presented in their courtrooms and ensure that AI is not unfairly used against pro se litigants by more powerful parties. [584]

1.11.4. Measures for Improvement

AI can be made more appropriate for use in a legal context by adhering to Donella Meadows' key 'leverage points', which are designed to affect complex systems and can respond to the 'black box' problem. On a scale of shallow to deep, these leverage points include 'parameters', 'feedback, 'design', and 'intention'. Meadows' leverage points respectively stipulate that a variety of measures should be taken to reduce the risks associated with AI. Such measures include cleaning data sets to remove bias, selectively considering the relevance of data inputs, allowing end-users to rate output quality, implementing clear guidelines specific to the use of each AI tool, training end-users on the treatment of AI outputs, and designing each AI output to deliver a concrete and highly specific goal. [585] Since these measures are presently the best defence against harmful AI outputs, it may be considered inappropriate to use AI in legal contexts where they are not implemented.

1.11.5. Conclusion

In conclusion, the intensity of the risk posed by AI in any given legal context demands correspondingly comprehensive oversight in order for that context to remain appropriate. Risks pertaining to data security, algorithmic bias, and falsely cited court filings comprise some of the clearest contexts in which legal AI stands to be inappropriate without the presence of significant cautionary measures. [586] Indeed,

[582] Marchant (n 578) 12.
[583] Ibid., 19-20.
[584] Ibid., 12.
[585] Barg (n 559) 31.
[586] European Commission for the Efficiency of Justice, European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment (Council of Europe, Strasbourg, 2018) 63-68.

a strong argument may be made that no AI is appropriate to legal contexts until its effects have been further studied because the consequences of legal AI are so diverse, severe, and difficult to understand. Although well-founded, such an argument fails to acknowledge the more extreme dangers associated with certain legal contexts than others, such as the discrepancy between data analytics and management technology.

1.12. What are the key dangers arising from misuse of AI by lawyers?

By Luca Nemeth

AI in today's day and age is at our fingertips; with a quick search one can easily be on Gemini by Google or ChatGPT. The comfort this resource offers can be of particular appeal to those in professions where a deep understanding of complex data is essential, or in emerging areas of knowledge to learn where to begin. The use of AI, however, can be a cause for concern, not just a concern for professors worried about students' misuse in the context of exams and papers; it also raises significant concerns for professionals regarding credibility and reliance. This paper will focus on the potential dangers and issues to arise where lawyers rely on AI, including misrepresentation, confidentiality breaches, and the potential spread of misinformation. It will specifically examine how biases in AI can distort data and impact legal outcomes.

1.12.1. Misrepresenting AI Capabilities

How does AI work? It is a difficult question to answer for one who is not involved in the actual development of it. And even then, it can vary from one program to another, meaning an engineer who worked on Google's Gemini may have a general understanding of how ChatGPT works but not necessarily be aware of the intricacies of it. It cannot be expected that one will understand it completely, given it is a complex area of expertise. However, it is crucial to have a general understanding of how AI functions in order to know when and where to use it. It is crucial to be aware of its limitations in order to learn how to trust it as a legal resource.

Transparency is essential for gaining this knowledge and building trust in AI systems. A fundamental ground of the rule of law, enabling the functionality of our legal system, is that it should be accessible to all. This has been a complex matter even before the introduction of AI.[587] In order to enable AI to make our legal system truly accessible, everyone - and lawyers in particular - requires advanced skills to understand the operation of reasoning of AI.

[587] D.G. Morgan, *Hogan and Morgan's Administrative Law* (4th edn (student version), Round Hall 2012) [2–01]-[2–08].

This necessity has led to the emergence of the concept of explainability [588]. Explainability is quickly developing and is at the crux of most AI regulations all around the globe. [589] Issues arise, however, when lawyers cannot explain the operation and reasoning of AI, to back its credibility in arguments.

If we were to compare AI to humans, a great differentiation is that while humans yearn for knowledge they pause their pursuit of it once their curiosity is satisfied. As an example, A (Human) would like to learn how to bake. A will possibly google or read in books until they feel they know enough to bake a cake. B (AI) on the other hand, will seek knowledge about baking until it is given another task. AI's capabilities as a machine means it can dilute vasts of knowledge. [590] This dilution and pursuit of knowledge means AI is an invaluable asset to garner comprehensive and expansive knowledge in an efficient manner.

The problem arises where a lawyer may potentially pass off AI-generated work as their own. This concern reinforces the notion that AI will take over roles within the legal system. Yet, when we reiterate the complexity of legal work, it is quickly recognisable that AI may be deeply flawed. There is an inherent danger that AI may suggest cases, legislation or other precedent that has since been overturned or amended. [591] This combined with the 'black box' nature of AI programs and issues of transparency can lead to misrepresentation.

Misrepresenting AI's capabilities can lead to an array of issues within the legal field, such as mis-utilisation of outdated cases, furthering the distrust in AI and lawyers and deepening the issues in general with the legal system.

1.12.2. Confidentiality Issues

While confidentiality concerns related to AI are a relatively recent topic among legal scholars, they have been previously addressed in other professions, such as medicine and social work. One of the main issues when it comes to data confidentiality and AI is the fact that the development of AI, and the data AI uses to progress, are in the hands of private corporations such as Google and IBM. [592]

Experience in the healthcare system shows how the varying control mechanisms of patient data alter the legal protections surrounding it. A notable example is the partnership between DeepMind and the Royal Free London NHS to use machine learning in treating kidney injury. It was revealed that patients had not fully consented to the use of their data, nor were they informed about how it would be stored.

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[588] Shea Coulson, 'Explainability, Misrepresentation, and the Commercialization of Artificial Intelligence | DLA Piper' (*DLA Piper*) <https://www.dlapiper.com/en-ca/insights/publications/2024/03/explainability-misrepresentation-and-the-commercialization-of-artificial-intelligence> accessed 18 July 2024.
[589] Ibid.
[590] Ellen Glover, 'What Is Artificial Intelligence (AI)?' (*Built In*, 2024) <https://builtin.com/artificial-intelligence> accessed 19 July 2024.
[591] Dory Reiling, 'Courts and Artificial Intelligence' (2010) 11(2) International Journal for Court Administration 8.
[592] Blake Murdoch, 'Privacy and Artificial Intelligence: Challenges for Protecting Health Information in a New Era' (2021) 22 BMC Medical Ethics 122.

The situation became even more complicated when Google acquired DeepMind, shifting control of the patient data from the UK to the US. [593] This possibility of mass-moving data shows new challenges, not only applicable in the context of healthcare professionals but with scope to affect various professionals. [594] This case from the healthcare perspective sheds great light on what the challenges are when it comes to confidentiality and AI. The DeepMind example can serve as a great illustration of the negative effect of AI on confidentiality within the legal field.

On the surface AI can seem somewhat infallible, but with the risks that data sets can be leaked, hacked, and stolen, a whole new chapter of difficulties for the preservation of confidentiality emerge, especially in the sensitive context of legal cases. With the race to develop newer Large Language Models within ChatGPT, Gemini and the likes, the danger of attacks to private data is exposed. Such risks have been exemplified by Microsoft leaking 38 TB of private training data, [595] and ChatGPT exposing the chat history of users. [596] While these can already seem enough reason for concern and distrust, there is another layer of threat stemming from cybercrime. Where previously IT expertise was necessary to hack, Large Language Models can now generate malicious code for you. [597] Large Language Models can also work as a proxy for phishing attacks, where answers could include malicious links or viruses. [598]

In effect, confidentiality issues with AI are not limited to the legal field, but to all professional areas that have an intrinsic high level of confidentiality. There is a need for future development of guide rails and a need to fully understand and address the 'black box' nature of AI. Since AI is seemingly not going anywhere, professions have to adapt and create guardrails to ensure maximum privacy.

1.12.3. Unreliable Information

To see a full picture as to how AI may provide unreliable information, one must address AI bias. Humans have biases, both conscious and unconscious, that affect our decision making. These biases stem from factors such as upbringing and traditions. If the artificial intelligence system is trained on data that primarily includes people from low-income, disadvantaged neighbourhoods, for example, it may disproportionately calculate the likelihood of a person committing a crime. This effect emerges

[593] Marcy Cuttler, 'Transforming Health Care: How Artificial Intelligence Is Reshaping the Medical Landscape' (*CBC NEWS*, 26 April 2019) <https://www.cbc.ca/news/health/artificial-intelligence-health-care-1.5110892> accessed 18 July 2024.
[594] Blake Murdoch, 'Privacy and Artificial Intelligence: Challenges for Protecting Health Information in a New Era' (2021) 22 BMC Medical Ethics 122.
[595] Ben Sasson et al., '38TB of Data Accidentally Exposed by Microsoft AI Researchers' (*Wiz Blog*, 18 September 2023) <https://www.wiz.io/blog/38-terabytes-of-private-data-accidentally-exposed-by-microsoft-ai-researchers> accessed 18 July 2024
[596] Kate Park, 'Samsung Bans Use of Generative AI Tools like ChatGPT after April Internal Data Leak | TechCrunch' <https://techcrunch.com/2023/05/02/samsung-bans-use-of-generative-ai-tools-like-chatgpt-after-april-internal-data-leak/?guccounter=1&guce_referrer=aHR0cHM6Ly9saW5rLnNwcmluZ2VyLmNvbS8&guce_referrer_sig=AQAAANENC0A0eR1wj4uKjE2xYnlFynLwFHJcEu2-M_WS39phyPqp4a7r1XyrkaQ_m8JChwYESwqxmmsDDD7pbsKvjaVrYorD2GWs6_zJhZjfcqL_QLttfvNkVzx2shzOJ1WOKnT9x1Y0lTiOsVjnF_EBHjlUE4RhoGHTLVhv-L-p0zvL> accessed 18 July 2024.
[597] Glorin Sebastian, 'Do ChatGPT and Other AI Chatbots Pose a Cybersecurity Risk?: An Exploratory Study' (2023) 15 International Journal of Security and Privacy in Pervasive Computing 1.
[598] Ibid.

from the fact that the AI system is prone to learn from biassed data that does not proportionately represent an entire population. [599]

As humans are the ones to provide the training data for AI, the data pool itself may be skewed as well. IBM, one of the leading AI-developing tech companies, have acknowledged that if this bias goes unaddressed, AI bias may cause long-lasting issues [600] such as marginalisation of groups of a certain skin colour, gender, or sexual orientation. [601] AI's capabilities as a diagnostic tool in the healthcare industry has been skewed by a predominant white and male population. Therefore the calculated diagnostic success of a patient will be affected by the predisposed bias in the computer itself. [602]

However, one might expect that once the AI is released from the training data, such as Large Language Models being released for general use, the data would be more representative of an entire population. Unfortunately, this is not the reality. Often, the large data pools used by AI models like ChatGPT and Gemini become increasingly biassed. This has proved detrimental in professional sectors. For instance, many companies now adopt AI to select candidates for employment, but they may impose specific criteria, such as whether the candidate has a criminal record. This skews the data, as last year's statistics in the U.S. show that African Americans are, on average, incarcerated six times more often than Caucasians, leading to disproportionate impacts. [603] Thus the requirement of not accepting felons for a position would further affect the bias of the AI program.

Algorithmic biases in the legal context can show up in a multitude of ways, one of the most prominent examples is the usage of COMPAS by judges to determine the likelihood of recidivism by an offender given they receive bail. [604] Judges are not expected to completely trust the program, and this is often employed by the company as a defence to claims of reliance. Yet the program's outcome may influence the judges decision, whether they elect to take account of the result or not. [605] Essentially COMPAS is not biased against certain groups of defendants, but all of them. A biased judge who naively trusts the program, may for example refuse bail even in cases when the defendant is less likely to commit another crime prior to a trial. [606] COMPAS is a perfect example as to how detrimental algorithmic bias can be in a legal context.

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[599] Emily Pronin, 'Perception and Misperception of Bias in Human Judgment: Trends in Cognitive Sciences' (2007) 11(1) Trends in Cognitive Sciences <https://www.cell.com/ajhg/abstract/S1364-6613(06)00299-3> accessed 19 July 2024
[600] James Holdsworth, 'What Is AI Bias?' (*IBM*, 14 December 2023) <https://www.ibm.com/topics/ai-bias> accessed 19 July 2024 .
[601] Ibid.
[602] Ibid.
[603] Leah Wang PP, 'Updated Data and Charts: Incarceration Stats by Race, Ethnicity, and Gender for All 50 States and D.C.' (*Prison Policy Initiative*, 27 September 2023) <https://www.prisonpolicy.org/blog/2023/09/27/updated_race_data/> accessed 19 July 2024.
[604] C Engel, L Linhardt and M Schubert, 'Code Is Law: How COMPAS Affects the Way the Judiciary Handles the Risk of Recidivism' [2024] Artificial Intelligence and Law <https://doi.org/10.1007/s10506-024-09389-8> accessed 5 September 2024.
[605] Ibid.
[606] Engel et al. (n 604).

With these facts and biases in mind, it is difficult to say that what AI provides is legitimate as AI, just as humans, is inherently biassed from the moment of creation. IBM highlights the need for a diverse and vigilant team to prevent bias in AI development. However, the complex nature of AI systems makes it challenging to ensure objectivity. If not properly regulated, the rapid advancements of AI could inadvertently contribute to social problems like racial profiling and sexism. [607]

1.12.4. Conclusion

The focus of this paper shifted, sometimes even outside the realm of law, this was done to paint a full picture as to what type of dangers can arise from misuse of AI by lawyers. This is a continuously evolving topic, and it's important to recognize that proper usage, which includes awareness of these issues, can enhance legal careers. However, to stay informed about the risks, lawyers and other professionals must continuously educate themselves to match the rapid pace of AI development. The necessity to create and implement safeguards for data protection, as well as to promote transparency and explainability of AI will be central to the further development of artificial intelligence in the legal profession.

[607] Marcy Cuttler, 'Transforming Health Care: How Artificial Intelligence Is Reshaping the Medical Landscape' (*CBC News*, 26 April 2019) <https://www.cbc.ca/news/health/artificial-intelligence-health-care-1.5110892> accessed 18 July 2024.

Chapter 2: Impact of AI upon Decision-Making

2.1. From a practical perspective, could AI be used to make judicial decisions?

By Yashal Fatima

The debate over AI in law raises fundamental questions about explainability, learning, and the ability to reason-qualities central to human adjudication and a topic greatly debated by the AI community.[608] John McCarthy defined artificial intelligence as 'making a machine behave in ways that would be called intelligent if a human were so behaving.'[609] This essay aims to determine whether, from a practical perspective, AI can be used to make judicial decisions. Key issues such as explainable AI, codified justice, and the importance of human judgement versus AI systems will be explored to evaluate the feasibility of AI taking on this vital role.

2.1.1. Explainability vs efficiency

The legal community believes that AI is not yet ready to be used in judicial decision making, particularly due to its lack of explainability; this refers to the idea of justifying a conclusion that a human party can check. Rawashdeh explains that current AI models go through a process of deep learning, a process comparable to teaching a young child new information; it learns in a way that we lose track of the process of how the system is using the information.[610] This is what we refer to as a 'black box problem', that is, we are not always aware of what inputs AI may be relying on or how it uses the information provided to it when coming to its conclusions.

Trained AI systems typically rely on previous case law and historical data, training them to be resistant to flexibility and change.[611] Unfortunately, due to this, AI systems at times adopt outdated trends and reasonings from past decisions, ones that are often 'produced through the histories of exclusion and discrimination.[612]' For instance, the COMPAS system, an AI tool used by American judges to assist in bail and sentencing decisions, was designed to be fair but produced biased results.[613] It unfairly discriminated against people of colour in predicting the risk of recidivism, showing only 61% accuracy and disproportionately labelling Black defendants as future criminals. Courts have a structural and social responsibility to serve our communities, however, when bias in sentencing is perpetuated by AI

[608] Edwina L. Rissland, Kevin D. Ashley and R.P. Loui, 'AI and Law: A fruitful synergy, Artificial Intelligence' (2003) 150 (1-2) Artificial Intelligence 1.
[609] John McCarthy and others, 'A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence' in Jerry Kaplan (ed), Artificial Intelligence: What Everyone Needs to Know (Oxford University Press 2016).
[610] Lou Blouin, 'AI's Mysterious "Black Box" Problem, Explained' (University of Michigan-Dearborn News, 6 March 2023) <https://umdearborn.edu/news/ais-mysterious-black-box-problem-explained#:~:text=It%20> accessed 4 September 2024.
[611] Maxi Scherer, 'Artificial Intelligence and Legal Decision-Making: The Wide Open? Study on the Example of International Arbitration' [2019] Queen Mary School of Law Legal Studies Research Paper No 318/2019, 18.
[612] Ruha Benjamin, Race after Technology (Polity 2019).
[613] Sir Robert Buckland, 'AI, Judges and Judgement: Setting the Scene' (2023) M-RCBG Associate Working Paper Series 220 (8) <https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/working.papers/Final_AWP_220.pdf> accessed 3 September 2024.

systems, it exacerbates tensions within society by further marginalising system-impacted communities.[614] Both AI tools like COMPAS and human judges face the same 'black box' problem, where the reasoning process remains opaque and potentially influenced by discriminatory practices, leaving the main issues of bias unresolved.[615] Therefore, from a practical perspective, there is a risk of embedding past biases into AI because it does not have the mind to consider inequalities and differentiate between wrongful practices of the past and fairer decisions of today.

On the other side of the debate, some argue that the concerns outlined above are misplaced or exaggerated, suggesting a need to shift priorities. Brozek, for example, challenges the focus on the 'black box' problem, arguing that justification is unnecessary and that the outcomes themselves are more important than the reasoning behind them.[616] The goal should be to ensure the output is accurate and effective rather than to dissect the decision-making process; they argue that, as with other AI applications, the lack of transparency has not hindered us from benefiting.[617] Therefore, if the system delivers practical, objective, and reality-based results, we need not overburden ourselves with understanding its inner workings.

The adjudication process is shifting toward a system of 'codified justice' that prioritises efficiency over moral consideration - a basis some argue is unsuitable for sound judicial decisions.[618] One example is the Public Safety Assessment (PSA) tool, which assists judges in predicting the risk of reoffending and the likelihood of a defendant appearing in court. Unlike COMPAS, the PSA is more transparent, as its algorithm is published for scrutiny.[619] It simplifies human behaviour into numerical scores and excludes socioeconomic factors, relying instead on nine risk factors primarily tied to criminal history, which are more relevant to sentencing.[620] This approach aligns with Jeremy Bentham's philosophy of 'the greatest happiness for the greatest number,' where decisions are guided by a calculated balance of happiness and unhappiness to ensure proportionate punishment. [621] The PSA's numerical justice has practically proven to be effective in standardising decisions, and is best suited for less complex cases requiring judgements on the balance of probabilities.

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[614] Marta Ziosi and Dasha Pruss, 'Evidence of What, for Whom? The Socially Contested Role of Algorithmic Bias in a Predictive Policing Tool' in The 2024 ACM Conference on Fairness, Accountability, and Transparency (3–June 2024, Rio de Janeiro, Brazil).
[615] Cynthia Rudin, Caroline Wang, and Beau Coker, 'The Age of Secrecy and Unfairness in Recidivism Prediction' [2020] Harvard Data Science Review 2(1).
[616] Bartosz Brożek et al., 'The Black Box Problem Revisited: Real and Imaginary Challenges for Automated Legal Decision Making' [2024] Artificial Intelligence and Law 32, 427–440, 11.
[617] James Broughel, 'Artificial Intelligence 'explainability' is overrated' (*Forbes*, 2024) <https://www.forbes.com/sites/jamesbroughel/2024/04/13/artificial-intelligence-explainability-is-overrated/> accessed 23 November 2024.
[618] Richard M and Alicia Solow-Niederman, 'Developing Artificially Intelligent Justice' [2019] Stanford Technology Law Review 22, 242, 12.
[619] Kira Belova, 'Artificial Intelligence (AI) & Criminal Justice System: How do they work together?,' (*PixelPlex,* 13 January 2021) <https://pixelplex.io/blog/artificial-intelligence-criminal-justice-system/> accessed 22 November 2024.
[620] Spurgeon Kennedy, Laura House, Michael Williams, 'Using Research to Improve Pretrial Justice and Public Safety: Results from PSA's Risk Assessment Validation Project' (*United States Courts,* June 2013) <https://www.uscourts.gov/sites/default/files/77_1_5_0.pdf > accessed 5 September 2024.
[621] Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* (Clarendon Press 1907).

2.1.2. Accountability in judicial decision making

So far, this essay has established that the legal community is divided on the importance of explainable AI but on a deeper level, there are broader concerns about the origins of the knowledge that AI relies on. Many AI systems are developed by private companies, making it difficult for parties to question or demand transparency about how decisions are made.[622] For instance, in China's smart court system, there are concerns about the extent of involvement by legal technology companies whose influence in shaping these programs can significantly affect judicial outcomes.[623] The opaque nature of these AI tools means that judges reduce their role to merely instrumental, raising serious questions about the diminishing human oversight and accountability in decision-making.[624] From a practical perspective, these concerns show that AI is unsuitable for the purpose of being a replacement for judges; it lacks impartiality as we do not know where the decisions are coming from, nor can parties hold any actor accountable for inaccurate outcomes. Until judges advocate for better explanations of AI decisions and assist in translating complex theoretical concepts into functional algorithms, we cannot expect AI made by private companies to make accurate and reliable judicial decisions.[625] This would be important because machine learning relies on learning from data and patterns, whereas judicial adjudication is inherently human, depending on analogies, discretion, and ideas of justice - all of which AI and non-legal experts cannot yet replicate, therefore, practically speaking, it is not possible for AI to make judicial decisions by itself.[626]

On the other side of the debate is the argument that AI can be adjusted to better align with desired values. Zalnieriute emphasises that humans, not technology, ultimately shape AI systems, decide which values and principles to prioritise during the development process, a key part of reinforcement learning from human feedback.[627] This approach allows us to fine-tune AI by using human input to produce better-suited responses.[628] If explainability is prioritised, AI systems can be designed with transparency, clearly indicating the data used and in turn, being more explainable by providing justifications for their decisions. This makes AI more understandable and accountable, enabling users to scrutinise its reasoning processes.[629] The concept of 'technological due process' addresses these concerns by granting individuals the right to inspect, correct, and dispute inaccurate data, helping developers identify and

[622] BIICL, 'Use of Artificial Intelligence in Legal Practice' (*BIICL,* 2023) <https://www.biicl.org/documents/170_use_of_artificial_intelligence_in_legal_practice_final.pdf> accessed 3 September 2024.
[623] Tania Sourdin, 'Judge v Robot? Artificial Intelligence and Judicial Decision-Making', [2018] UNSW Law Journal 41(4) 1114, 1129.
[624] Davide Carneiro et al., 'Online dispute resolution: an artificial intelligence perspective' (2014) 41 Artificial Intelligence Review 211.
[625] Ashley Deeks, 'The judicial demand for explainable artificial intelligence' [2019] Columbia Law Review, 119(7) 1829–50.
[626] Ignacio N Cofone, 'AI and Judicial Decision-Making' in Florian Martin-Bariteau and Teresa Scassa (eds), Artificial *Intelligence and the Law in Canada* (LexisNexis Canada 2021) ch 13
[627] Monika Zalnieriute et al., 'The Rule of Law and Automation of Government Decision-Making' [2019] 82(3) Modern Law Review 425–55, 8.
[628] April G. Dawson, 'Algorithmic Adjudication and Constitutional AI—The Promise of A Better AI Decision Making Future?', [2024] 27 SMU SCI. & TECH. L. REV. 11, 21.
[629] Philipp Hacker and Jan-Hendrik Passoth, 'Varieties of AI Explanations under the Law: From the GDPR to the AIA, and Beyond' in Holzinger, Goebel, Fong, Moon, Müller and Samek (eds), Lecture Notes on Artificial Intelligence 13200: xxAI - Beyond Explainable AI (Springer 2022)

resolve errors.[630] This aligns well with the purpose of judicial decision-making, which seeks to prompt behavioural change among parties, studies have shown that providing individuals with feedback on the outcomes of their actions can effectively encourage such change.[631] The system would be built in a way that is open about the inputs and in turn is also helpful for making judicial decisions that are practically helpful, punishment without explanation does not serve the greater purpose of reform. An example of how this might work in practice is Estonia's plan to develop a 'robot judge' to adjudicate small claims disputes. This system would allow parties to submit claims and receive decisions, which could then be appealed to a human judge for further accountability.[632] Lawyers and judges are overseeing the project to ensure accuracy and address errors. Such a system could help resolve case backlogs while incorporating checks and balances to ensure fairness and accountability, making it a viable tool for judicial decision-making.[633]

2.1.3. Conclusion

This essay has examined the practical possibility of AI being used to make judicial decision. The primary challenges identified are issues of explainability and the concern over whether it is acceptable to replace human judges without involving them in the design process. However, the counterarguments suggest that explainability is only a problem if it is prioritised and that by changing the way algorithms are designed, it is possible to alleviate concerns within the legal community. This can be achieved by including judges in the initial development stages and having them review AI-generated decisions to ensure they meet legal standards. In summary, it is a real possibility that AI might one day be capable of making judicial decisions, but that day is not here yet, and it will not be until a compromise is reached between results and understanding of AI processes.

2.2. What ethical, rights-based or rule of law considerations would suggest AI should not make judicial decisions?

By Guanqun Qin

The use of AI is increasingly becoming integrated into many aspects of people's lives.[634] However, the application of AI raises particular questions as to whether it may be used for judicial decisions in court. In countries such as the UK, AI is currently used by judges, as well as in broad court applications.[635] It is acknowledged that the application of AI has the potential to improve court decisions in several

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[630] Danielle K Citron and Frank Pasquale, 'The Scored Society: Due Process for Automated Predictions' (2014) 89 Washington Law Review 1, 20.
[631] Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, O'Brien MA, Johansen M, Grimshaw J, Oxman AD, 'Audit and Feedback: Effects on Professional Practice and Healthcare Outcomes' (2012) Cochrane Database of Systematic Reviews.
[632] WIRED, 'Can AI Be a Fair Judge in Court? Estonia Thinks So' (*WIRED*, 2019) <https://www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so/ > accessed 17 September 2024.
[633] Joshua Park, 'Your Honor, AI' (Harvard International Review, 3 April 2020) <https://hir.harvard.edu/your-honor-ai/> accessed 25 November 2024
[634] Felicity Bell et al., 'AI Decision-Making and the Courts: A Guide for Judges, Tribunal Members and Court Administrators' (2022) Australasian Institute of Judicial Administration 1, 7.
[635] Joshua Rozenberg, 'Automatic Online Conviction' (*The Legal Education Foundation*, 2020) <https://long-reads.thelegaleducationfoundation.org/automatic-online-conviction/> accessed 21 July 2024.

ways.[636]

While many look forward to the unprecedented benefits of AI, the challenges and concerns that come with using AI for legal decision-making cannot be ignored. It is important to recognise that there are many ethical, rights-based or rule of law considerations that suggest AI should not be used in judicial decision-making. In arguing that the assistance of AI may be inappropriate for judicial decision-making, this sub-chapter will analyse examples of laws that might hinder the use of AI within the judicial decision-making process. Further, it will discuss the characteristics of AI that limit it from making judicial decisions. Finally, several ethical controversies and the violation of certain rights that may arise from the use of AI for judicial decisions will be explored.

2.2.2 Legal Restrictions on the Use of AI for Judicial Decisions

There currently exist some laws that restrict the use of AI for automated judicial decision-making, which may prevent the use of such technology in the justice system. In particular, the EU Artificial Intelligence Act classifies AI systems as high-risk if they "assist a judicial authority in researching and interpreting facts and law and applying the law to specific facts or are used in a similar manner for alternative dispute resolution."[637] This means the EU Artificial Intelligence Act takes the position that people should be particularly cautious about AI that affects the rule of law, justice, and democracy. Furthermore, the explanatory notes to Article 9 of the Council of Europe Convention for the Protection of Individuals regarding Automatic Processing of Personal Data states that "individuals have the right to know the logic underpinning the processing of their data."[638]

If AI is used to make a judicial decision, but that decision is not interpretable or transparent, it may violate people's rights under the Convention.[639] Moreover, Article 22 of the European Union's General Data Protection Regulation (GDPR) completely prohibits the use of fully automated decision-making to produce legal effects.[640] Similarly, the Data Protection Act 2018 in the UK also prohibits the use of solely automated decision-making, but carves out limited exceptions.[641] Therefore, the current laws on personal human rights and data protection, as well as the AI current regulation, impose some restrictions on the application of AI for judicial decision-making, which may affect the use of AI in legal practice.

2.2.3 AI is Less Likely to Meet the Requirements of a Judicial Decision

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[636] Tania Sourdin, 'Judge v Robot? Artificial Intelligence and Judicial Decision-Making' (2018) 41 University of New South Wales Law Journal 1114, 1117.
[637] EU AI Act (n 2) Annex III 8(a).
[638] Council of Europe, *Convention for the Protection of Individuals with Regard to the Processing of Personal Data* (2018), para 77.
[639] Because of the black box nature of AI, this makes it difficult to inform people about the process by which the AI makes decisions and why AI ultimately makes the decisions it does.
[640] GDPR (n 23), art 22.
[641] Data Protection Act 2018, Article 49 and Article 50; John Morison and Tomás Mclnerney, 'When Should a Computer Decide? Judicial Decision-Making in the Age of Automation, Algorithms and Generative Artificial Intelligence' in Sophie Turenne and Mohammad Moussa (eds), *Research Handbook on Judging and the Judiciary* (Edward Elgar Publishing Ltd 2024) 5.

There may be a conflict between the nature of AI and legal decisions, which may make AI less likely to meet the requirement of rational judicial decisions, thereby defeating the purpose of justice. It will be explained below that AI may lack the ability to make decisions and may be inaccurate when applied to judicial decisions. Furthermore, the application of AI also creates difficulty realising the discretion of judges and may reduce the effectiveness of the participation of parties in judicial practice.

AI does not fully conform to the characteristics of judicial decisions. Specifically, AI is characterised by digitalisation through its use of significant quantities of data and examples for analysis and evaluation.[642] However, judicial decisions are not a representation of numbers and procedures, but rather involve an analysis of the facts of the relevant case and the application of legal provisions. These decisions do not solely rely on the judge's discretion, but also on their experience and wisdom.[643]

This contradiction may cause AI to make mistakes when making judgments. As such, it is difficult to meet people's expectations of a good judicial decision, such that it is a decision which is fair, correct and transparent. For instance, machine learning is a significant branch of AI.[644] Machine learning models require substantial amounts of input data, such as cases, to be trained. Once trained, machine learning models can be used to predict or analyse the information when given a prompt.[645] When the samples in the training process are not large enough, it is difficult for machine learning models to work.[646] However, every case is different and it is a unique individual that emerges with the development of the times. It is difficult to label or digitise past cases as input for AI, and there may not be sufficient past judgments on a specific issue or area to serve as input for training AI, thereby affecting the use of AI for prediction and judicial decisions.[647]

Additionally, there is evidence that AI is not always accurate when using it as a tool for judicial practice and assisting judges in making decisions. In the criminal justice system, risk assessment of offenders can rely on actuarial predictions.[648] Although AI has mathematical and statistical advantages in processing, actuarial errors are significant.[649] For example, it is difficult to accurately apply data from a group directly to an individual.[650] In *State of New South Wales v Dillon*, the analysis of recidivism is group-based and does not directly reflect the circumstances of a particular offender.[651] This leads to the need for great caution when comparing group analysis with case analysis, as individual-specific factors may not be reflected. Actuarial tools are also not sensitive to changes in the impact of the actual risk of

[642] Ricardo Silva Peres and others, 'Industrial Artificial Intelligence in Industry 4.0-Systematic Review, Challenges and Outlook' (2020) 8 IEEE 220121, 220122.
[643] Morison and Mclnerney (n 641) 18.
[644] Michael I Jordan and Tom M Mitchell, 'Machine learning: Trends, Perspectives, and Prospects' (2015) 349 Science 255.
[645] Harry Surden, 'Machine Learning and Law' (2014) 89 Washington Law Review 87, 105.
[646] Sourdin (n 636) 1125.
[647] Surden (n 645).
[648] Alyssa M Carlson, 'The Need for Transparency in the Age of Predictive Sentencing Algorithms' (2017) 103 Iowa Law Review 303.
[649] Carolyn McKay, 'Predicting Risk in Criminal Procedure: Actuarial Tools, Algorithms, AI and Judicial Decision-making' (2020) 32 Current Issues in Criminal Justice 22, 30.
[650] Ibid.
[651] [2018] NSWSC 1626, [102].

offenders reoffending, as explained in *State of New South Wales v Cook*.[652] Therefore, utilising AI for judgement may lead to errors, and in many cases does not process the results correctly.

The exercise of judges' discretion is complicated, and it is difficult for AI to intervene and control. As Oliver Wendell Holmes Jr. maintained, the life of the law has not been logic, it has been experience.[653] The exercise of judges' discretion in decision-making is a fundamental means to achieve judicial openness and personalised justice, which is conducive to realising the broader value of law.[654] However, the static nature of AI makes it difficult to match the dynamic characteristics of cases.[655] Although AI systems may simulate the exercise of discretion and extract legal concepts and their connections by creating legal ontology, they are not always stable nor accurate, and often ignore the meaning behind the law.[656] Therefore, it is difficult to achieve the same openness and effect as judges exercising their discretion.

Some have criticised discretion for making judgments more subjective and creating unpredictability in sentencing decisions. Consequently, this uncertainty may impede transparency and accountability within judicial decision-making.[657] However, as discretion is a matter of degree and based upon a balance adjusted between specific rules and unique facts, it is difficult for AI to become a powerful tool to address the issues raised by discretion.[658] Hence, AI applications may be unable to replace judges when they make decisions.

The procedural and stereotypical nature of AI does not align with the practice of judicial discretion, which may undermine the purpose of personalised justice and judges deciding cases.[659] In particular, many general provisions in the criminal procedure law and criminal code give judges discretion.[660] Judges, as individuals with knowledge and experience, and who have received extensive training, are more likely to weigh the multiple factors in a case, and are therefore more likely to make informed judgments.[661] They are also guided by legal grounds when deciding cases and take into account the circumstances of both the plaintiff and defendant, and the current social context.[662] If AI were to be used for judicial decisions, there is a question as to how computers would simplify and signify the law, and further concerns as to whether AI can handle the many nuances of the law.[663]

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[652] [2019] NSWSC 51.
[653] Oliver Wendell Holmes Jr, *The Common Law* (Little, Brown and Company 1881).
[654] Morison and Mclnerney (n 641) 19.
[655] Lord Sales, 'Algorithms, Artificial Intelligence and the Law' (2020) 25 Judicial Review 46.
[656] Jens Frankenreiter and Julian Nyarko, 'Natural Language Processing in Legal Tech' in David Engstrom (ed), *Legal Tech and the Future of Civil Justice* (CUP 2023) 82.
[657] *Markarian v The Queen* [2005] HCA.
[658] Morison and Mclnerney (n 641) 20.
[659] Sourdin (n 636) 1128.
[660] Pawel Marcin Nowotko, 'AI in Judicial Application of Law and the Right to a Court' (2021) 192 Procedia Computer Science 2220, 2225.
[661] Chris Guthrie, Jeffrey J Rachlinski and Andrew J Wistrich, 'Blinking on the Bench: How Judges Decide Cases' (2007) 93 Cornell L. Rev. 1, 13.
[662] Kenneth Culp Davis, 'Discretionary Justice' (1970) 23 Journal of Legal Education 56
[663] Melissa Perry, 'iDecide: Administrative Decision-making in the Digital World' (2017) 91 Australian Law Journal 29.

Judges are not simply managing cases when making decisions, but are responsive and flexible, and aim to solve problems and maintain order.[664] In addition, judges consider any ethical issues that may arise.[665] In contrast, as AI follows procedures and coding, it is less likely to understand the information it processes.[666] Automated decision-making through AI may improve judicial efficiency, but it may also damage the quality of litigation.[667] Improving litigation efficiency should not be based on sacrificing other legal principles.[668]

Further, the process of adjudication cannot be separated from the participation of all relevant parties. Consequently, the use of AI to make judgments may affect participation in judicial proceedings. The European Court of Human Rights (ECtHR) considers that effective participation includes the defendant's participation in the proceedings.[669] The Criminal Procedure Rules 2020 also references the importance of effective participation and provides for the right to appoint an intermediary to facilitate such participation.[670] Additionally, some scholars believe that courts are generally reluctant to conduct litigation in the absence of one of the two parties.[671] A judge's decision is not an AI-type programming process. The debate between the parties in court is also important, and AI decision-making may not be able to replicate that process. Therefore, using AI to make decisions may automate more processes and reduce the involvement of relevant parties. Subsequently, this may affect the implementation of the principle of effective participation and the quality of decisions.

2.2.4 AI for Judicial Decisions May Raise Ethical Risks and Rights Violations

Using AI for judicial decision-making may lead to ethical risks and infringement of some rights, such as human rights and intellectual property rights, and these issues may hinder courts from using AI to make decisions. Specifically, some factors may affect the judge's decision, such as the judge's mood and the fatigue of the judge on the day.[672] If the judicial trial is conducted by an algorithm, the interference of these factors is reduced and as such, judicial decisions may appear more objective.[673] However, the use of AI has brought about new forms of bias and discrimination that must be addressed.[674] Bias caused by AI may be reflected within the bias of the input data, which means the input data may inherently have biases that people already have.[675] In addition, some bias may also occur when applying

[664] Sourdin (n 636) 1133.
[665] Ibid.
[666] John Searle, 'Can Computers Think?' in David J Chalmers (ed), *Philosophy of Mind: Classical and Contemporary Readings* (OUP 2002) 669, 671.
[667] Nowotko (n 660) 2224.
[668] Ibid.
[669] Abenaa Owusu-Bempah, 'The Interpretation and Application of the Right to Effective Participation' (2018) 22 The International Journal of Evidence & Proof 321.
[670] Criminal Procedure Rules 2020, Part 18.1(e)(i).
[671] Martin Shapiro, *Courts: A Comparative and Political Analysis* (University of Chicago Press 1986) 2.
[672] Sourdin (n 636) 1129.
[673] Chelsea Barabas and others, *Interventions Over Predictions: Reframing the Ethical Debate for Actuarial Risk Assessment* (PMLR 2018).
[674] Markus Dirk Dubber, Frank Pasquale and Sunit Das, *The Oxford Handbook of Ethics of AI* (OUP 2020).
[675] John Zeleznikow, 'The Benefits and Dangers of Using Machine Learning to Support Making Legal Predictions' (2023) 13 Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery 1.

the algorithm.[676] A notable example is that programmers may unintentionally amplify these biases in the process of manipulating AI, leading to more biases.[677] This AI-induced bias could boost nationalism and trigger human rights violations and even allow AI to evolve into a political tool.[678] For instance, some research suggests that when algorithms are utilised for risk assessment in the criminal justice system, they may incorrectly label black defendants as criminals and misclassify them.[679] Accordingly, this may result in AI tools predicting that black defendants are twice as likely to face a high risk for rearrest as white defendants.[680] Thus, while bias can be amplified by algorithms, it is hard to detect, which can lead to inequality and violations of rights.

Moreover, in *State of Wisconsin v Loomis,*[681] the judiciary applied an algorithmic risk assessment tool to the sentencing proceeding, which assessed Loomis as having a high risk of recidivism.[682] In appealing the severity of the sentence, Loomis argued that the AI tool inappropriately used a gender assessment and violated his right to an individualised sentence.[683] Therefore, if AI is used for judicial decisions, any flaws or bias within AI may affect the fairness of the trial, cause moral crises and rights violations.

The use of AI by judges for judicial decisions may lead to non-transparency in the adjudication process and outcome, and affect judicial openness and fair trial. First, the nature of algorithms is a black box, which means that while there may be traces of inputs and outputs. It is difficult to figure out exactly how the algorithm performs its analysis, even for the person who designed it.[684] The effectiveness of the algorithm is difficult to test, and even if people wish to question it, it is less likely to verify it. This does not satisfy the common law requirement that decision-makers need to disclose their reasoning.[685] While procedural justice states that those affected have the right to understand the decision, if algorithms are applied in judicial practice, it is difficult for the parties and society to observe the algorithms, and understand the impact of the algorithmic decisions.[686] Consequently, this could deny people's right to understand the decision.

Furthermore, open justice requires that judicial procedures be subject to public scrutiny to strengthen accountability.[687] The application of AI is not always transparent and can be difficult to explain, thereby undermining open justice. If courts use AI to make decisions, it needs to be testable and questionable,

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[676] Zeleznikow (n 675).
[677] Sourdin (n 636) 1129.
[678] Mitch Smith, 'In Wisconsin, a Backlash Against Using Data to Foretell Defendants' Futures' (2016) *New York Times* <https://www.nytimes.com/2016/06/23/us/backlash-in-wisconsin-against-using-data-to-foretell-defendants-futures.html> accessed 21 July 2024.
[679] Laurel Eckhouse and others, 'Layers of Bias: A Unified Approach for Understanding Problems with Risk Assessment' (2019) 46 Criminal Justice and Behavior 185.
[680] Ibid.
[681] 881 N.W.2d 749 (Wis. 2016)
[682] McKay (n 649) 31.
[683] Carlson (n 648).
[684] McKay (n 649) 32.
[685] Ibid.
[686] Danielle Keats Citron and Frank Pasquale, 'The Scored Society: Due Process for Automated Predictions' (2014) 89 Wash L Rev 1.
[687] Judith Resnik, 'The Contingency of Courts: Changing the Experiences and Logics of Publics' Role in Court-Based ADR' (2015) 15 Nevada Law Journal 951.

otherwise it may lead to shirking of responsibility and inequality.[688]

Moreover, for companies that develop algorithmic tools, the input and analysis process of the algorithm may involve commercial secrets and intellectual property rights, which makes it difficult for the company to disclose them to the public.[689] This makes the application of AI in the judicial system more unpredictable and less transparent, which is contrary to judicial justice. Some scholars are even more reluctant about using AI to make judicial decisions.[690] They argue that while the judicial system is a fair, transparent system that imprisons and monitors lawbreakers, algorithmic tools designed by private companies may infringe the public duties of the judiciary and pose a threat to judicial independence.[691] Thus, because AI is difficult to explain and not transparent, its use in judicial decisions should be discouraged.

2.2.5 Conclusion

Overall, although the application of AI in law has a very broad prospect, it also triggers some concerns when it comes to AI in judicial decision-making, especially as some laws restrict the use of AI to make decisions. The characteristics of AI may limit its use in judicial decisions, as well as the moral and rights disputes caused by AI, as discussed above. People should be aware of the problems and drawbacks that may arise from using AI in legal decision-making, and fully consider and analyse the impact of AI. Otherwise, AI may be less likely to be an appropriate tool to benefit judicial practice and the use of AI could be detrimental to judicial efficiency.

2.3. To what extent could AI be used for different types of non-judicial decision-making?

By Tereza Radomirova

AI is advancing rapidly in every sector and area of life. It presents many opportunities, but also challenges that need to be addressed. Therefore, any application of AI needs to be accompanied by a risk assessment. While judicial decision-making is a more controversial area for AI integration, it will be seen that AI is already widely integrated into non-judicial decision-making, especially in the private sector. Big companies welcome AI decision-making as it is cost-effective and increases the speed of processes. On the other hand, lack of supervision over the integration of AI in decision-making can result in inaccurate outcomes and bias. Consequently, the discussion will first look at AI decision-making in different sectors followed by a cost-benefit analysis of the use of AI in non-judicial decision-making. AI decision-making tools have been called a range of terms, including 'expert systems, knowledge-based systems, intelligent decision support systems, intelligent software agent systems,

[688] Mireille Hildebrandt, 'Law as Computation in the Era of Artificial Legal Intelligence: Speaking Law to the Power of Statistics' (2018) 68 University of Toronto Law Journal 12.
[689] Stephen D Hart, Christine Michie and David J Cooke, 'Precision of Actuarial Risk Assessment Instruments: Evaluating the 'Margins of Error' of Group v. Individual Predictions of Violence' (2007) 190 The British Journal of Psychiatry 60.
[690] McKay (n 649) 35.
[691] Ibid.

intelligent executive systems'.[692] This shows the evolution of this area. This section will illustrate that AI is increasingly incorporated into non-judicial decision-making although concerns remain.

2.3.1.1. Statistics

Research shows that 85% of business executives have decision stress.[693] This is combined with an increasing volume of decisions.[694] Consequently, this makes for an ample opportunity for AI to be integrated into decision-making in companies. Inability to manage workload and provide solutions to emerging issues in the company can lead to losses of profit and clients. This is especially so considering the cut-throat competition in many sectors. Therefore, it should come as no surprise that 40% of CEOs incorporate generative AI into their decision-making.[695] While this is noteworthy, there remain uncertainties surrounding the reliability of generative AI, such as ChatGPT, Gemini, and Llama. On the other hand, the fact that it is only 40% signifies that AI is integrated in a piecemeal way, which reflects the need for more transparency in its work as well as the elimination of the most common risks associated with it.

2.3.1.2. AI in Decision-making

The particular AI technology, which is utilised for AI decision-making includes machine learning, natural language processing, expert systems, and computer vision.[696] AI decision-making tools include virtual assistants, data analytics, virtual and augmented reality, process discovery, and business intelligence.[697] These can help individuals and businesses to reduce the time they spend on processes such as research and development, data forecasts, and customer relations, amongst others. For example, pharmaceutical companies are well-known for their long research and development stage in the production of a new drug. AI can help by automating processes, processing large amounts of data, providing insights, and largely reducing the resources and overall time spent on this stage.[698]

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[692] Yanqing Duan, John S. Edwards and Yogesh K Dwivedi, 'Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda' (2019) 48 International Journal of Information Management 63, 68.
[693] Mark Purdy and A. Mark Williams, 'How AI Can Help Leaders Make Better Decisions Under Pressure' (Harvard Business Review, 26 October 2023) <https://hbr.org/2023/10/how-ai-can-help-leaders-make-better-decisions-under-pressure> accessed 18 July 2024.
[694] Ibid.
[695] Philip Meissner and Yusuke Narita, 'Artificial intelligence will transform decision-making. Here's how' (World Economic Forum, 27 September 2023) <https://www.weforum.org/agenda/2023/09/how-artificial-intelligence-will-transform-decision-making/> accessed 18 July 2024.
[696] Akash Takyar, 'AI in decision making: Use cases, benefits, applications, technologies, implementation and development' (LeewayHertz) <https://www.leewayhertz.com/ai-in-decision-making/> accessed 19 July 2024.
[697] Purdy and Williams (n 693).
[698] Debleena Paul, Gaurav Sanap, Snehal Shenoy, Dnyaneshwar Kalyane, Kiran Kalia, and Rakesh K. Tekade, 'Artificial intelligence in drug discovery and development' (2021) 26(1) Drug Discov Today 80 < https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7577280/> accessed 18 July 2024; Gisbert Schneider, 'Automating drug discovery' (2018) 17 Nature Reviews Drug Discovery 97 < https://www.nature.com/articles/nrd.2017.232> accessed 18 July 2024.

For example, the Absci Corporation reported using Generative AI for the creation and validation of de novo antibodies in silico, thus saving around four years on this task as it normally takes around six years to do it.[699] Similarly, Insilico Medicine used AI to discover and design a new drug.[700] AI, such as Antidote, is also used to find suitable patients for clinical trials.[701]

Finally, AI has been used for the discovery of molecules that can be used for new drugs.[702] Increasing automation combined with the use of fewer resources can also lower the price of important drugs. This is arguably groundbreaking considering the existing debates on access to medicine and health inequalities.[703] Nonetheless, this is just one hypothetical example – as will be seen, AI decision-making is applied in numerous areas. AI can be subdivided into three categories depending on its purpose: assisted intelligence, augmented intelligence, and automation intelligence.[704] Assisted intelligence is the automation of basic tasks, such as machines, which are part of assembly lines.[705] Augmented intelligence is based on machine learning.[706] Automation intelligence includes the full automation of all tasks, not just the basic ones.[707] Examples of automation intelligence include self-driving cars and autonomous robots.[708]

Finally, in terms of the extent to which AI is integrated into the decision-making process, its purpose can be categorised as decision support, decision augmentation, and decision automation.[709] Decision support is the lowest level of AI integration, whereby AI does not replace the human input into the decision-making process, only supports it.[710] At the other end of the spectrum, decision automation does fully automate the decision-making process.[711] Decision augmentation is in the middle of the

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[699] Absci, 'Absci First to Create and Validate De Novo Antibodies with Zero-Shot Generative AI' (*Absci*, 1 October 2023) <https://investors.absci.com/news-releases/news-release-details/absci-first-create-and-validate-de-novo-antibodies-zero-shot> accessed on 4 September 2024.
[700] 'Insilico Gains FDA's First Orphan Drug Designation for AI Candidate' (*Genetic Engineering and Biotechnology News*, 10 February 2023) < https://www.genengnews.com/news/insilico-gains-fdas-first-orphan-drug-designation-for-ai-candidate/> accessed 4 September 2024.
[701] Guadalupe Hayes-Mota, 'AI Is Rapidly Transforming Drug Discovery' (*Forbes*, 29 February 2024) <https://www.forbes.com/councils/forbesbusinesscouncil/2024/02/29/ai-is-rapidly-transforming-drug-discovery/> accessed 4 September 2024.
[702] Margaret Ayers, Madura Jayatunga, John Goldader, and Chris Meier, 'Adopting AI in Drug Discovery' (*BCG*, 29 March 2022) < https://www.bcg.com/publications/2022/adopting-ai-in-pharmaceutical-discovery> accessed 5 September 2024; Frank Noé, Alexandre Tkatchenko, Klaus-Robert Müller, and Cecilia Clementi, 'Machine Learning for Molecular Simulation' (2020) 71 Annual Review of Physical Chemistry 361 < https://www.annualreviews.org/content/journals/10.1146/annurev-physchem-042018-052331> accessed 4 September 2024.
[703] Matthew Chun, 'How Artificial Intelligence is Revolutionizing Drug Discovery' (*Bill of Health*, 20 March 2023) <https://blog.petrieflom.law.harvard.edu/2023/03/20/how-artificial-intelligence-is-revolutionizing-drug-discovery/> accessed on 4 September 2024.
[704] Olivia Barber, 'How artificial intelligence will change decision making' (*InData Labs*, 4 June 2024) <https://indatalabs.com/blog/artificial-intelligence-decision-making#:~:text=AI%20automated%20decision%20making%20allows,work%20relevant%20to%20their%20field.> accessed 18 July 2024.
[705] Ibid.
[706] Ibid.
[707] Ibid.
[708] Ibid.
[709] Ibid.
[710] Ibid.
[711] Ibid.

spectrum between partial and full automation.[712] Therefore, AI can be used to both support human decision-making or completely automate the decision-making process, thus removing the need for human input, depending on the extent to which it is incorporated into the decision-making process.

2.3.1.3. Applications of AI Decision-making

When talking about AI in non-judicial decision-making, it is good to start with a business perspective as these tools are most often employed in the private sector. The three main types of business decision-making are strategic decisions, tactical decisions, and operational decisions.[713] Strategic decisions are normally made by senior management because they concern the company's future plans and goals.[714]

By way of contrast, tactical decisions relate to the current plans, projects, and tasks at hand. Operational decisions are probably the middle ground between the other two types of decisions as they relate to the daily operation of the company and are therefore conducted by figures in the middle of the company hierarchy.[715] Ultimately, all these decisions ensure the prosperity of the business, its future plans, and partnerships.[716] Therefore, decision-making is crucial for the business' success. AI can be used in business decision-making in the following ways: identifying problems, data processing and analysis, finding and assessing alternative solutions, finding optimum solutions, and automating problem-solving.[717] For example, AI can be used in ad campaigns, which is part of strategic decision-making.[718] More generally, but on a similar note, AI is used in decision-making for planning and forecasts, automation of decision-making, risk management, and problem-solving.[719] These signify the main areas where AI can make a big difference – in processing large amounts of data beyond human capabilities and being able to provide synthesised solutions and alternatives. This can arguably bring much clarity into the decision-making process and importantly, speed it up.

Industries where AI decision-making is used include healthcare, finance, customer relationship management, supply chain management, cybersecurity, marketing, and manufacturing.[720] In healthcare, AI decision-making tools are used to provide personalised treatment plans.[721] This arguably enhances the service each patient receives. Furthermore, AI can be used when allocating healthcare resources, choosing locations for hospitals, diagnosing, and analysing medical data and images.[722] Here, the use of AI is likely to reduce the time spent on each task as well as lower logistics costs. Furthermore, it can provide valuable insights into important matters, such as choosing where to situate a medical facility,

[712] Barber (n 704).
[713] Takyar (n 696).
[714] Ibid.
[715] Ibid.
[716] Ibid.
[717] Ibid..
[718] Ibid.
[719] Ibid.
[720] Ibid.
[721] Ibid.
[722] Ibid.

which can then aid further human decision-making and planning. In cybersecurity, AI can be very useful for detecting threats in a timely manner.[723]

In finance, AI decision-making is used for the discovery of market trends, the analysis and management of risk, the analysis of investment strategies, and overall portfolio management.[724] AI is used in decision-making on whether loans should be approved, such as in the example of AntFinancial.[725] AI tools are clearly beneficial here as they can provide more accurate outcomes quicker. However, it is also important to note that AI can present serious risks, especially in the financial services industry. For example, the Flash Crash from 2010 illustrated how AI can result in inaccurate outcomes and seriously disrupt markets due to their high volatility.[726] That was a case of high-frequency trading gone wrong.[727] Another example is the case of Kevin Johnson.[728] AI credit scoring ranked him as unreliable due to the fact that the clients of the store, where he was shopping, had low creditworthiness.[729] The possibility that AI will use such inaccurate connections to provide decisions is seriously concerning and needs to be investigated before AI is widely incorporated.

AI is used for decision-making both in the public and private sectors. In the public sector, some governments use supervised learning in crime and terrorism prevention.[730] Companies use AI in decision-making for tracking and prediction.[731] For example, Unilever used AI tools to monitor and prevent potential deforestation resulting from its supply of palm oil.[732] Moreover, seaports use AI tools, such as PortXchange Synchronizer, to organise and manage the activity at the seaport.[733] AI can be useful in these cases, because it can provide highly accurate calculations, thus preventing the possibility of human error.[734]

Another application of AI in decision-making is for training employees in a virtual reality.[735] For instance, Verizon uses virtual reality experience to train customer service agents.[736] Similar AI tools are also used to train police officers.[737] This is another innovative use of AI in decision-making, which again highlights the advantages of AI as opposed to traditional tools – only AI tools can provide such a virtual reality experience, which can be done from anywhere and can better train employees as they

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[723] Takyar (n 696).
[724] Ibid.
[725] Meissner and Narita (n 695).
[726] Jill Treanor, 'The 2010 'flash crash': how it unfolded' *(the Guardian*, 22 April 2015) <https://www.theguardian.com/business/2015/apr/22/2010-flash-crash-new-york-stock-exchange-unfolded> accessed 19 July 2024.
[727] Ibid.
[728] Tracy Alloway, 'Big data: Credit where credit's due' (*Financial Times*, 4 February 2015) <https://www.ft.com/content/7933792e-a2e6-11e4-9c06-00144feab7de> accessed 19 July 2024.
[729] Ibid.
[730] Meissner and Narita (n 695).
[731] Purdy and Williams (n 693).
[732] Ibid.
[733] Ibid.
[734] Ibid.
[735] Ibid.
[736] Ibid.
[737] Ibid.

would be placed in a very realistic setting, thus experiencing potential case scenarios. By way of contrast, the traditional employee training usually consists of reading manuals, which is unlikely to provide the employee with the same level of understanding and preparation. AI-based virtual assistants are also utilised in decision-making.[738] For example, GitHub Copilot, which is based on generative AI, assists software developers in coding.[739] Finally, BigTech companies, such as Facebook and Microsoft, use AI in content management.[740]

Ultimately, the extent to which AI will be incorporated in decision-making processes depends on the level of trust in it, the access to this new technology and the scale and timeframe of AI's integration in decision-making processes.[741] It is likely that human decision-makers will prefer to use AI for decision support as opposed to decision automation.[742] Furthermore, the extent to which AI is used for decision-making can also depend on personal values and cultural considerations.[743]

2.3.1.4. Cost-benefit Analysis

Before bringing this discussion to an end, the advantages and disadvantages of using AI in non-judicial decision-making will be briefly weighed. The benefits of AI decision-making were largely illustrated above already. These include quicker and more accurate outcomes at a lower cost. For example, by incorporating AI decision-making in the banking process, banks can benefit from lower operating costs and credit risk as well as improve their overall relationship with customers.[744]

Risks of using AI tools in decision-making include the possibility of bias, unethical outcomes, and data accuracy.[745] Consequently, depending on the area and particular application in decision-making, AI may or may not be the best tool for decision-making. For example, while AI can help with data-based decision-making as it can process and analyse large volumes of data, it can be less helpful with human-centric decisions, such as human resources and credit allocation where it can be biased against candidates representing certain groups. Furthermore, AI can considerably streamline and shorten drug production processes, but it can also cause volatility if widely incorporated into the financial services sector. This can be addressed by using AI for specific purposes and areas of decision-making, coordinating the use of AI tools with employees' level of experience, and ensuring that there is no employee 'deskilling' as a result of the increasing use of AI tools and investment in prompt engineering.[746] In this way, AI tools can be better tailored to their specific application and characteristics

[738] Purdy and Williams (n 693).
[739] Ibid.
[740] Meissner and Narita (n 695).
[741] Ibid.
[742] Duan, Edwards and Dwivedi (n 692) 70.
[743] Ibid.
[744] Akshat Agarwal, Charu Singhal and Renny Thomas, 'AI-powered decision making for the bank of the future' (*McKinsey & Company*, 23 March 2021) <https://www.mckinsey.com/industries/financial-services/our-insights/ai-powered-decision-making-for-the-bank-of-the-future> accessed 18 July 2024.
[745] Purdy and Williams (n 693).
[746] Ibid.

of the type of decision-making. On the risk of bias, it must be noted that AI can also be helpful in reducing bias. For instance, AI can be useful in identifying bias in decision-making, such as sunflower bias and confirmation bias.[747]

While AI may not be able to replace human decision-making fully, it can be a useful aid to managers when making decisions. It is also important to be able to establish how AI reached an outcome so that its validity can be assessed and therefore, the extent to which the outcome should be taken into account.

2.3.1.5. Conclusion

AI can be used in non-judicial decision-making to a large extent and has already been incorporated in many sectors. At the same time, it must be noted that its scale of integration is moderate as there remain considerable risks with serious consequences surrounding the use of AI in decision-making. Nonetheless, it remains the case that AI decision-making is revolutionising industries such as the healthcare industry and the financial services industry. Furthermore, it has been employed in innovative ways in tracking and prediction as well as for training workforces. AI is mostly used for the processing and analysis of large and complex data, forecasting, risk management, and automation of basic tasks. It can also be seen that human decision-makers tend to prefer AI as a support tool rather than an autonomous decision-maker. This is correlated with the level of trust in AI, its margin of error, human decision-makers' personal views as well as cultural differences. Therefore, while AI non-judicial decision-making is definitely a rapidly developing area, there remains uncertainty and areas for improvement.

2.4. To what extent would AI decision making increase or decrease concerns of bias?

By Georgia Twomey

Decision making is a cognitive process which results in the selection of a belief or course of action among several possible alternative options.[748] However, intertwined in this process is an unconscious third party influencing and distorting the human ability to make a sound decision - commonly referred to as bias. According to the Harvard TH Chan School of Public Health, "the human brain is hard-wired to make quick decisions that draw on a variety of assumptions and experiences without us even knowing it is doing so, meaning that our unconscious predispositions can influence our decision-making".[749] As law is a human lead system, the idea that legal decision making is free from bias is fundamentally inconsistent with the realities of human cognition. The topic of legal decision making and its relationship with bias is neither new or underdeveloped, with legal theorists, such as Jerome

[747] Yuval Atsmon, 'Artificial intelligence in strategy' (*McKinsey & Company*, 11 January 2023) <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/artificial-intelligence-in-strategy> accessed 18 July 2024.
[748] Herbert Alexander Simon, *The New Science of Management Decision* (First published 1960, Prentice-Hall 1977).
[749] Conor Kennedy, 'Eye of the beholder' (*Law Society Gazette Ireland,* 12 October 2023) <https://www.lawsociety.ie/gazette/in-depth/eye-of-the-beholder> accessed 19 June 2024.

Frank, contesting that as a matter of human psychology, judges, as well as all human beings have biases and prejudices, whether conscious or unconscious. However, the proliferation of advanced digital technologies such as artificial intelligence, hereinafter referred to as AI, has commenced a new level of discussion surrounding bias and decision making.

AI is a technology capable of performing tasks that would otherwise require human intelligence or intervention, such as digital assistants, chatbots and algorithmic management. As a consequence of AI's promise of increased productivity, in 2024 AI is leading the trend of implementing emerging technologies to give your firm a competitive edge. As AI increasingly finds its way into the legal sphere, the prospect of it being used to assist decisions, or make decisions certainly is on the horizon for the future of legal practice. It is a reasonable assumption that the removal of the human element in legal decision making would consequently decrease the risk of bias influencing the outcome.

However, in light of the current capabilities of AI, its presence in decision making does not eliminate the human biases that skewed the original training data or AI algorithm. Martineau effectively illustrated this phenomenon by likening AI models to a sponge that "absorbs the biases of society embedded in the mountains of data they have been trained on".[750] This sponge-like quality of AI is well documented, for instance, Amazon built an AI-based method of recruiting new talent for their company. However, the data in which the AI models were trained on were collected over a 10-year period where the majority of candidates were men. Consequently, the AI model significantly prioritized male resumes.[751] Incidents of AI bias raises significant issues that are contradictory to the notion of equality before the law as set out in Article 7 of the Universal Declaration of Human Rights, which consequently hinders AIs ability to effectively aid legal decision making.

However, as it has been determined that biases in AI technology derive from human input, it raises the question as to whether the risk of bias in AI decision making is of equal risk of bias in human decision making. Decisions made by humans are often difficult to decipher, as it is common for people to not understand or be aware of the factors that influenced their thinking, and the unconscious biases that may be present.[752] Identifying this unconscious bias, and correcting it, is a difficult task that requires examination from others, and efforts to 'rewire' your patterns of thinking. On this basis, AI has the potential to tackle this issue, as any biases that are presented can be interrogated and rectified through a number of different methods.

As AI is documented to leech the stereotypes from the data it is trained from, there are now techniques developed to force the model to ignore attributes such as race, gender and age. An example of one of these techniques is FairReprogram which effectively retains the AI model to forget group attributes:

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[750] Kim Martineau, 'Debugging Foundation Models for Bias' (*IBM Research*, 28 November 2022) < https://research.ibm.com/blog/debugging-AI-bias> accessed 19 June 2024.
[751] Jeffrey Dastin, 'Amazon scraps secret AI recruiting tool that showed bias against women' (*Reuters*, 11 October 2018) < https://www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G> accessed 19 June 2024.
[752] Kleinberg, Jon and Ludwig, Jens and Mullainathan, Sendhil and Sunstein, Cass R., 'Discrimination in the Age of Algorithms' (*SSRN*, 5 February 2019) <https://ssrn.com/abstract=3329669> accessed 19 June 2024.

"Our method primes the model to ignore group attributes and make less biased decisions without the expense of having to retrain the model."[753]According to the researchers' paper presented at NeurIPS, FairReprogram illustrated a 10.5% and 36.5% fairness improvement.[754] Therefore in order to reduce the concerns of bias in AI lead decision making, implementing an AI governance system to direct, manage and monitor the model through creating a framework to guide the responsible use of AI technology.

However, in order for these AI governance systems to minimise bias, the concept of fairness must be explored and defined to create AI models in its image. Computer scientist and professor at Princeton University, Arvind Narayanan, identified at least 21 definitions of fairness.[755] However, a number of researchers have demonstrated that an AI model cannot conform to more than a few group fairness metrics simultaneously.[756] Therefore, as expected, there is disagreement amongst experts on what fairness is and under what definition should AI models be created in its image: "As a result of these complexities, crafting a single, universal definition of fairness or a metric to measure it will probably never be possible. Instead, different metrics and standards will likely be required, depending on the use case and circumstances".[757]

Although the removal of bias in AI decision-making is a realistic goal, it may as a result remove an element of nuance and consideration of the societal factors which are operative in the circumstances of the decision. Therefore, it must be considered if the idea of a black and white, cut and dry, system of making decisions is truly of use to the legal profession, or is it a cold and calculating ideal that, in actuality, does not positively serve its function. If a bias-free AI decision making model was developed, it could facilitate the legal system by reducing costs in court services or handling minor judicial proceedings for minor offences.[758]

Furthermore, its implementation into legal practice could significantly reduce the risk of human and clerical errors, and, in the best circumstances, provide impartial judgments. However, as observed by Morigiane Noel, the consequence of "repetitive automated decisions from algorithms could lead to a lack of creativity in the interpretation of the law, which could slow down or halt development in the legal system".[759] The law is both the protector of the old, and a pioneer of the new. Although it is

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[753] Zhang, Guanhua et al., *Thirty-sixth Conference on Neural Information Processing: Fairness Reprogramming* (2022) < http://arxiv.org/pdf/2209.10222> accessed 19th June 2024.
[754] Ibid.
[755] Professor Arvind Narayanan, 'Tutorial: 21 fairness definitions and their politics' (*Youtube*, 1 March 2018) <https://www.youtube.com/watch?v=jIXIuYdnyyk> accessed 19 June 2024.
[756] Kleinberg, Mullainathan and Raghavan, 'Inherent Tradeoffs in the Fair Determination of Risk Scores' (*Arxiv.org,* 19 September 2016) <https://arxiv.org/abs/1609.05807> accessed 19 June 2024.
[757] Jake Silberg and James Manyika, 'Tackling Bias in Artifical Intelligence (and in Humans)' (*McKinsey*, 6 June 2019) <https://www.mckinsey.com/featured-insights/artificial-intelligence/tackling-bias-in-artificial-intelligence-and-in-humans> accessed 19 June 2024.
[758] Ibid.
[759] Morigiane Noel, 'AI is already being used in the legal system - we need to pay more attention to how we use it' (*Trinity College Dublin*, 23 May 2023) <https://www.tcd.ie/news_events/articles/2023/ai-is-already-being-used-in-the-legal-system---we-need-to-pay-more-attention-to-how-we-use-it/> accessed 19 June 2023.

essential for a legal system and the behaviour of the officials it is composed of to be consistent, there also must be scope for progress. As Noel continues to state, "In human reasoning, intelligence does not represent a state of perfection or infallible logic…errors play an important role in human behaviour. They allow us to evolve towards concrete solutions that help us improve what we do".[760]

Therefore, a decision-making tool stripped of human fault may be a quixotic notion, as the legal profession and 'humanness' is deeply intertwined. Yet, in light of allowing scope for progress, AI decision-making in collaboration with human decision making could greatly assist legal officials identify biases and prejudices in their decisions. However, in order for this threshold of innovation to be crossed, the removal of bias from AI models needs to be completed, as an imperfect AI system coupled with an imperfect judge could further perpetuate prejudice rather than illuminating them.

In conclusion, whether AI could decrease bias in decision making is dependent on its development, as well as its implementation. In respect of development, if AI decision making is to find its way into the courtrooms, special attention and care must be dedicated to the model from its conception. Approaches that enforce fairness constraints on AI must be perfected to remove any bias emerging from the data it is trained on. This can effectively and responsibly be monitored through an AI governance system. Moreover, regarding implementation, AI should not be entrusted to make legal decisions unmonitored and without human input. In lieu of this, the harmonious partnership between AI and humans in decision making could be a beneficial addition to the legal profession in respect of eliminating bias, creating a perfect balance between the calculating logic of AI and the human capability of recognizing nuanced situations. However, whether this balance will be struck, and what AI's impact on the biases found in legal decision making will be, remains to be seen.

2.5. How could AI decision-making be supervised, accountable and challenged?

By Abhinav Tripathi and Polina Aleksandrova

The integration of artificial intelligence (AI) into legal practice is accelerating. This is transforming various aspects of the profession, from document review and legal research to predictive analytics and decision-making support. This shift promises significant efficiencies and new capabilities but also introduces complex challenges regarding the supervision, accountability, and contestability of AI-driven decisions. Ensuring that AI systems in the legal field are transparent and accountable is critical to maintaining trust and upholding justice. Effective mechanisms must be in place to supervise AI operations, hold developers and users accountable, and allow individuals to challenge AI decisions.

This chapter outlines a comprehensible framework for responsible AI usage in legal practice through ensuring transparency in AI algorithms, implementation of regular audits and monitoring, human oversight in decision-making processes, and the establishment of robust mechanisms to challenge AI decisions.

[760] Morigiane (n 759).

2.5.2. Accountability in AI Decision-Making

2.5.2.1 Responsibility in AI Governance

Accountability refers to the clear acknowledgment of responsibility and answerability for actions, decisions, products, and policies.[761] There are numerous proposals for closing AI's accountability gap. Most of these proposals focus on clearly defining responsibility for each stage of an AI system's life cycle, as well as ensuring auditability to facilitate transparency, and providing mechanisms for redressability of decisions discussed later.[762]

One key strategy for achieving responsibility in AI governance is the establishment of robust oversight mechanisms throughout the AI lifecycle. This begins with clearly defining roles and responsibilities for each phase, from design and development to deployment and procurement.[763]

Another critical element in this oversight mechanism is the establishment of independent regulatory bodies and ombudsmen to oversee and investigate complaints about AI systems. Zarsky discusses the role of these entities in ensuring that AI systems operate fairly and transparently.[764] He argues that independent oversight is essential to hold AI developers and users accountable for the decisions made by their systems. Regulatory bodies should have the authority to conduct investigations, mandate changes to AI systems, and impose sanctions where necessary.[765] This would help to ensure that AI systems are continuously monitored and held to high standards of fairness and accuracy.

Zarsky also emphasises the importance of these bodies being adequately resourced and truly independent to perform their functions effectively. In addition to regulatory oversight, ombudsman can play a valuable role in mediating disputes between individuals and organisations using AI.[766] Ombudsmen provide a neutral platform for resolving complaints, which can help to build trust in AI systems and ensure that the voices of affected individuals are heard. By offering an accessible and less adversarial means of challenging AI decisions, ombudsman can facilitate more equitable outcomes and enhance the overall accountability of AI systems.

2.5.2.2 Transparency in AI Algorithms

The transparency of AI algorithms is crucial for ensuring that their decision-making processes are understandable, interpretable, and accountable. This requirement is not merely a technical concern but

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[761] CIFAR, 'G7 Principles on Accountability in AI' (2020) <https://cifar.ca/wp-content/uploads/2020/11/g7-accountabilityinai.pdf> accessed 18 July 2024
[762] Boming Xia, Qinghua Lu, Liming Zhu, Sung Une Lee, Yue Liu, Zhenchang Xing, 'Towards a Responsible AI Metrics Catalogue: A Collection of Metrics for AI Accountability', CAIN 2024: IEEE/ACM 3rd International Conference on AI Engineering - Software Engineering for AI (ACM 2024).
[763] Ibid.
[764] Tal Z Zarsky, 'The Trouble with Algorithmic Decisions: An Analytic Road Map to Examine Efficiency and Fairness in Automated and Opaque Decision Making' (2016) 41 Science, Technology, & Human Values 118.
[765] Ibid.
[766] Ibid.

also a fundamental issue of trust and ethics. Doshi-Velez and Kim emphasise the necessity for developing interpretable machine learning models, especially for high-stakes applications such as healthcare and legal practice, where the implications of AI decisions can be profound.[767] They argue that interpretable models allow stakeholders to understand the rationale behind AI decisions, facilitating trust and enabling the identification and correction of errors. Without transparency, AI systems can become "black boxes", where the decision-making process is opaque, making it challenging to ensure fairness and accountability. Transparency in AI aligns with broader ethical and legal frameworks. Mittelstadt et al. assert that transparency is a cornerstone of ethical AI, essential for building public trust and ensuring that AI systems operate within legal and moral boundaries.[768]

In legal contexts, this transparency is imperative, as legal practitioners must explain AI-based decisions to clients and the courts. This ensures that justice is not only done but seen to be done, maintaining the integrity of the legal system. Furthermore, transparency supports the right to explanation, a concept increasingly recognized in data protection laws such as the General Data Protection Regulation (GDPR). Wachter, Mittelstadt, and Floridi argue that while the GDPR does not explicitly mandate a right to explanation, it implies the need for transparency in automated decision-making.[769] This right enables individuals to understand and challenge decisions that affect them, providing a critical check on AI power.

2.5.2.3 Supervision Through Regular Audits and Monitoring

Regular audits and monitoring are vital to ensure that AI systems function as intended and to detect biases or errors. Raji and Buolamwini highlight the importance of actionable auditing, demonstrating that public disclosure of biassed performance results can drive improvements and accountability in commercial AI products.[770] They argue that regular audits can uncover and address biases, ensuring that AI systems operate fairly and equitably. In the legal sector, biassed AI systems could perpetuate or exacerbate existing inequalities, making regular audits essential for justice. Auditing involves scrutinising AI outputs for consistency, accuracy, and fairness and examining the data used to train these systems for inherent biases. Binns discusses that fairness in machine learning is not just about outcomes but also about the processes leading to those outcomes.[771]

Regular audits should therefore include comprehensive reviews of both inputs and outputs to ensure that AI systems uphold principles of fairness and justice. Moreover, the findings from audits should be made publicly available to promote transparency and accountability. Public accountability can pressure

[767] Finale Doshi-Velez and Been Kim, 'Towards a Rigorous Science of Interpretable Machine Learning' (*ArXiv*, 2017) <https://arxiv.org/abs/1702.08608> accessed 18 July 2024
[768] Brent D Mittelstadt et al., 'The Ethics of Algorithms: Mapping the Debate' (2016) 3 Big Data & Society.
[769] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76.
[770] Inioluwa Deborah Raji and Joy Buolamwini, 'Actionable Auditing: Investigating the Impact of Publicly Naming Biased Performance Results of Commercial AI Products' (2019) Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society.
[771] Reuben Binns, 'Fairness in Machine Learning: Lessons from Political Philosophy' (2018) Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency.

AI developers and users to address biases and improve system performance. The proactive auditing approach proposed by Raji and Buolamwini underscores the role of transparency in audits, which can foster a culture of continuous improvement and ethical AI development.

2.5.2.4. Human-in-the-Loop Systems

Ensuring human oversight in critical decision-making processes is essential for maintaining control over AI and ensuring that decisions align with human values and ethical standards. Brundage et al. advocate for human-in-the-loop (HITL) systems, where human judgement complements and oversees AI decision-making[772] They argue that HITL systems are crucial for maintaining accountability and preventing erroneous or biassed AI decisions. Human oversight is particularly important in legal practice, where the nuances of individual cases often require human empathy and contextual understanding that AI lacks. HITL systems provide a safeguard against erroneous or biassed AI decisions, ensuring that humans remain accountable for final outcomes.

This aligns with the broader legal principle of accountability, which requires that those making decisions can be held responsible for their actions. Moreover, integrating human oversight into AI decision-making processes ensures that AI remains a tool to aid human judgement rather than replacing it. Floridi and Cowls argue that the ethical use of AI requires that it enhances human capacities without undermining human agency.[773] HITL systems embody this principle, ensuring that AI supports rather than supplants human decision-making in the legal domain. Additionally, HITL systems can enhance the interpretability and transparency of AI decisions. When humans are involved in the decision-making loop, they can provide explanations and justifications for decisions, which can be crucial for legal accountability and for individuals seeking to understand decisions that affect them. This human element is indispensable for ensuring that AI systems are used responsibly and ethically.

2.5.3. Challenging AI Decision-Making

2.5.3.1 Right to Explanation

The right to explanation is pivotal in the context of AI decision-making, providing individuals with the ability to understand and challenge decisions made by automated systems. Wachter, Mittelstadt, and Floridi argue that the General Data Protection Regulation (GDPR) implies a need for transparency but does not explicitly guarantee a right to explanation.[774] This lack of clarity can lead to significant accountability issues, leaving affected individuals without sufficient means to challenge or understand AI decisions. To effectively implement a right to explanation, AI systems must be designed with

[772] Miles Brundage and others, 'Toward Trustworthy AI Development: Mechanisms for Supporting Verifiable Claims' (*arXiv*, 2020) <https://arxiv.org/abs/2004.07213> accessed 18 July 2024.
[773] Luciano Floridi and Josh Cowls, 'A Unified Framework of Five Principles for AI in Society' (2019) 28 Harvard Data Science Review.
[774] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76.

interpretability in mind. Doshi-Velez and Kim highlight that interpretability in AI is not only about understanding how decisions are made but also about ensuring that explanations are accessible to non-experts.[775] This means that AI developers need to focus on creating models that are not just accurate but also interpretable, allowing affected individuals to comprehend the logic behind AI decisions.

Moreover, the right to explanation must be supported by legal frameworks that mandate transparency and accountability in AI decision-making. Pasquale suggests that without such frameworks, there is a risk of AI systems perpetuating biases and injustices without adequate oversight.[776] He argues for the development of regulations that require AI systems to provide clear and comprehensible explanations for their decisions, enabling individuals to challenge these decisions effectively.

2.5.3.2 Appeals and Review Mechanisms

Establishing formal mechanisms for appealing and reviewing AI decisions is essential to ensure fairness and accountability in AI decision-making. Edwards and Veale emphasise that while the right to explanation is crucial, it is not sufficient on its own.[777] There must be robust frameworks in place that allow individuals to appeal and review AI decisions comprehensively.

One approach to implementing effective appeals mechanisms is through the use of hybrid systems that combine automated and human review processes. This can help balance the need for efficiency with the requirement for thorough examination of AI decisions. For example, automated systems can initially filter decisions for review, while human reviewers can provide a more in-depth analysis where necessary.[778] Furthermore, appeals mechanisms should be accessible and user-friendly. Selbst and Barocas argue that individuals must have clear guidance on how to challenge AI decisions, including information on the appeals process and the criteria used for decision-making.[779] They suggest that transparency in the appeals process can help build trust in AI systems and ensure that individuals feel empowered to contest decisions that they believe to be unjust.

2.5.4. Conclusion

Ensuring that AI decision-making in legal practice is effectively supervised, accountable, and open to challenge requires a comprehensive and multifaceted approach. Key elements include transparency, regular audits, human oversight, clear governance structures, and robust mechanisms for challenging decisions.

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[775] Finale Doshi-Velez and Been Kim, 'Towards a Rigorous Science of Interpretable Machine Learning' (*ArXiv*, 2017) <https://arxiv.org/abs/1702.08608> accessed 18 July 2024.
[776] Frank Pasquale, 'The Black Box Society: The Secret Algorithms That Control Money and Information' (Harvard University Press 2015).
[777] Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a 'Right to an Explanation' Is Probably Not the Remedy You Are Looking For' (2017) 16 Duke Law & Technology Review 18.
[778] Ibid.
[779] Andrew Selbst and Solon Barocas, 'The Intuitive Appeal of Explainable Machines' (2018) 87 Fordham Law Review 1085.

Transparency allows stakeholders to understand AI decision-making processes, fostering trust and accountability. Regular audits and continuous monitoring maintain the accuracy and fairness of AI systems by detecting and addressing biases, promoting a culture of continuous improvement and accountability among developers and users.

Human oversight, through Human-in-the-Loop (HITL) systems, ensures that AI decisions align with human values and ethical norms. HITL systems integrate human judgement, preserving contextual understanding and preventing errors or biases in AI decisions.
Challenging AI decisions effectively requires robust mechanisms such as the right to explanation, appeals, and review processes are essential. These mechanisms empower individuals to contest unjust outcomes. Independent regulatory bodies and ombudsmen play a crucial role in overseeing AI systems, mediating disputes, investigating complaints, and enforcing compliance with ethical standards.

Combining all these elements will allow us to integrate AI into legal practice and build a system where AI is a trusted tool that supports justice and equitable decision-making, ultimately ensuring that those responsible for AI systems are held accountable for their actions and decisions.

2.6. How can AI be used to support judges in their work?

By Hanqiong Wu

In the era of big data, AI is still in the preliminary stages of development but has been slowly introduced into various jurisdictions. However, some courts and judges still lack a real understanding of how to use AI in the judicial system to improve the efficiency of the case. Therefore, it is necessary to make judicial institutions, court members and case stakeholders aware of the latest development of artificial intelligence technology, so that all parties can easily and quickly use AI, and prudently and carefully treat the legal risks in AI technology and use tools to promote efficiency and justice in the court system.

The application of AI in judicial work has provided significant enhancements in several areas such as legal research, judicial decision-making, judgement preparation, and the overall fairness and efficiency of judicial proceedings. This paper explores the multiple applications of AI in judicial work, highlighting the potential of AI to simplify legal procedures, reduce bias, and improve access to justice services.

2.6.1. AI Support in Judicial Work

2.6.1.1 Enhancing Legal Research

AI has many applications in legal search work, which greatly provides the efficiency of judges and legal workers. First, by typing keywords into search engines, AI can help judges find relevant cases, laws, and

policies in a sea of digital documents. In this way, they can get the information they need more quickly and reduce the tedious manual search process.

In addition, AI functions on some legal search platforms are more intelligent. For example, these platforms can use natural language processing technology to learn the articles that legal workers are reading, identify relevant legal precedents and recommend them. LexisNexis, for example, has added "artificial intelligence capabilities" to its legal research platform, which can significantly improve the efficiency of legal search.[780] AustLII's NoteUp feature is also a good example, using automated technology to find additional documents related to the document currently being viewed, helping legal professionals to understand and analyse the case more fully.

More advanced AI systems, such as AustLII's Datalex platform, can pinpoint the relevant law based on the specific case circumstances entered by the judge, and explain in detail why a particular provision applies or does not apply in that case. Compared with the traditional reading of the bill article by article, this method greatly speeds up the process of legal analysis and improves the efficiency and accuracy of legal work.

The multiple applications of AI in legal search not only simplifies the workflow of legal workers, but also significantly improves work efficiency, making legal research and cases more efficient and accurate.

2.6.1.2 Use Predictive Algorithms to Assist Judicial Decision-Making

Many countries are already using AI in a variety of judicial settings to assist with pre-trial and post-trial matters, such as bail, parole, and sentencing.[781] Some courts use algorithms to predict the risk of pre-trial flight, which helps the court determine whether to grant bail and the amount of bail. AI can also calculate a defendant's likelihood of recidivism to aid parole decisions and the setting of conceptual conditions.[782] Criminal sentencing relies heavily on algorithms or rules, combined with sophisticated statistics and econometrics.[783]

The proper design, development and deployment of these tools in the justice system can bring significant benefits. For example, in the case of *Wisconsin v. Loomis*,[784] judges use COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) to assess the risk of a defendant committing a future crime and determine a sentence. When defendant Loomis appealed, arguing that the punishment resulting from COMPAS was too harsh and violated the legality of the process, the

[780] 'The Power of Artificial Intelligence in Legal Research' (*Lexisnexis*, October 2020) <https://www.lexisnexis.com/community/insights/legal/b/thought-leadership/posts/the-power-of-artificial-intelligence-in-legal-research> accessed 18 July 2024
[781] EPIC, 'AI in the Criminal Justice System' (*Epic.org*, 8 January 2019) <https://epic.org/algorithmic-transparency/crim-justice/> accessed 18 July 2024.
[782] James E Baker, Laurie N Hobart, and Matthew G Mittelsteadt, AI for Judges: A Framework (CSET Policy Brief, 2021).
[783] Matthew Van Meter, 'One Judge Makes the Case for Judgment' (*Theatlantic*, 25 February 2016) <https://www.theatlantic.com/politics/ar-chive/2016/02/one-judge-makes-the-case-for-judgment/463380/> accessed 18 July 2024.
[784] Wisconsin v Loomis 881 NW 2d 749 (Wis 2016).

Wisconsin Supreme Court dismissed his case. The Court noted that the risk assessment and sentencing functions of the COMPAS system are implemented through independent subitems and complex algorithms, resulting in a rating level of 1 to 10. Because the algorithm system was neutral and objective, it conformed to procedural justice.[785]

However, defendant Loomis argued that there was a risk of opacity and injustice in using AI for sentencing, as the statistical methods of the AI tool were never disclosed to the defendant or the court.[786] Moreover, predictive algorithms have a far greater impact on bail, parole, and sentencing than shopping, where the former is directly related to an individual's liberty, while the latter is only concerned with whether or not to purchase that good or service. It is therefore important for the judiciary to emphasise its supervisory function to ensure that the AI output of sentencing outcomes meets our expectations of due process and equal protection.

2.6.1.3 Shorten the Time for Preparing Judgment Documents

At present, courts all over the world are faced with a huge number of cases, a shortage of judicial resources, and a huge pressure on the business of local courts and judges. Excessive case pressure not only threatens the quality of handling cases but also reduces the appeal of the judicial profession to some extent. With its powerful computing power, standardisation and process characteristics, judicial artificial intelligence can complete evidence review, case file production, judgement document generation and other work in a short time.[787] The application of artificial intelligence in the judicial field will significantly improve the work efficiency of case-handling personnel, prompting judges to devote more energy to difficult, major and complex cases, and maximise the utilisation rate of judicial resources.[788]

In Germany, IBM, in cooperation with the Frankfurt District Court, has successfully tested an artificial intelligence system called "Frauke" (Frankfurt Judgment Configurator Electronic) for handling air passenger rights litigation. Every year there are between 10,000 and 15,000 passenger rights-related cases in the Frankfurt District Court, for example about delays. This is a very labour-intensive and repetitive task for judges, who have to collect the relevant data and prepare almost identical judgements over and over again.

Since using the AI tool Frauke. It extracts case data from the pleadings (including flight numbers and delays) and uses pre-written text modules to help speed up the drafting of judgments, depending on the judge's decision. So far, by using this technology, Frauke has significantly reduced the processing time

[785] Christopher Slobogin, 'Risk Assessment', in Joan Petersilia, and Kevin R. Reitz (eds), *The Oxford Handbook of Sentencing and Corrections*, Oxford Handbooks (2012; online edn, Oxford Academic, 18 September 2012), <https://doi.org/10.1093/oxfordhb/9780199730148.013.0008> accessed 18 July 2024.
[786] Loomis v Wisconsin 881 NW 2d 749 (Wis 2016) 765.
[787] Zichun Xu, 'Human judges in the era of artificial intelligence: challenges and opportunities' (2022) 36(1) Applied Artificial Intelligence 199.
[788] Ruicui Zhang, 'Application and regulation of artificial intelligence technology in judicial judgment' (2020) 32 (3) Chinese and Foreign Law 350.

required to prepare a judgement.[789] The automatic generation of judgement documents can greatly reduce the workload of judges in the trial of clear facts, clear laws, and less controversial cases (such as traffic damage compensation, bank contract lending, government information disclosure, etc.).[790]

2.6.1.4 Enhancing Fairness and Reducing Bias

An objective and neutral stance is not only an important factor to ensure the fairness of the judicial process but also a prerequisite for judicial decisions to be recognized by the public. However, in practice, it is a luxury to expect human judges to maintain a neutral, objective and impartial attitude due to their own personal preferences, biases, job burnout, corruption and other problems.[791] In the specific use of AI for legal administration, AI can be used to mitigate human bias.

Based on judicial big data, AI constructs models through semantic analysis and data analysis, screens the data samples one by one for relevant factors that may affect the conclusion of the judgement, and then tags and integrates these data into a structured knowledge chain to achieve accurate automated rulings. Relying on independent algorithms and repeatable and applicable legal systems, it can effectively get rid of the artificial arbitrariness of judges' discretion, promote the uniformity of the application of the law, eliminate the subjective bias of judges' values and the influence of external factors on predictability, and ultimately ensure the objectivity and impartiality of judicial decisions.

However, this is not a complete guarantee that the AI will not create unwanted or illegitimate biases from its input data. For example, if the system primarily uses roses as an input example, it may fail to recognise tulips as flowers. Similarly, even if the developer of the tool takes steps to eliminate bias at the outset, the machine learning tool may derive such bias from its "learning" in ways that are difficult to detect. In addition, judges should pay particular attention to data generated based on group profiling and targeting of individuals, as such data may not be inherently neutral, and data-driven AI results may also be biassed and discriminatory.

2.6.1.5 Enhance Judicial Fairness

"Different sentences in the same case" and "inconsistent standards of application of law" have always been the key issues in the judicial field. The uniformity and equality of the application of law is one of the value goals of judicial practice.[792] In practice, the phenomenon that similar cases do not make similar judgments will cause the public to question the legitimacy and legality of the judge's discretion,

[789] Eckard Schindler, 'Judicial systems are turning to AI to help manage vast quantities of data and expedite case resolution' (*IBM*, 8 January 2024) <https://www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution/> accessed 18 July 2024
[790] Zhang (n 788) 102.
[791] Rebecca Crootof, 'Cyborg justice and the risk of technological-legal lock-in' (2019) 119 (20) Columbia Law Review Forum 233.
[792] J. J. Gao, 'Opportunities, challenges and development paths of judicial intelligence in China in the era of artificial intelligence' (2019) 3 Journal of Shandong University (Philosophy and Social Sciences) 115.

and ultimately damage the judicial trust.[793] Faced with a huge number of judicial documents, judges cannot fully read these documents, let alone fully grasp the core elements of these documents.

AI uses deep learning to calculate and classify a large number of cases, explore the correlation law between cases, and push cases with high similarity to judges in the past to provide references for judges to try similar cases, which is conducive to the same or similar cases getting the same or similar results and preventing unfair judgments. Through data storage, reading and calculation, AI can conduct in-depth analysis and research on massive sample data, which can not only master the experience gained by judges' long-term training and trial practice, but also obtain a more open legal vision. This avoids the issue that judges ignore some important case information due to personal knowledge and experience and assist judges to make fairer judgments.

2.6.1.6 Improves the Convenience of Judicial Services

Through the introduction of artificial intelligence technology, judicial services have become more convenient and efficient, truly realising all-round and barrier-free litigation services and providing the public with a better judicial experience.

First, the AI legal service system supports parties to file cases and attend court hearings online, so that parties do not need to go to the court in person, but only need to submit relevant materials and participate in court hearings through the Internet, which effectively saves transport, time and labour costs. For example, a resident in a remote area can complete the filing of a case, participate in a court hearing and maintain communication with the judge by using the AI Legal Services System via smartphones or computers. This new litigation service model not only facilitates the public but also effectively relieves the work pressure of the courts and improves the overall operational efficiency of the judicial system.

Second, through the Administrative Information Disclosure Network (AIDN), communication between parties and judges has become more direct and efficient and is no longer limited by traditional office hours and locations. This seamless channel of communication helps to increase the speed and efficiency of case processing.

2.6.2. Conclusion

The convergence of AI and the justice system offers transformative opportunities to improve efficiency, accuracy, and fairness. Ai has significantly optimised judicial processes by facilitating comprehensive legal research, assisting judicial decision-making with predictive algorithms, accelerating the preparation of judicial documents, and promoting the unification of legal standards. However, it is critical to address challenges such as algorithmic transparency and potential inherent biases in AI

[793] W. M. Zuo, 'From generalisation to specialisation: Rethinking the application of artificial intelligence in China's judicial system' (2020) 35(2) Law Forum 17.

systems. By ensuring rigorous oversight and continuous improvement of AI tools, justice systems can harness the full potential of AI to deliver more consistent, equitable, and accessible justice.

2.7. How can AI be used in administrative court functions to improve efficiency?

By Chelger Chiew and Husam Erekat

The complex infrastructure of the legal system has ultimately resulted in a comparatively inefficient outcome. Although trials may be heard every day, the number of cases filed every year is astronomical. Consider the UK as an example, in 2021, courts had heard approximately 3.1 million cases. As a result, it is common view that the legal system's administrative functions could be enhanced to better tackle these issues. Common strategies adopted include hearing cases that are similar collectively, allowing for virtual trials to maximise time efficiency, transitioning data collection onto digital platforms etc. The legal system has had a long-history of adapting to change, and with the emergence of AI, it would further aid in improving its efficiency. This section of the research will outline examples from various countries in the implementation of AI in their legal system to show that the strength of AI in predictive analysis is one of the traits to improve the courts' efficiency in its administrative functions. Furthermore, this section will also explore the impact of AI on the efficiency of administrative decision making including legal and ethical considerations.

The administrative functions of the court can generally be divided into several areas according to Jackson, Brian A. et al (2016).[794] These areas include (i) case preparation and presentation; (ii) information management; (iii) support for hearings; (iv) facilities management; and (v) people management. Many countries' attempts to increase efficiency focus on information management because it is the most technical and complicated area. Firstly, let us consider transcription. During the trial, all verbal statements made by any parties are required to be transcribed and kept as a record. Conventionally, this would either be done by a transcriptionist. However, as expected, it is time consuming, and it may be inaccurate due to human error. Contrastingly, AI does not get affected by factors such as fatigue, mood, or carelessness, thus, the implementation would greatly increase efficiency and accuracy. For instance, Estonia introduced "Salme", a speech recognition tool.[795] It has been proven to achieve a 92% precision. Unlike Estonia which provides for transcription post-court, Singapore has introduced a "Speech Transcription System", which provides for real-time transcription.[796] The transcriptions could then be reviewed directly by parties or the court at the same time. This innovation would significantly aid in shortening long litigation processes.

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[794] B A Jackson, D Banks, J S Hollywood, D Woods, A Royal, P W Woodson, and N J Johnson, Fostering Innovation in the U.S. Court System: Identifying High-Priority Technology and Other Needs for Improving Court Operations and Outcomes (RAND Corporation 2016) 45-70 < http://www.jstor.org/stable/10.7249/j.ctt1d41ddx> accessed 13 July 2024.

[795] 'Introducing Salme, Estonian Courts' Speech Recognition Assistant' (*e-Estonia*, 26 January 2022) <https://e-estonia.com/introducing-salme-estonian-courts-speech-recognition-assistant/> accessed 16 July 2024.

[796] Tan Tham Mei, 'State Courts to Use System That Instantly Transcribes Court Proceedings' (*The Straits Times*, 14 December 2017) <https://www.straitstimes.com/singapore/courts-crime/state-courts-to-use-system-that-instantly-transcribes-court-proceedings> accessed 16 July 2024.

Despite the convenience of AI in transcription, AI's potential could be maximised if courts rely on its machine-learning model to produce a prediction that is coherent with previous case laws. In 2017, Argentina developed a "PROMETEA" system that aims to produce court opinions automatically.[797] According to the Inter-American Development Bank, this system had reduced significantly the time required in court processes.[798] To outline the improvement, there was a 99% reduction from 90 minutes to 1 minute for creating a resolution for tenders, a 77% reduction from 167 days to 38 days for the processes for trial, and a 78% reduction from 190 days to 42 days for housing protection with third parties, etc. It may also create legal documents and check for typing errors. Apart from individual areas of processing, PROMETEA can produce court rulings in less than 20 seconds with an accuracy of 96%. Unlike traditional machine-learning, PROMETEA is efficient because it adopts a "supervised machine-learning" where labelled datasets are given to train algorithms to predict outcomes. This is particularly useful in the legal industry due to the heavy reliance on precedent. With a large enough dataset, found in countries with a long-history of law, the accuracy would only be better.

Apart from Argentina's approach in automated judgments, the UK's ambition continues beyond generating judgments. They adopt an assessment tool, known as HART, to provide a prediction for the risk of crime that is founded on historical data derived from court cases.[799] This effectively reduces the speed at which cases arise as the legal system can now work hand in hand with police forces to prevent crimes prior to happening. This is almost identical to Austria's approach where AI is being used to provide predictions for risk. It also aims to solve the biggest issue of "accessibility to justice." The previous issue is with court judgments not being anonymised where it is not accessible by the public. However, with this system, all previous judgements are analysed and anonymised with extended annotations so it can be accessed by the public. Not only does it automatically anonymise judgments, this system is also adopted in prisons to help ensure safety of their staff by analysing behavioural patterns of prisoners. However, Austria's coverage is wider than that of the UK, where they also developed a detecting system for aggressive or radical content found online.[800] As a result, both the UK and Austria have a heavy focus on using AI to prevent further crime in the legal system.

As demonstrated in the various countries' efforts in implementing AI, there is a trend that the potential of AI is being maximised to produce some sort of prediction. However, Canada attempts to solve the inefficiency by solving it at its roots by reducing the number of cases brought to court. They developed an online tribunal, the "Civil Resolution Tribunal" to provide opinions and advice in the early stages of

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[797] Federico Ast, 'Prometea, Artificial Intelligence in the Judicial System of Argentina' (*Astec*, 23 June 2020) <https://medium.com/astec/prometea-artificial-intelligence-in-the-judicial-system-of-argentina-4dfbde079c40>accessed 16 July 2024.

[798] UNESCOchair, 'PROMETEA: Transforming the Administration of Justice with Artificial Intelligence Tools – UNESCO Chair on Knowledge Societies and Digital Government' (*UNESCO Chair on Knowledge Societies and Digital Government*, 2020) <https://unescochair.cs.uns.edu.ar/en/2020/06/prometea-transforming-the-administration-of-justice-with-artificial-intelligence-tools/> accessed 16 July 2024.

[799] L Walsh, 'Helping Police Make Custody Decisions Using Artificial Intelligence' (*University of Cambridge*, 26 February 2018) <https://www.cam.ac.uk/research/features/helping-police-make-custody-decisions-using-artificial-intelligence> accessed 16 July 2024.

[800] Martin Hackl, 'Anonymization of Court Decisions in Austria' (2021) <https://commission.europa.eu/system/files/2021-04/anonymisation_webinar_29032021_austria.pdf> accessed 16 July 2024.

conflict to avoid bringing it to trial.[801] No professionals such as lawyers are required throughout the process. The process starts with "Solution Explorer", which consists of various questions and provides tailored feedback.[802] If the individual wishes to proceed, the claim would be submitted to the tribunal where the information would be forwarded. The emphasis is effectively shifted from trial to dispute resolution, thus reducing the administrative burden of courts.

While incorporating AI into legal decision-making may seem beneficial at first glance, it is also a fairly flawed concept that may cause unprecedented issues. For example, the dehumanisation of law. Traditionally, conflicting parties resolve their issues through a mediator who is more or less open to empathise with both sides but can still be objective to apply the legal principles appropriately.[803] When AI takes over court cases, however, the shared humanity is lost, arguably leading to a fall in not only the moral but also the legal legitimacy of courts in society.[804]

The use of AI for administrative decision-making also raises multiple legal and ethical concerns. First, the potential for bias in AI algorithms is great.[805] If the data collected to form AI systems contain bias, the systems may perpetuate these biases and significantly alter the fairness of a trial. This leads the efforts to eliminate judicial impartiality to appear arguably impossible due to the algorithms used by AI systems which are built on pre-existing data provided by judicial precedent. This could lead to biased results for some people. Second, the absence of both transparency and human oversight regarding what data AI systems derive their information from could lead to errors in judgment.[806] However, these issues can be counteracted by automating tasks that are manually done to reduce human error.

Furthermore, AI has the potential to improve transparency even further by providing individuals with open access to crucial information about government initiatives, thus leading to improved public-government relations by promoting a stronger sense of trust and accountability. While AI can increase efficiency, it lacks the necessary depth and ethical awareness that people provide.[807] AI is not supposed to replace human judgment but should work in partnership with judges to deliver a fair and impartial verdict.

Nonetheless, a number of countries are already using AI for justice administration. In the United States, for example, COMPAS is used to predict the likelihood of recidivism or the risk of repeating offenses,

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[801] Office of Housing and Construction Standards, 'The Civil Resolution Tribunal and Strata Disputes - Province of British Columbia' (*www2.gov.bc.ca*,18 May 2022) <https://www2.gov.bc.ca/gov/content/housing-tenancy/strata-housing/resolving-disputes/the-civil-resolution-tribunal> accessed 16 July 2024.
[802] Ibid.
[803] Giulia Gentile, 'Trial by artificial intelligence? How technology is reshaping our legal system' (*blogs.lse.ac.uk*, 2023) <https://blogs.lse.ac.uk/politicsandpolicy/trial-by-artificial-intelligence-how-technology-is-reshaping-our-legal-system/> accessed 19 July 2024
[804] Ibid.
[805] Ibid.
[806] J Butt, 'The Impact of Artificial Intelligence (AI) on the Efficiency of Administrative Decision Making Including Ethical & Legal Considerations and Comparative Study about Countries Already Incorporated AI for Administrative Decisions' (2023) 19 Danubius Journals 7.
[807] Ibid.

and it also serves to offer a guide to sentencing and parole decisions.[808] Furthermore, the US Department of Homeland Security also employs AI to help identify potential terrorists and smugglers. On the other hand, the UK utilises AI differently, the BAIL SUPPORT SERVICE, for example, is used to generate bail recommendations, which helps reduce the number of pre-trial procedures; the UK also uses AI for fraud detection and crime predictions. Finally, in Canada, LEGAL ROBOT is employed as a chatbot that allows members of the public to find legal information and answer questions.[809]

Moving forward, the use of AI in courts will continue advancing, but that also raises the important issue of AI regulation to ensure that the systems set in place do not lead to more errors than it solves. Apart from International Treaties that deal with the use of technology in general, there are larger global initiatives that consider the deployment of AI-based judicial systems. The Convention for the Protection of Individuals with regard to Automatic Processing of Data adopted by the Council of Europe, for example, handles personal data regulation and processing, considering the AI used within the Public Service Administration.[810]

Furthermore, the OCED Principles on Artificial Intelligence signified a milestone as the first intergovernmental standard on AI.[811] They provide guidelines on assistance in developing responsible governance frameworks that enhance accountability, transparency, and fairness.[812] Lastly, the Committee of Ministers at its 1384th session adopted a new set of standards: "Recommendation CM/Rec (2020)1 on the human rights impacts of algorithmic systems," which introduces important principles such as protection against abuse, privacy protections, and economic commitment to provide more transparency in respect to justice with AI systems.[813]

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[808] Butt (n 806).
[809] Ibid.
[810] Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (Convention No. 108) 1981.
[811] Organisation for Economic Co-operation and Development, 'Principles on Artificial Intelligence' (OECD, 2019) <https://www.oecd.org/en/topics/sub-issues/ai-principles.html#:~:text=The%20OECD%20AI%20Principles%20promote,stand%20the%20test%20of%20time> accessed 19 July 2024.
[812] Ibid.
[813] Recommendation of the Committee of Ministers to member States on the human rights impacts of algorithmic systems [2020] CM/Rec(2020)1.

Chapter 3: Impact of AI upon Lawmaking

3.1. To what extent can AI be used to draft and analyse legislation?

By Nicole Kerr

In an era defined by rapid technological advancements, the intersection of Artificial Intelligence (AI) and legislative processes presents both promising opportunities and formidable challenges. This essay delves into the current applications of AI in legislative bodies worldwide, focusing on its role in digitalisation, legislative drafting, and policy analysis. Through a comprehensive examination of AI-driven initiatives in jurisdictions such as the European Union, United States, and various European states, the paper highlights AI's contributions to improving legislative consistency, regulatory compliance, and public engagement. Additionally, it critically assesses the limitations and risks associated with AI, including data validity, transparency, and the essential need for human oversight. By advocating for a collaborative approach among AI technologists, policymakers, and legal experts, it is found that the incorporation of AI in the law-making process is beneficial to the extent that it is balanced and complemented with human judgement to create more effective and equitable legislation.

3.1.1 Use of AI in the Draft and Analysis of Legislation Across Jurisdictions

In their 2020 Report, the Inter-Parliamentary Union found that many legislators and regulators across the globe are already experimenting with AI in the legislative drafting and analysis process. It was found that one out of three parliamentary chambers at a global level 'had systems for managing legislative text in a digital format as they move through deliberations.'[814] There is also an appetite at the EU level to use this technology to support the legislative drafting process; the EU's AI Act supports the development of innovative and responsible AI in the EU.[815] In particular, the European Commission has recognised the potential of AI to enhance various processes, including those related to policy-making and legislative drafting. For example, the 2021 update of the Coordinated Plan on AI emphasises the need for the EU to become a leader in AI, including in its use for public sector applications like legislative drafting.[816] This is part of a broader strategy to foster innovation while ensuring that AI systems are transparent, trustworthy, and aligned with EU values.

Further, at a European State level, parliaments are slowly incorporating AI into the legislative process. The Italian Senate is investigating 'the development of an 'amendment writer', which utilises AI technology by 'allowing the user to directly edit the text of the provision and obtain the corresponding amendment proposal structured in the form of an amendment' in line with the relevant rules of technical drafting of Italian legislative text.[817] Similarly, the Finnish government has introduced a

[814] Inter-Parliamentary Union, *World e-Parliament Report 2020* (Inter-Parliamentary Union, 2021).
[815] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations [2024] OJ L2024/1689.
[816] European Commission, 'Coordinated Plan on Artificial Intelligence 2021 Review' COM(2021) 205 final.
[817] Nicoletta Rangone, 'Artificial Intelligence Challenging Core State Functions: A Focus on Law-Making and Rule-Making' (2023) 8 Revista de Derecho Público: Teoría y Método 95, 102.

legislative drafting system 'SOLON' which translates 254 drafting guidelines of the Flemish government into an algorithm.[818] In the Netherlands, the Legislative Design and Advisory system alerts legislative drafters to relevant directives concerning drafting rules in order to 'provide information in the form of model clauses to be considered, advice on structure, help for definitions'.[819] Likewise, the governments of the United Kingdom and Scotland have developed a software 'Lawmaker' that creates amendments by editing copies of the relevant Bill.[820]

Further afield, the eagerness to incorporate AI into the drafting and analysis of legislation is also demonstrated in the United States. The US House of Representatives employs computational text analysis to assist politicians, administrative staff, and citizens in understanding the impact of proposals. This is achieved by tracking how amendments alter legislation and assessing the effects of proposed legislation on existing laws.[821] The Select Committee on the Modernization of Congress noted several areas of concern surrounding this tool, such as House-wide accessibility and adequate resourcing for training and supporting staff. Subsequently, the Committee recommended certain adjustments to the piloting of this tool to enable a smooth transition and robust understanding across Congress.[822]

Recent advances in AI may enable the technology's supporting role to get even closer to the core legislative writing task, as opposed to assisting in the digitalisation of legislative text. However, this opportunity also presents a plethora of risks and challenges to regulators and legislators.

3.1.2. AI's Capabilities to Draft and Analyse Legislation

Interpretative tools such as Casetext and ROSS Intelligence offer sophisticated semantic understanding of legal documents' meanings, and are already being utilised in the analysis of dense case law. These platforms leverage advanced artificial intelligence, particularly natural language processing (NLP) and machine learning, and thus are capable of spotting patterns and trends in legislative texts. This enables systems to alert legislative drafters with warnings if language is proposed that deviates from existing texts, or that is associated with provisions that have been proven problematic or ambiguous in a court-setting. In this way, AI has the ability to support consistency checks and regulatory compliance within the legislative drafting phase. For example, the Library of Congress, in collaboration with the Congressional Research Service, is experimenting with using AI tools to create summaries of bills and apply NLP technology to identify similar bills. This development could indirectly support the identification of legislative conflicts by matching new proposals with existing laws and past bills for consistency issues.[823]

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[818] Stijn Debaene, Raf Van Kuyck, and Bea Van Buggenhout, 'Legislative Technique as Basis of a Legislative Drafting System' (2000) 9(2) ICTL 149-159.
[819] Wim Voermans, Wolmoed Fokkema, Remco Van Wijk, 'Free the Legislative Process of its Paper Chains: IT-inspired Redesign of The Legislative Procedure Cycle', (2012) (1) The Loophole 56.
[820] Matt LYNC, "Lawmaker – the new legislative drafting service of the UK and Scotland", (2022) (2) The Loophole 35.
[821] The Select Committee on the Modernisation of Congress, Final Report n. 116-562, 2020, 72.
[822] Ibid., 73.
[823] Natalie Alms, 'How Congress is gearing up to take advantage of generative AI', Nextgov (6 February 2024) <https://www.nextgov.com/artificial-intelligence/2024/02/how-congress-gearing-take-advantage-generative-ai/393972/ > accessed 1 September 2024.

Also, by comparing definitions used in pieces of legislation, divergences can be highlighted and a proposal for standardisation can be suggested. The standardisation of the legal language used within legislation leads to accessibility and comprehensibility of regulations, in turn encouraging the public to familiarise themselves with their rights and responsibilities. Indeed, Coglianese describes how 'rendering rules in plain language…assists with public understanding and compliance'.[824] This has the potential to increase the efficiency of the law-making process, and adherence to said laws.

An area of advancement in law-making has been the use of pioneering projects, such as Crowdlaw, which utilise AI technology to enhance the quality of legislative drafting through the use of citizen participation. Crowdlaw has emerged as an 'innovative proposal that harnesses collective intelligence and emerging technologies to enhance the quality and legitimacy of public decisions, promoting citizen participation in various stages of the law and public policy formulation process through digital platforms.'[825] This approach utilises natural language processing, machine learning, and data analysis to provide specialised digital platforms and technologies that enable the analysis of citizen contributions to legislative proposals.

One of the most well-known instances of Crowdlaw was the participatory reform of the Icelandic Constitution in 2011, where crowdsourcing was used to enable citizens to contribute proposals and comments during certain stages of the process.[826] On a smaller scale, in the US, thousands of public comments submitted to the Transport Security Administration regarding a proposed regulation relating to the use of full body imaging scanners in airport security terminals, underwent AI machine-learning analysis. This approach provided policymakers with 'salient topic clusters that could be used…to understand large amounts of texts, such as an open public comments process.'[827] In this way, the integration of AI in the drafting of legislation, particularly in terms of encouraging citizen participation, 'has a significant impact on decision-making processes by enabling the aggregation and filtering of diverse perspectives, leading to more informed, inclusive, and legitimate policy outcomes.'[828] This may be most useful in times of crisis, for example global pandemics, when 'public institutions can benefit greatly from collective intelligence approaches…due to uncertainty and limitations in the usual channels for obtaining and analysing information.'[829]

These capabilities extend to AI's potential to assist in the analysis of legislation, also. AI-based textual analysis of legislative texts is another way in which AI can strengthen the law-making process, through

[824] Cary Coglianese, *E-rulemaking: Information Technology and the Regulatory Process: New Directions in Digital Government Research* (Harvard University 2004) 16.
[825] A. R. Vargas-Murillo and others 'Crowdlaw: Application of Emerging Technologies and Collective Intelligence in Law and Policy Making' 2024 International Conference on Inventive Computation Technologies, Nepal, 2024) 288-293.
[826] Hélène Landemore, 'Inclusive constitution-making: The Icelandic experiment' 2015 23(2) Journal of Political Philosophy, 166.
[827] Alex Ingrams (2020) 'A machine learning approach to open public comments for policymaking' 2020 25(4) Information Polity 433.
[828] Alms (n 823).
[829] José Luis Martí and Beth Simone Noveck, 'Introduction to the Special Issue on Crowdlaw and Emergency Collective Intelligence' 2022 3(2) Digital Government: Research and Practice 1.

analysis of large amounts of data regarding or pertaining to the relevant piece of legislation. AI has the ability to analyse word counts and clustering across a collection of judicial opinions, legal journals etc, that can reveal specific instances where certain standards, e.g good faith, are repeatedly applied in consideration of a particular piece of legislation. This revelation can lead to greater specificity in future law-making processes, as Fagan and Levmore argue 'models built from large stores of data…permit the creation and application of finely tuned rules'.[830]

Similarly, AI technology allows the automatic testing of the impact of new proposals or amendments, thus enabling legislators to forecast whether a regulatory option actually can achieve its desired outcomes. Morris illustrates this through an example of a proposed amendment to tax law. In this instance, 'computer systems can generate random fact scenarios, enter those fact scenarios into the rules, and calculate the consequences. Those consequences can then be compared to expected outcomes.'[831] In this way, legislators would have the unique opportunity to calculate if their proposals would meet their policy objectives.

In addition, this technology can also be employed to conduct legislative monitoring. Mastenbroak and Van Voorst suggest a 'regulatory cycle' of evaluation of legislation, whereby frequent, rather than ad hoc, analysis occurs of laws that are currently enacted.[832] The ability of AI to review large datasets to inform legislative decisions, such as statistics on wealth distribution, crime and employment rates, which may in turn reveal the need for a regulatory intervention or an updating of existing regulations. Therefore, AI could be helpful in pointing to regulatory failures that may otherwise go unnoticed where legislators rely on ad hoc and stakeholder-dependent data collection. This paper suggests that the use of AI-based monitoring systems could actually be fairly economical to run compared to large ad hoc evaluation studies. Drahmann and Meuwese note how the use of AI-based monitoring systems could actually be fairly economical to run compared to large ad hoc evaluation studies.[833]

3.1.3. Challenges & a Way Forward

These opportunities do not come without their respective challenges, however. The most obvious challenge is the validity and trustworthiness of the data used in AI's analysis of current or proposed legislation. Rangone notes how 'The robustness of the result depends also on the adequacy of the techniques deployed to assess data.'[834] Well-known risks of violations of privacy rules and data security standards, as well as the inevitable biases that exist within data and their analysis by machine tools, are challenges that accompany the use of AI technologies. However, Drahmann and Meuwese argue that

[830] Frank Fagan and Saul Levmore, 'The Impact of Artificial Intelligence on Rules, Standards, and Judicial Discretion' (2019) 93(1) Southern California Law Review 1.
[831] Jason Morris, 'Rules as Code: How Technology may change the Language in which Legislation is Written, and What it Might Mean for Lawyers of Tomorrow' (*TechShow*, 5 February 2021).
[832] Ellen Mastenbroek, Stijn Van Voorst and Anne Meuwese, 'Closing the regulatory cycle? A meta evaluation of ex-post legislative evaluations by the European Commission' 2016 23(9) Journal of European Public Policy 1329.
[833] A. Drahmann and A. Meuwese 'AI and Lawmaking: An Overview' in B Custers and E Fosch-Villaronga, *Law and Artificial Intelligence* (T.M.C. Asser Press, The Hague 2022) 433.
[834] Nicoletta Rangone, 'Improving consultation to ensure the European Union's democratic legitimacy: From traditional procedural requirements to behavioural insights' 2022 28(4-6) European Law Journal 154.

'in instances where no personal data is required, and where AI is being used to aid the legislative process only, there is less room for potential controversy.'[835]

Also, there remains the issue of using historical data to predict future outcomes when using AI in legislative monitoring and analysis. In using AI to conduct impact assessments of proposed legislation, the use of pre-existing data is liable to perpetuate existing problems. AI largely succeeds in its programming of learning from past patterns and results, which is less important in areas of law that diverge from the rules of the past. In the absence of regularities, AI machine-learning largely loses its advantage. Hildebrandt describes the paradox that exists here; 'the radical uncertainty of the future is exacerbated by the fact that predictions impact the behaviour they supposedly predict'.[836] This is especially detrimental for laws relating to social welfare, whereby the analysis of historical data may sustain legislation that perpetuates discriminatory effects in society.

In relation, concerns are raised surrounding the lack of transparency and accountability that exists within AI algorithms. Greenstein notes how 'the mathematical calculations taking place at the hidden layers of neural networks or the mutating capabilities of genetic algorithms are beyond human cognitive comprehension and for the most part human explanation'.[837]Further, Fagan and Levmore highlight the inability for AI to justify or rationalise its own findings.[838] AI's inability to provide justifications can obscure potential ethical and legal concerns that are embedded in its output. Without a clear rationale, ambiguous or poorly justified legal provisions could result in increased litigation, inconsistent interpretations by courts, and difficulties in implementation. Lawmakers need to understand the reasoning behind legislative decisions to ensure that laws align with ethical standards and legal principles. This limitation can undermine the effectiveness, trustworthiness, and ethical soundness of the laws being created.

Additionally, governments may be hesitant to invest the significant resources required to implement AI into the law-making process. Expenses involved in setting up AI-based monitoring systems makes the evaluation process burdensome and expensive, requiring ongoing maintenance and updates, as well as training costs. Drahmann and Meuwese suggest that the introduction of pilot projects, to show AI's potential in this area, can be implemented in a cost-effective manner.[839] Further, the aforementioned use of AI in cyclical monitoring of legislation may actually save the legislator in a long-term setting, by avoiding expensive ad hoc reviews.

In light of these challenges, scholars have proposed various solutions in order to advance the use of AI in the legislative process. Mastenbroak and Van Voorst suggest an 'incremental and experimental approach' to the incorporation of AI in the legislative process, as well as 'the elaboration of a general

[835] Morris (n 831).
[836] Mireille Hildebrandt, 'Code-Driven Law: Freezing the Future and Scaling the Past' in Simon Deakin and Christopher Markou (ed) *Is Law Computable?: Critical Perspectives on Law and Artificial Intelligence* (Hart 2020) 67.
[837] Stanley Greenstein, 'Preserving the rule of law in the era of artificial intelligence (AI)' 2022 30 Artificial Intelligence and the Law 291.
[838] Morris (n 831).
[839] Alms (n 823).

framework, to be tailored by each regulator to the specific features of its task, aimed at setting the rationale, the role and adequate guardrails'.[840] It is important that future experimentation of the use of AI in this field is done in a controlled manner, in order to test their true potential and tackle unforeseen issues.

In order to limit risk, a balance should be found between human input and AI, particularly when building its infrastructure and algorithm, to ensure incorporation of fundamental safeguards against bias, invasion of privacy, or unreliable assessments, but also to clearly identify what the AI tasks are, and what the role of humans is.[841] Therefore, it can be deduced that human legislators will always be needed to supervise and integrate any AI produced text as 'humans must specify the targets, commands, and consequences of potential rules from which an embedded machine-learning system might choose the best.'[842]

3.1.4. Conclusion

The integration of AI into the legislative process holds significant potential for transforming how laws are drafted, analysed, and implemented. Examples from the European Union, United States, and various European states show that AI technologies are already making strides in automating drafting, ensuring consistency, and enhancing citizen participation through platforms like Crowdlaw. These advancements highlight AI's capability to support legislative processes by providing sophisticated tools for textual analysis, pattern recognition, and impact assessment. However, deploying AI in this domain comes with challenges, including data validity, bias, transparency, and substantial resource requirements. To address these challenges, human oversight and input must remain paramount. Collaborative efforts between AI developers, lawmakers, and computer scientists can ensure the creation of AI systems that are transparent, accountable, and free from bias. The future of law-making will likely be shaped by a symbiotic relationship between AI and human legislators, working together to craft legislation that meets the complexities of the modern world.

3.2. To what extent can AI support the work of legislative committees?
By Yiding Meng

AI tools have been increasingly used in various aspects of the legal field. While legislation is fundamentally a human activity, AI can help enhance the legislative process. Just as industries are using AI to unlock new capabilities and improve efficiency, governments can apply AI to assist legislative committees in their work. Currently, there are calls to bridge the gap between technological innovation and the government's ability to keep pace. Three reasons have been cited: the accelerating rate of technological evolution, the public's increasing appetite for and adoption of new technologies, and the

[840] Mastenbroek et al. (n 832).
[841] Rangone (n 834) 83.
[842] Cary Coglianese and David Lehr, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' 2017 Georgetown Law Journal 1173.

government's progressive loss of the ability to adapt.[843]

This section argues that AI can play an auxiliary role in supporting the work of legislative committees but cannot fully replace them. Moreover, implementing AI in this context may introduce certain ethical risks.

The road map proceeds as follows. Firstly, this paper briefly discusses the scope of work performed by legislative committees and the current state of AI development. Secondly, it examines how AI specifically assists the work of legislative committees and its potential effects. Thirdly, it analyses the limitations and possible risks of AI in supporting legislative committees. Finally, this paper presents prospects.

3.2.1. Background Information

3.2.1.1. Transformative Potential of AI

AI was first defined in 1956 by John McCarthy, an American computer scientist, as 'the science and engineering of making intelligent machines, especially intelligent programs'.[844] AI research made some progress in the 1960s, with the development of simple robots like Shakey. However, due to overly high expectations and technological limitations, AI research entered the 'AI Winter' in the late 1970s. It wasn't until the 1980s, with the rise of expert systems, that AI research regained attention. In 2006, the concept of deep learning became widely accepted, especially through the application of multi-layer neural networks, showing strong performance in image and speech recognition. In 2016, Google's AlphaGo defeated Go champion Lee Sedol, marking a milestone in AI's advantage in complex decision-making. Since then, AI applications have rapidly expanded into fields like healthcare, finance, and transportation, driving a global technological revolution. Early AI systems relied on symbolic reasoning, but computer scientists later developed machine learning (ML), a method of data analysis that automates analytical model building. ML uses algorithms that iteratively learn from data, enabling computers to discover hidden insights without being explicitly programmed where to look.[845] Unlike symbolic AI, ML systems can make choices through evaluative processes and perform tasks requiring human originality and creativity.[846]

3.2.1.2. Work of Legislative Committee

All modern parliaments set up committees, and these are often seen as the central places of

[843] 'The Pacing Problem and the Future of Technology Regulation' (*Mercatus Center*, 2018) <https://www.mercatus.org/economic-insights/expert-commentary/pacing-problem-and-future-technology-regulation> accessed 20 July 2024.
[844] Gonenc Gurkaynak, Ilay Yilmaz and Gunes Haksever, 'Stifling Artificial Intelligence: Human Perils' (2016) 32 Computer Law & Security Review 749.
[845] Ivan Bratko, 'Machine Learning and Qualitative Reasoning' (1994) 14 Machine Learning 305.
[846] Adrian A. S. Zuckerman, 'Artificial intelligence - implications for the legal profession, adversarial process and rule of law' (2020) 136 L.Q.R. 427.

policy-making.[847] Committees play a crucial role in the legislative process by reviewing proposed legislation, scrutinising government actions, and conducting detailed investigations into various issues. For example, a parliamentary committee might examine the implications of a new environmental policy, gather evidence from experts, and propose amendments to improve the policy before it is debated by the full legislature. In Mickler's view, the committees are the 'work horses of legislatures',[848] which shows the importance of committees in the legislative process. To explore the question "To what extent can AI support the work of legislative committees?", it is important to first understand what the work of legislative committees is.

In Europe, parliament committees play a vital role in policy-making. For an ordinary legislative procedure, the process begins with the European Commission (EC) drafting legislative proposals.[849] Legislative committees then conduct Parliament's in-depth work by examining, amending, and voting on these proposals during their monthly meetings. Afterward, the committees submit their reports to the entire Parliament.[850] The legislative proposal is then adopted at a plenary session. Once an agreement is reached between Parliament and the Council of the European Union, the legislative act is published in the Official Journal of the European Union (OJEU), transposed into national legislation, and applied to all European citizens.[851]

Similarly, in the United States (US), the legislative process begins with a representative sponsoring a bill.[852] The bill is then assigned to a committee for study.[853] If released by the committee, the bill is put on a calendar to be voted on, debated, or amended.[854] If the bill passes by a simple majority (218 of 435), the bill moves to the Senate. In the Senate, the bill is assigned to another committee and, if released, debated and voted on.[855] Again, a simple majority (51 of 100) passes the bill.[856] Finally, a conference committee made of House and Senate members works out any differences between the House and Senate versions of the bill.[857] The resulting bill returns to the House and Senate for final approval.[858] Usually, Senate committees handle hundreds of bills through over 2,000 public hearings and business meetings each Congress.[859] They invite a variety of witnesses, including Congress members, cabinet officers, administration officials, business and labour representatives, and other experts. After

[847] Sven T. Siefken and Hilmar Rommetvedt, 'Investigating the role of parliamentary committees in the policy process' in Sven T. Siefken and Hilmar Rommetvedt, *Parliamentary Committees in the Policy Process* (1st edn, Routledge 2021).
[848] Shane Martin and Tim A Mickler, 'Committee Assignments: Theories, Causes and Consequences' (2019) 72 Parliamentary Affairs 77.
[849] European Parliament, 'A quick look at Parliamentary committees' (European Union, 2021).
[850] Ibid.
[851] Ibid.
[852] US House of Representatives, 'The Legislative Process' <https://www.house.gov/the-house-explained/the-legislative-process> accessed 20 July 2024.
[853] Ibid.
[854] Ibid.
[855] Ibid.
[856] Ibid.
[857] Ibid.
[858] Ibid.
[859] US Senate, 'About the Committee System' <https://www.senate.gov/about/origins-foundations/committee-system/committee-assignments.html> accessed 20 July 2024.

the hearings, committees "mark up" the bills, often creating a consolidated or "clean bill".

Overall, the work of legislative committees includes gathering legislative opinions, reviewing and amending legislative proposals, and ensuring comprehensive examination of legislative measures.

3.2.2. AI Advantages

AI can serve as an auxiliary tool to enhance the efficiency of legislative committees, freeing staff from time-consuming, repetitive, and mechanical tasks. As Graves, Harris, and Schuman noted, "the clear opportunity for Congress is to use AI to help free up staffing hours from communications and lower-level office tasks, in a similar way to the productivity boost achieved from typewriters and computers".[860] The following section will specifically demonstrate how AI can support the work of legislative committees.

3.2.2.1. Processing Institutional Knowledge

In committee daily operations, a tsunami of information must be processed, including mass emails from advocacy groups, correspondence from donors, tweets from constituents, letters from staff and colleagues, dense policy white papers, and various other communications. As a paper from the Harvard Belfer Center observed, Congress suffers from "a failure of absorptive capacity: the ability of an organisation to recognize the value of new, external information, to assimilate it, and to apply it to desired ends".[861] In this regard, AI could free their human counterparts to focus on high-value work. AI is particularly well suited to alleviate Congress's strained capacity to absorb and process information.

One of the most significant benefits of AI in lawmaking is the ability to process vast amounts of data quickly and accurately. This is particularly important when it comes to analysing data related to complex policy issues. Generative AI tools, such as GPT-4 and Anthropic's Claude, have been developed with expanded token windows, allowing them to summarise or extract detailed information from over 250 pages of text in a single session. While tools like ChatGPT plug-ins can parse PDF documents, processing an entire 2,500-page document at once remains a challenge. However, by handling documents section by section, these AI tools significantly enhance the efficiency of document analysis compared to traditional PDF word searches. Leveraging natural language processing, generative AI models can comprehend and generate text based on input, streamlining tasks that were previously time-consuming and cumbersome.[862]

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[860] Daniel Schuman, Marci Harris and Zach Graves, 'Bots in Congress: The Risks and Benefits of Emerging AI Tools in the Legislative Branch' (*Tech Policy Press*, 2023) <https://www.techpolicy.press/bots-in-congress-the-risks-and-benefits-of-emerging-ai-tools-in-the-legislative-branch/> accessed 20 July 2024.

[861] Grant Tudor and Justin Warner, 'The Congressional Futures Office: A Modern Model for Science & Technology Expertise in Congress' (*Belfer Center for Science and International Affairs*, 2019).

[862] Maya Kornberg, Marci Harris and Aubrey Wilson, 'Congress Must Keep Pace with AI' (*Brennan Center for Justice*, 2024) <https://www.brennancenter.org/our-work/research-reports/congress-must-keep-pace-ai> accessed 20 July 2024.

AI has also been used to compare the differences between bills. The newly introduced Comparison Printing Suite (CPS) is a good example.[863] CPS uses Natural Language Processing (NLP) to compare bills; it highlights changes using colours and text formatting (e.g., underlines, strikethroughs), allowing staff to see edits or amendments clearly. CPS also compares how the proposed legislation would alter current law.[864] Recently made available to all House of Representatives staffers, the release was highly anticipated, reflecting strong interest from several offices. Additionally, Italy's parliament employs AI to organise legislative amendments by clustering similar texts[865]. Those developments demonstrate that parliaments across the world have begun to develop technology that directly addresses the needs of legislative workflows.

Moreover, AI technologies could play a significant role in making a multilingual legislature. For instance, natural language processing (NLP)-assisted translation can expedite processes, exemplified by the European Union's (EU) system for immediate machine translation of commission press releases into all 24 official EU languages, albeit with human oversight for accuracy.[866]

3.2.2.2. Guide Policy Recommendations

Machine learning (ML) models are also powerful tools for guiding policy recommendations. They can find patterns in inputs and outputs without having to specify ahead of time how those inputs and outputs are likely to be linked. This allows ML models to find patterns in the outcomes of programs that may be invisible to humans.[867] ML models can also benefit the legislative process by uncovering the relationship between the public policies we adopt and the effects these policies were designed to achieve.[868]

There are already examples of ML models examining public policy in exactly this way. For several years, researchers have been using ML to understand the risk factors for infant mortality in childbirth. With the data available in electronic health records, many of these models can predict the likelihood of complications with 95% or greater accuracy.[869] Researchers from the Research and Development Corporation (RAND) then took those models to the next step. They used ML on data from Alleghany County, Pennsylvania, to evaluate which interventions had the biggest impact on reducing infant

[863] House Office of the Clerk and House Office of Legislative Counsel, 'The Comparative Print Suite' (POPVOX Foundation, 2023).
[864] Ross Gruetzemacher, 'The Power of Natural Language Processing' (*Harvard Business Review*, 2022) <https://hbr.org/2022/04/the-power-of-natural-language-processing> accessed 20 July 2024.
[865] Inter Parliamentary Union, 'Innovation tracker' (*IPU*, October 2022) <https://www.ipu.org/innovation-tracker/issue-12> accessed 20 July 2024.
[866] Gregorio Sorgi, 'EU gives more power to AI translation machines' (*Politico*, 15 June 2023) <https://www.politico.eu/article/ai-technology-eu-commission-parliament-gives-more-power-to-ai-translation-machines/ accessed 20 July 2024.
[867] Joe Mariani, 'AI for smarter legislation' (*Deloitte Insight*, 2022) <https://www2.deloitte.com/us/en/insights/industry/public-sector/artificial-intelligence-can-benefit-the-legislative-process.html> accessed 20 July 2024.
[868] Ibid.
[869] Muhammad Nazrul Islam et al., 'Machine learning to predict pregnancy outcomes: a systematic review, synthesizing framework and future research agenda' (2022) BMC Pregnancy and Childbirth 22, 348.

mortality.[870]

Although AI could uncover the hidden outcomes of policies and thus improve policy outcomes, only humans can decide if those outcomes would qualify as successes or failures. In the spirit of human-machine teaming, once the ML model has uncovered the hidden outcomes of a program or piece of legislation, the legislative committee can then look at those outcomes and determine: 1) if they are positive or negative and, 2) if the overall benefits are worth the cost and effort.

3.2.2.3. Strengthening Public Engagement

To achieve legislative democracy, legislative committees need to actively solicit legislative suggestions, expand channels for democratic expression, and widely accept and consider public opinion. When generative AI is deployed in custom applications or targeted datasets, it can help synthesise and summarise public opinion, helping legislators gain a broader and more detailed understanding of how policies impact or are perceived by different groups. This role of AI has already been applied in China. When the Standing Committee of the National People's Congress (NPCSC) revised the Personal Income Tax Law in 2011, big data technology was used to widely solicit opinions, resulting in over 230,000 legislative suggestions.[871] These opinions were managed and categorised using intelligent sorting, significantly improving legislative efficiency. This application of technology greatly promoted the democratic and scientific nature of legislation.

3.2.3. AI disruptions

Despite AI's strengths in efficiently processing institutional knowledge, guiding policy recommendations, and enhancing public engagement, several inherent characteristics of AI limit its effectiveness in supporting legislative committees.

3.2.3.1. Transparency Defects

AI can lead to transparency issues and make it difficult for legislators to fully understand how the results were derived.[872] Due to the black-box nature of ML, the user of an algorithm cannot truly discern which specific relationships between variables influence the algorithm's classification, or at which point in the algorithm these relationships come into play.[873] In other words, AI operates based on rules that are incredibly intricate, interconnected, and complex, making them difficult to practically inspect, inconsistent with typical human understanding of the world, or simply beyond the scope of

[870] Evan D. Peet, Dana Schultz, and Susan L. Lovejoy, 'Using an innovative database and machine learning to predict and reduce infant mortality' (*RAND Corporation*, 2021) <https://www.rand.org/pubs/research_briefs/RBA858-1.html> accessed 20 July 2024.
[871] Chao Li, 'AI-Assisted Legislation: Current Status, Challenges, and Responses'(2020) 4 People' Congress Studying 1.
[872] Jenna Burrell, 'How the Machine "Thinks": Understanding Opacity in Machine Learning Algorithms' (2016) 3 Big Data & Soc'y 1.
[873] Cary Coglianese and David Lehr, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' (2017) 105 Georgetown Law Journal 1147, 2017.

human reasoning.[874] Since machine learning can yield counter-intuitive results with flaws that can be difficult to detect, legislators may not consider the results fully "accountable". This could threaten the requirement for transparency in legal decisions, which is essential for fairness as it provides reasons for those decisions. The lack of transparency might disrupt public confidence and undermine the legitimacy of the legal system

A related issue is that the lack of transparency in AI can lead to bias. Without adequate transparency, the recommendations AI provides to legislators could be seen as unsupervised decisions, potentially resulting in legislation that does not effectively promote social fairness and equity. Machine learning models are vulnerable to the poisoning of training data, when a database reflects an underlying bias, the algorithm will reflect it too.[875] For instance, an algorithm for assessing the probability of reoffending may identify race or colour as an indicator of reoffending simply because a large proportion of the training sample consisted of people of colour. This could raise serious concerns about illegal discrimination. As a White House report on big data has warned, "powerful algorithms can unlock value in the vast troves of information available…but also raise the potential of encoding discrimination in automated decisions".[876]

3.2.3.2. AI's Limitations in Making Value Judgments

Sophisticated AI simulations cannot make value judgments or determine the optimal choice; they can only evaluate the best option based on the predefined values and assumptions set by humans. Currently, AI-assisted legislation is primarily used in the early stages of legislative work, such as collecting, classifying, and organising public opinions, and conducting record reviews. However, in more advanced tasks like evaluating the reasonableness of public legislative opinions and identifying conflicting laws, the level of automation remains limited.

This limitation arises from AI's inherent inability to perform complex interest balancing, which is crucial in legislative processes. AI systems excel at handling clear-cut, black-and-white issues but struggle with the nuanced decision-making required to weigh different interests and make judgments that reflect the multifaceted nature of societal needs and values. Consequently, while AI can provide valuable support in the preliminary stages, it falls short in areas where human judgement and ethical considerations are paramount.

3.2.4. Conclusion

This article explores the question, "To what extent can AI support the work of legislative committees?"

[874] Ibid., 30.
[875] Ben Hutchinson and Margaret Mitchell, '50 Years of Test (Un)fairness: Lessons for Machine Learning. In Proceedings of the Conference on Fairness, Accountability, and Transparency' (2018) Association for Computing Machinery <https://arxiv.org/pdf/1811.10104> accessed 20 July 2024.
[876] US Executive Office of the President, *Big Data: Seizing Opportunities, Preserving Values* (2014) <https://obamawhitehouse.archives.gov/sites/default/files/docs/20150204_Big_Data_Seizing_Opportunities_Preserving_Values_Memo.pdf> accessed 20 July 2024.

It recognizes that AI can play a significant role in processing institutional knowledge, guiding policy recommendations, and enhancing public engagement. However, due to its lack of transparency and difficulty in making value judgments, AI currently serves primarily as a supportive tool for legislative committees. These committees must scrutinise AI-generated suggestions and decisions with caution, ensuring that value judgments and other critical tasks are performed by humans.

3.3. Can AI identify gaps in legislation?

By Olivia McNally and Rheanne Robles

The issue of legislative gaps is not a modern phenomenon and has been an issue for centuries. The Ancient Romans noted this, stating "neque leges neque senatus consulta ita scribi possunt ut omnis casus qui quandoque in sediriunt comrehendatur".[877] Translated, this means: "Neither the laws nor the senatus consulta can be formulated in such a way as to encompass all of the cases that might arise; it is enough that they encompass those cases that happen frequently".[878] Legislative gaps are not an abnormality within the legislative process. It is impossible for legislators to provide for all circumstances that could lead to 'impeccable law'.[879] This raises the question as to whether AI would be better suited to identifying and addressing legislative gaps.

3.3.1. Why do Legislative gaps arise?

Legislative gaps are quite frequent. Laws are often created and implemented without sufficient knowledge, causing gaps to form, oftentimes going unnoticed.[880] Legislative gaps are a natural phenomenon that are inherent in every legal system. [881] They are shortcomings within the legislative process and have been observed as being caused by the negligence of legislators.[882] However, legislators are mere human beings and it is not possible for even the most perfect of individuals to predict all life situations. American lawyer L.L. Fuller, noted this, holding that "unforeseen circumstances created by life's accidents will always take place under all, even the most carefully created provisions".[883]

Human beings have a certain amount of foresight, but there are limits to how much one can predict. Studies have been conducted by Future Platforms in relation to AI and the future of foresight. It was held that although AI cannot replace human expertise in foresight analysis, it can be of use. It can act as a research assistant to expedite processes and it can act as a springboard for researchers.[884] However

[877] Anatoliy Kostruba et al, 'Legal Gaps: Concept, Content, Problems of the Role of Legal Doctrine in Overcoming them' (2023) Statute Law Review 2 <https://doi.org/10.1093/slr/hmac016> accessed 30 June 2024.
[878] Justin Steinburg 'Mimesis on Trial: Legal and Literary Verisimilitude in Boccaccio's Decameron' (2017) Representations, 139, 118 <https://www.jstor.org/stable/26420612> accessed 30 June 2024.
[879] Kostruba (n 877) 1.
[880] Kostruba et al. (n 877) 2.
[881] Ibid.
[882] Kostruba et al. (n 877) 2.
[883] Ibid.
[884] Max Stucki and Goke Sandal, 'Generative AI and the Future of Foresight' (*Futures Platform*, 2024) <https://www.futuresplatform.com/blog/future-of-generative-ai-foresight#:~:text=AI%20excels%20in%20processing%20and%20analysing%20data%2C%20but,evolve%20to%20validate%2C%20contextualise%2C%20and%20refine%20AI-generated%20insights> accessed 23 August 2024.

overall, much like human beings, AI cannot fully predict the future. It would however serve as a useful tool for legislators to minimise legislative gaps and assist them in their foresight of possible scenarios.

3.3.2. How do Jurisdictions combat the issue of legislative gaps?

Jurisdictions are aware that the creation of faultless legislation is not possible. They have attempted to address the negligence of legislators' foresight by delegating legislation to experts in the area upon which it is based. Legislation is delegated to secondary bodies in various jurisdictions to ensure the gaps missing from primary legislation can be addressed. Such legislation is effective as it allows authorities to issue detailed legislation at great speed and flexibility. It utilises the technical expertise of such authorities, to ensure the most effective legislation possible.[885] This process is used in many jurisdictions worldwide but notably in Ireland, the United Kingdom and the USA.

In Ireland, the Oireachtas, as the main legislative body, delegates power which allows another entity to create secondary legislation to address any gaps in primary legislation. [886] Similarly in the UK, the executive branch is given the power to fill in technical details, removing possible legislative gaps whilst also having the capacity to decide broad issues of policy. [887] The work of the executive is closely monitored by the 'parliamentary scrutiny' process,[888] given the force of such delegated legislation. In the USA, the American Congress, as the principle law making body, delegates a proportion of its legislative powers to fulfil its other functions. In *Wayman v Southard*,[889] Chief Justice Marshall noted the process as allowing delegated legislators to "fill up the details".[890] However, this system of delegation is still heavily reliant on human foresight and as observed, this is not always the most reliable. If AI was utilised in such circumstances, perhaps legislation would be stronger and contain less gaps.

3.3.3. How can AI be of assistance to address legislative gaps?

The process of delegating legislation involves a series of individuals working together to create legislation, more often than not as experts in their field. This helps to maximise foresight and address possible future scenarios. However, if this method was combined with AI, the presence of legislative gaps would be dramatically reduced. AI technologies such as 'Machine Learning Algorithms' can reveal patterns without being programmed with an exact set of rules to identify such patterns. As such AI

[885] Kenny Chng, 'Re-examining Judicial Review of Delegated Legislation' (2024) 44(1) Legal Studies 81, 82 < https://doi-org.may.idm.oclc.org/10.1017/lst.2023.7> accessed 10 July 2024.
[886] Oran Doyle and Tom Hickey, *Constitutional Law: Text, Cases and Materials* (2nd edition, Clarus Press 2019) [8-09].
[887] Hermann Punder, Democratic Legitimation of Delegated legislation—a Comparative View on the American, British and German Law' (2009) 58(2) The International and Comparative Law Quarterly 353, 360 <https://www.jstor.org/stable/20488294> accessed 10 July 2024.
[888] Kenny Chng, 'Re-examining Judicial Review of Delegated Legislation' (2024) 44(1) Legal Studies 81, 82 <https://doi-org.may.idm.oclc.org/10.1017/lst.2023.7> accessed 10 July 2024.
[889] Wayman v Southard 23 U.S.1(1825).
[890] Lee Epstein, *Constitutional Law for a Changing America: Institutional Powers and Constraints* (7th edition, CQ Press 2010) 254.

could identify possible scenarios before they have been recognisably established.[891] It could make predictions about possible scenarios, and as such reduce gaps in legislation.

It has been argued that alone, AI is not sufficient to support high quality foresight processes, but when combined with human knowledge, foresight processes will be strengthened.[892] If a hybrid approach was to be combined with the delegated legislation process, it would assist in creating legislation with as few gaps as possible. Such a system would allow delegated legislators to utilise AI and their own technical expertise.

AI has the capability to be a useful tool legislators can rely upon during the legislative process. Legislative gaps often arise due to a lack of foresight on part of the legislator and AI can be a useful tool to assist in this. AI has the capability to quickly summarise new signals, create a baseline understanding of topics and the knowledge it presents can be used as a very helpful starting point.[893]

The creation of legislation is a complex process where foresight is required to account for a range of scenarios. It is difficult for legislators to account for all events, although delegated legislation has assisted in this. AI cannot replace human expertise in foresight as established by Future Platforms study,[894] but it is clear that it will be a very useful tool for legislators. It can inspire and create a solid starting point from which legislators can begin to draft strong pieces of legislation. A hybrid system is possible, where legislators can continue to use their knowledge and expertise, whilst also being assisted by AI to limit the number of legislative gaps that may arise. However, at this time the foresight capabilities of AI would not be adequate alone to address legislative gaps without the interference and supervision of legislators themselves.

AI, as a modern technology, is already being used globally in multiple sectors in order to serve various purposes. Reflecting on AI's conceivable tools, broad fields of application, usage scenarios and needs, it is reasonable to expect that AI assistance could also be applicable to identify gaps in legislation.

The extensive scope and volume of data that make assessing legislation a difficult problem for humans makes it an ideal challenge for AI. In this case, the less dependent version of using an AI assistant would be for a legislator to merely use an AI-generated database to formulate their own conclusions - doing manual work such as language processing, cross-referencing, comparing and identifying legislative gaps themselves. It is thought that the legal domain, which includes a variety of legal texts,

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[891] Amber Geurts, Ralph Gutknecht, Philine Warnke, Arjen Goetheer, Elna Schirrmeister, Babette Bakker, Svetlana Meissner, 'New perspectives for data-supported foresight: The hybrid AI-expert approach' (2022) 4 Futures & Foresight Science 2 < https://doi.org/10.1002/ffo2.99> accessed 23 August 2024.
[892] Ibid.
[893] Panu Kause, 'Our take on AI and foresight: the steps we are taking today' (*Fibres*, 2023) <https://www.fibresonline.com/blog/ai-in-foresight> accessed 23 August 2024.
[894] Max Stucki and Goke Sandal, 'Generative AI and the Future of Foresight' (*Futures Platform,* 2024) <https://www.futuresplatform.com/blog/future-of-generative-ai-foresight#:~:text=AI%20excels%20in%20processing%20and%20analysing%20data%2C%20but,evolve%20to%20validate%2C%20contextualise%2C%20and%20refine%20AI-generated%20insights> accessed 23 August 2024.

legislation, case law and scholarly works, could be efficiently organised and analysed with the help of AI technologies.[895]

3.3.4. Does AI have the capability to identify gaps?

AI has already made various successes in other important fields in recent years. During the COVID-19 pandemic, many reports have discussed the utility of AI approaches in the prioritisation, delivery, surveillance, and supply chain of drugs, vaccines and non-pharmaceutical interventions.[896] For example, during the rapid development of vaccines such as Pfizer, AI played a key role in the process by helping to identify particular molecular 'targets' on the virus where vaccines may act. Specifically, machine learning was used to develop programmes that predict antigen presentation vital to vaccine-induced immunity.[897] The question is whether or not the same advancements can be made with AI assistance to address legislative gaps.

3.3.5. AI's current involvement in the legislative process

In actuality, governments across the globe have already expanded AI's capabilities into the sphere of legislative activities. Between 2010 and 2015, Ireland developed a simulation tool, the Innovation Policy Simulation for the Smart Economy, which generated scenarios to foster greater innovation in Ireland. It used a version of the SKIN platform, a multi-agent-based model AI, which used data from patents, knowledge flows and other economic data to model basic markets while introducing complex firm knowledge dynamics into them. Irish lawmakers were able to simulate the effect of legislation and policy before rolling them out.[898]

Additionally, in 2019, the Brazilian Chamber of Deputies launched Ulysses, a set of AI tools to improve the legislative process and to interact with citizens.[899] Ulysses uses machine learning to analyse large volumes of documents and data and can thematically organise electronic surveys, citizen input throughout the legislative cycle and more.[900] The Ulysses project consists of multiple corpora, such as the Ulysses-RFCorpus - a Relevance Feedback corpus for legislative information retrieval.[901] Naturally,

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[895] Elena Leitner et al., 'A Dataset of German Legal Documents for Named Entity Recognition' in Proceedings of the Twelfth Language Resources and Evaluation Conference (European Language Resources Association 2020) 4478.
[896] Gunjan Arora et al., 'Artificial Intelligence in Surveillance, Diagnosis, Drug Discovery and Vaccine Development against COVID-19' (2021) 10(8) Pathogens 1048.
[897] Binbin Chen et al., 'Predicting HLA class II antigen presentation through integrated deep learning' (2019) 37(11) Nature biotechnology 1332-1343.
[898] Nesta, 'Innovation Policy Simulation for the Smart Economy' (*Nesta,* 2024) <https://www.nesta.org.uk/feature/smarter-policy-through-simulation/innovation-policy-simulation-for-the-smart-economy/> accessed 18 July 2024.
[899] Francisco Herrero, 'The Red Information Magazine' (*The Red Information Magazine Issue,* 15 March 2021) <https://issuu.com/red_innovacion/docs/edicion_24_marzo_2021> accessed 17th July 2024.
[900] Jorne Lucke et al., 'Using Artificial Intelligence for Legislation - Thinking About and Selecting Realistic Topics' (2022) <https://asgp.co/wp-content/uploads/2023/10/Academic-article-on-using-AI-for-legislation.pdf> accessed 18 July 2024.
[901] Douglas Vitório et al., 'Building a Relevance Feedback Corpus for Legal Information Retrieval in the Real-Case Scenario of the Brazilian Chamber of Deputies' (*Researchgate*, 2023) <https://www.researchgate.net/deref/https%3A%2F%2Fdoi.org%2F10.21203%2Frs.3.rs-3150362%2Fv1?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19> accessed 19 July 2024.

this automatisation of the document retrieval process was used by the Brazilian Chamber of Deputies to efficiently access legislative, judicial and academic sources as part of the law-making process.[902]

3.3.6. The logistics of a purely AI-based approach

In this regard, we can establish that AI assistance being used by human drivers is a relatively new yet established norm in the industry, i.e. information-oriented legimatics. However, AI-oriented legimatics begs the question of whether an AI has the capacity to identify legal gaps, which would require accurate insight into how specific legal problems are solved and what kinds of specific knowledge are used during the problem solving.[903]

It is believed by academics that currently, a purely AI-based approach is not yet productive enough for the building of an automated IT drafting system that assists legislators for the duration of their decision processes. However, as we can see, the AI-based approach can support information-oriented approaches to build IT tools for specific parts of legislative drafting or decision support systems for the application of legislation.[904] An example of this is the Dutch LEDA system, which is an AI-integrated authoring system, i.e. an IT system that assists legislators in solving legislative problems based on legislative information and guides them through a drafting checklist to see whether or not requirements such as Directives are being met.

3.3.7. Implications of AI in the legislative process

Central to the question are the legal and ethical implications of allowing AI to have a hand in the legislative process. With recent legislation in development governing AI such as the European Union's AI Act, there is much contention about whether or not current legislative safeguards are sufficient.[905] For example, CDT Europe's Counsel and Director of the Equity and Data Programme Laura Cabrera, commenting on the EU AI Act, notes that "there are too many exemptions that could lead to harmful AI systems posing serious risks to citizens, particularly those in vulnerable situations such as at borders."[906]

Ultimately, the question arises - how could we allow AI to identify gaps in legislation when the legislation governing AI itself is widely thought to be insufficiently safeguarded? Paradoxically, some believe that AI is more than capable of answering this legislative gap itself. In 2023, Senator for

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[902] Ellen Souza and others, 'An Information Retrieval Pipeline for Legislative Documents from the Brazilian Chamber of Deputies' in Frontiers in Artificial Intelligence and Applications, Volume 346: Legal Knowledge and Information Systems (IOS Press 2021) 119 <https://doi.org/10.3233/FAIA210326> accessed 19 July 2024

[903] Wim Voermans 'Computer-assisted legislative drafting in the Netherlands: the LEDAsystem' (*IAL-online*, 2019) <https://ial-online.org/wp-content/uploads/2019/07/Voermans-Legimatics.pdf> accessed 19 July 2024.

[904] Ibid.

[905] A E Berktaş and S B Feyzioğlu, 'Regulating AI Against Discrimination: From Data Protection Legislation to AI-Specific Measures' in M Kılıç and S Bozkuş Kahyaoğlu (eds), *Algorithmic Discrimination and Ethical Perspective of Artificial Intelligence* (*Springer*, 2024) <https://doi.org/10.1007/978-981-99-6327-0_4> accessed 19 July 2024.

[906] Center for Democracy and Technology, 'Landmark EU AI Act Sets Benchmark for AI Regulation, but Fails to Meet the Bar on Human Rights Protection' (*CDT*, 2024) <https://cdt.org/press/landmark-eu-ai-act-sets-benchmark-for-ai-regulation-but-fails-to-meet-the-bar-on-human-rights-protection/> accessed 19 July 2024.

Massachusetts Barry Finegold introduced a bill titled "An Act drafted with the help of ChatGPT to regulate generative artificial intelligence models like ChatGPT."[907] Finegold explains that this generative AI was able to assist in writing the bill, modelled on a longer data privacy law also introduced by Finegold.[908] However, the process required multiple prompts and language cleanup in order to train the AI on Massachusetts's general laws.[909]

3.3.8. The ethical concerns of AI legislative involvement

Regardless, allowing AI to identify gaps in legislation begs substantial legal and ethical implications that must be addressed before allowing it more leverage in legislative processes. As John Stuart Mill wrote, "Our moral faculty is a branch of our reason."[910] Ethicists have understood key ethical concepts such as agency, virtues, rights and morality as almost exclusive to human cognitive ability and reasoned behaviour.[911] In the same vein, the common conception is that AI systems cannot make value judgements - they can only determine the most optimal choice for the given values and assumptions that humans input and specify. Although as previously stated, AI has the capabilities to aid in identifying legislative gaps such as creating legal databases and making predictions, human oversight is vital to ensure the inputs and outputs remain agreeable - it seems that one need not, and most likely cannot, implant ethics into machines.[912]

3.3.9. Conclusion

Despite traditional methods of avoiding legislative gaps such as expert analysis, consultation groups and delegated legislation, humans have been unable to predict and address every legislative gap that arises. This begs the question of whether AI assistance can be capitalised on in order to address legislative gaps that are otherwise blind to the human eye. Human usage of AI smart assistance is an already established legal norm that helps aid legislators with the likes of legal databases. However, we have yet to witness an occurrence of an AI autonomously and correctly identifying legislative gaps themselves.

3.4. Can AI be used to anticipate effects of and shortcomings within new legislation?
By Isobel McGlynn and Natasha Sinha

Legislative changes affect all members of society, having direct and indirect influences on societal change and acting as a '*catalyst*' for societal transformation[913]. For this reason, predicting the effects of new legislation is of significant interest to society. Additionally, predicting the effects of new legislation

[907] An Act drafted with the help of ChatGPT to regulate generative artificial intelligence models like ChatGPT (2023) S. 31.
[908] An Act establishing the Massachusetts Information Privacy and Security Act (2023) S. 227.
[909] Mohair Chaterjee, 'AI just wrote a bill to regulate itself' (*Politico,* 19 July 2023) <https://www.politico.com/newsletters/digital-future-daily/2023/07/19/why-chatgpt-wrote-a-bill-for-itself-00107174> accessed 19 July 2024.
[910] John Stuart Mill, On Liberty and Other Essays (2nd edn, Oxford University Press 2008).
[911] Markus Dubber and Frank Pasquale, *The Oxford Handbook of Ethics of AI* (Oxford Handbooks, 2020).
[912] Amitai Etzioni and Oren Etzioni, 'Incorporating Ethics into Artificial Intelligence' (*DOI*, 2017) <https://doi.org/10.1007/s10892-017-9252-2> accessed 19 July 2024.
[913] 'What is Important of Law in Society' (*Legal Desire*) <https://legaldesire.com/article-importance-of-law-in-society/> accessed 16 July 2024.

is crucial for several reasons including understanding potential outcomes of decisions by having informed decision-making, mitigating potential risks, allocating resources appropriately, and stabilising economic growth. Traditionally, governments have used various methodologies and tools to predict the different resultant impacts of new legislation, including economic modelling, costs-benefit analysis, regulatory impact analysis, and pilot programs (smaller scale policies). This chapter explores the technical capabilities of using AI to predict the effects and shortcomings of new legislation demonstrating the limitations of this.

3.4.1. Technical Capabilities of AI to Predict Effects and Shortcomings of Legislation

Artificial intelligence can be an influential tool used to predict the effects of new legislation. The AI functions furthering this aim consist of natural language processing, predictive modelling, simulation, scenario analysis and the collection of vast amounts of data. The use of AI enables higher volumes of data to be analysed identifying patterns '*beyond the capacity of human interpretation*'[914], beneficial when processing large amounts of conflicting data. Whilst natural learning models and machine-based learning have been present in society for decades, the adoption of these technologies into law firms is a recent phenomenon[915], but nonetheless a significant development. Deloitte reports that machine learning models (MLM) can find patterns in inputs and outputs without scientific explanation identifying patterns *'invisible to the human eye'*[916]. The benefit of MLM's predicting the effects of legislation is that they can not only say which outcomes are likely, but which are most likely to occur, aiding in producing the most suitable policy recommendation[917].

For instance, in a study by Parinandi it was demonstrated how AI can be leveraged to predict the likelihood of further economic impacts due to new legislation, using economic indicators. Further research revealed that AI has the technical capability to determine the levels of support regarding new legislation developing the *'political viability'* of proposed laws[918].
However, as is accompanied with any AI model, there are concerns over a lack of data available, biases within the algorithms, privacy concerns and a lack of safeguards. Firstly, not only does AI require more cybersecurity, but it is increasingly essential when the risk of adversaries manipulating the outcomes of these AI predictive models is a potential[919]. In addition to this, the microscopic abilities of AI, particularly when dealing with political and legislative data, means that the prevention of biases in

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[914] Kathleen McKendrick, *Artificial Intelligence Prediction and Counterterrorism* (Artificial Intelligence Prediction and Counterterrorism, 2019) International Security Department Research Paper.
[915] Valeri Craigle, 'Law Libraries Embracing AI' in Ellyssa Valenti (ed), Law Librarianship in the Age of AI (University of Utah College of Law Research Paper, 2019) <https://ssrn.com/abstract=3381798 or http://dx.doi.org/10.2139/ssrn.3381798> accessed 24 December 2024.
[916] Joe Marlani, 'AI for Smarter Legislation' (*Deloitte*, 22 September 2022) <https://www2.deloitte.com/us/en/insights/industry/public-sector/artificial-intelligence-can-benefit-the-legislative-process.html> accessed 16 July 2024.
[917] Marlani (n 916).
[918] Srinivas Parinandi, Jesse Crosson, Kai Peterson and Sinan Nadarevic, 'Investigating the politics and content of US State artificial intelligence legislation' (2024) 26(2) Business and Politics 240
[919] Kira Systems <https://kirasystems.com/> accessed 18 July 2024.

training data is significant[920]. To fully determine the practical and wider implications of using AI to predict the effects and shortcomings of new legislation, three case studies featuring Kira Inc, an AI powered bill analyser, Lex Machina, and Cognitiv+ will be analysed further.

3.4.2. Kira Inc

Kira Systems is a machine learning software that identifies, extracts and analyses content in contracts and documents. The system is utilised by a number of firms, like Deloitte, Freshfields Bruckhaus Deringer, Clifford Chance, Latham & Watkins and Allen & Overy, amongst others. Kira has numerous functions, like due diligence, deal points, compliance, consulting, and knowledge management, which can, in varying degrees, be used to identify the effects and shortcomings of legislation. For instance, the due diligence function can identify and extract key provisions across contracts, analyse data points and compare contracts to a form. This can be used to summarise the principal effects and shortcomings of a green or white paper for further analysis by legislators. Additionally, in extracting and comparing data points, this machine can be used to compare the predicted outcomes of proposed legislation to the performance of published legislation. Alternatively, it could predict the impact of a secondary legislation on an Act of Parliament, whether the secondary legislation will make the appropriate changes and have the desired outcome on the Act of Parliament. The deal point and consulting functions, elements of the contract analysis function, enhance visibility into a contract, making it simple to get a quick picture of contract terms. This function could similarly allow legislators to read into the legislation with increased efficiency, to then identify effects and shortcomings of legislation. Additionally, the summary created could be beneficial in presenting the proposed bill to Parliament accurately, training the machine to pick up areas potentially causing traction, which can then be expanded upon and discussed in the Houses.

However, a few problems arise with this form of machine. First, there doesn't seem to be a way that the machine can independently identify effects and shortcomings entirely. All of these functions create digesting material easier for a human on the other end, but ultimately does require some manual labour, rather than automating the whole process. This could be advantageous. The legal field chases social change, and the novel problems that arise resulting from this change requires a personal understanding of the context in which legal decisions must be made. This personal element is notably lacking in AI models, regardless of a speedier process. Regardless, when considering efficiency, which is the primary focus of most AI models, this machine falls short. This machine, like any other AI used in the legislative process, would require vast amounts of data regarding legislation fed into it, as a means of training it. This would mean years of focused data collection regarding the outcome and impact of legislation, which would then have to be catalogued and systematically fed to the AI, with constant trial and error to ensure accuracy, considering the gravity of what the generated responses would be used for.

[920] Jacob Steinhardt, Pang Wei Koh, and Percy Liang, 'Certified Defences for Data Poisoning Attacks' (2017) NIPS <https://www.deloitte.com/content/dam/assets-shared/legacy/docs/insights/2022/gx-NIPS-2017-certified-defenses-for-data-poisoning-attacks-Paper.pdf> accessed 16 July 2024.

3.4.3. AI-Powered Legal Bill Review

The LegalVIEW BillAnalyser[921], created by PNC Bank, is an AI powered tool used to automate and streamline the process of reviewing legal bills. By employing machine learning algorithms, the tool enhances billing guideline compliance, streamlines the process, and improves data quality by identifying patterns and concerns in the data sets. This opposition to the once attorney-led manual processes has the potential to be leveraged to predict effects that potential new legislation poses, beyond human capabilities, through analysis during every stage of development[922]. Additionally, this model not only uses predictive modelling to foresee potential consequences, but this model encapsulates a detailed rigorous assessment, ensuring specific compliance with separate national aims by using *'data-driven*[923]' insights to ensure every set standard is met, identifying concern areas and employing corrective measures.

Whilst this tool, and many other AI mechanisms, are developed to identify patterns within text and data, predicting legislative outcomes requires more sophisticated models specialised in understanding probabilities and unforeseen scenarios, questioning its ability to determine long-term effects of legislation, an essential element of policy and legislative planning. Further to this, transitioning away from human involvement poses concerns in these complex areas where the AI may not be equipped to identify nuances that legal professionals can. Deloitte poses a solution to this issue stating that by collaborating AI with human involvement, ensuring the sole responsibility is not on the AI but in fact overlooked, it has the potential to transform the legal industry whilst preventing potential misuse[924].

3.4.4. Lex Machina

Every 24 hours, Lex Machina collects and processes publicly available court and government data using their natural language processing and machine learning software. They identify key pieces of data, like findings, outcomes, and damages awarded. Certain cases will also be flagged for human review, minimising machine error. This software allows analysis of courts and judges, evaluation of opposing counsel and parties in the matter, which benefits lawyers in better understanding trends and precedents, and how this could affect the outcome of their case. A predictive software like this could analyse effects of, and shortcomings within legislation by collecting data from past legislation, like overall effectiveness, efficiency in correcting the harm it was intended for, the predicted public impact as compared to the actual impact, amongst others. While the human review built into this machine aids in ensuring fairness and a holistic understanding of legal issues, a primary issue is that currently, data pertaining to legislation is not collected or readily available in the same form that Lex Machina uses. Before the

[921] Wolters Kluwer, 'LegalVIEW BillAnalyzer: The leader for AI-powered legal bill review' (*Wolters Kluwer*, 2021) <https://www.wolterskluwer.com/en/expert-insights/infographic-legalview-billanalyzer-leader-ai-powered-legal-bill-review > accessed 12 July 2024
[922] Ibid.
[923] Wolters Kluwer, 'Case study: Commit to compliance to control legal spend at the source' (*Wolters Kluwer*, 2024) <https://www.wolterskluwer.com/en/expert-insights/case-study-commit-compliance-control-legal-spend-at-source> accessed 1 July 2024.
[924] Marlani (n 916)

machine can be trusted to make accurate predictions about legislation that is likely to be passed, a repository of data about all forms of legislation, at all stages, must be built and fed into it for training purposes. Only then can the machine start to assess the effects and weaknesses of legislation.

3.4.5. Cognitv+

Cognitiv+ also uses natural language processing to analyse contract language by identifying key terms and extracting legally relevant clauses. It also has the capacity to create tailored tender proposals, which allows bidding teams to respond with higher success rates. Much of this model functions on the semantics of the language used. Cognitiv+ also utilises AI to extract and convert tabular data into structured formats, eliminating manual re-entry and bolstering deeper document analysis. The combination of the driving software for these products could identify and extract phrases used across pieces of legislation, then compare these with the phrases used in the proposed legislation to predict a success rate. Since this machine reads semantics and predicts reactions, it could prove incredibly helpful when predicting the effects of the legislation on the public, essentially eliminating the human required for the "human touch". Additionally, the tabular data product could analyse collected quantitative data on the effects and shortcomings of the legislation, and then incorporate this into its predictions and reports. While the obvious benefit is reading into the possible reactions garnered from the publication of the legislation, the earlier issue of not having the relevant data arises. Additionally, predicting human nature is not always accurate, as public reaction is always at least slightly incalculable.

3.4.6. Conclusion

A wealth of AI softwares and machines have been produced, that can either be used as they come, or whose coding principles can be extracted to create bespoke AI models to predict the effects and shortcomings of legislation. A combination of the functions discussed in the aforementioned case studies can be used to identify semantics, predict success rates and compare the impact of the proposed legislation to the impact of existing legislation. This would go a long way in improving the efficacy of the legislation and ensuring the impact on the public is as desired. However, as stressed in this chapter, the use of this AI model would not be immediate. Once a system with the suitable needs for predicting the effects and shortcomings of legislation has been built, years of data collection and cataloguing will ensue, followed by rigorous testing to ensure the model is of a good standard, considering the enormity and significance of the information being produced by it. However, the human understanding required to advance the law and address unique legal challenges is absent from these tools. Thus, it can be said that AI may be able to predict the effects and shortcomings of legislation, but this will require the introduction of entirely new processes, which will take years to develop- it is not an instantaneous function that can be implemented in our Parliamentary process.

3.5. How can AI be used to forecast the social and economic effects of new legislation?

By Nia Patel

Artificial Intelligence is fundamentally transforming numerous sectors, including policy analysis, by providing advanced tools for forecasting the social and economic impacts of new legislation. AI's capabilities in data analysis, predictive modelling, simulations, and sentiment analysis offer policymakers nuanced insights into how new laws might affect economies and societies. This essay explores the various applications of AI in legislative forecasting, its benefits, and the challenges that accompany its use, supported by a comprehensive range of references.

One of the most significant advantages of AI in legislative forecasting is its ability to process large volumes of data from diverse sources with speed and precision. Legislative forecasting relies heavily on historical and real-time data, such as economic indicators, public health records, and social media activity. AI excels in gathering and analysing this data, enabling a more integrated view of potential impacts by merging economic, social, and demographic variables. For instance, AI models can examine historical legislative data to identify patterns and relationships between similar laws and their outcomes. This approach provides a holistic forecast of how proposed regulations might play out in real-world scenarios[925].

AI's ability to perform sophisticated data integration is illustrated by its use in analysing complex datasets across different domains. For example, AI-driven data integration has been used to assess the impact of healthcare policies by combining data from electronic health records, insurance claims, and socioeconomic indicators[926]. This comprehensive approach allows for more accurate predictions of how changes in healthcare legislation could affect public health outcomes and economic costs.

Predictive modelling is another area where AI demonstrates significant strength. Machine learning (ML) algorithms, trained on historical data, can predict various outcomes including changes in GDP, employment rates, and inflation. AI-driven predictive models are particularly useful in evaluating the effects of tax reforms or other economic regulations on businesses and households[927]. For instance, regression models can predict how changes in corporate tax rates might influence investment levels, job creation and inflation rates. The continuous update of AI models with new data enhances their accuracy, enabling policymakers to make more informed decisions[928].

Additionally, AI can enhance predictive modelling by incorporating more granular data. For example, AI algorithms have been used to forecast the impact of climate change regulations by analysing data on carbon emissions, energy consumption and industry-specific responses[929]. These models help predict

[925] Keng Siau, Weiyu Wang, 'Building Trust in Artificial Intelligence, Machine Learning, and Robotics' (2018) 31(2) Cutter Business Technology Journal 47.

[926] Ziad Obermeyer, Brian Powers, Christine Vogeli & Sendhil Mullainathan, 'Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations' (2019) Science 366(6464), 447-453.

[927] Susan Athey, 'Beyond Prediction: Using Big Data for Policy Problems' (2017) Science 355.

[928] Sendhil Mullainathan, Jann Spiess, 'Machine Learning: An Applied Econometric Approach' (2017) 31(2) Journal of Economic Perspectives 87.

[929] Maximilian Auffhammer, Veerabhadran Ramanathan, Jeffrey R Vincent, 'Climate Change, the Economy, and the Impacts of Policy' (2013) Annual Review of Environment and Resources 38, 131-163.

how regulatory changes will affect different sectors of the economy, providing a more detailed picture of potential impacts.

Simulations and scenario analyses are valuable tools in legislative forecasting. AI-driven simulations, such as agent-based modelling, allow policymakers to understand how different entities — individuals, businesses, and governments — might interact with new legislation. This approach is crucial for analysing complex systems, such as the effects of minimum wage laws on consumer behaviour, business profitability, and employment rates[930]. System dynamics modelling is another simulation method enhanced by AI. This method examines how policy changes in one area, such as environmental regulations, can create ripple effects across various sectors of the economy, including supply chains and industrial productivity[931].

AI-driven simulations are increasingly used to model the effects of social policies. For instance, simulations have been employed to evaluate the potential impact of universal basic income (UBI) schemes on poverty reduction, labour markets and economic growth. These simulations help policymakers explore various scenarios and assess how UBI might influence different aspects of society[932].

Sentiment analysis is another critical application of AI in legislative forecasting. AI can analyse social media, news articles, and other public forums to gauge public opinion about proposed legislation. By tracking real-time sentiment, AI helps predict how public attitudes might evolve and influence the implementation or modification of laws[933]. For example, AI can assess reactions to proposed environmental regulations on social media to forecast public approval or resistance, allowing legislators to design more acceptable laws or make necessary adjustments[934].

Sentiment analysis extends beyond public opinion to include stakeholder feedback. AI tools can analyse feedback from businesses, advocacy groups, and other stakeholders to provide a comprehensive view of potential reactions to new legislation. This feedback helps policymakers understand the broader implications of proposed laws and adjust their strategies accordingly[935].

AI also enhances traditional economic impact analysis through advanced modelling techniques that incorporate real-time data. Input-output models, which predict how changes in one part of the economy affect others, benefit from AI's ability to handle dynamic and interconnected systems. For

[930] J Doyne Farmer, Duncan Foley, 'The Economy Needs Agent-Based Modelling' (2009) 460 Nature 685.
[931] John Sterman, *Business Dynamics: Systems Thinking and Modeling for a Complex World* (McGraw-Hill Education 2000)
[932] Diego Daruich, Raquel Fernández, 'Universal Basic Income: A Dynamic Assessment' (2024) 114(1) American Economic Review 38.
[933] Bing Liu, *Sentiment Analysis: Mining Opinions, Sentiments, and Emotions* (Cambridge University Press 2015).
[934] James Zou, Londa Schiebinger, 'AI Can Be Sexist and Racist—It's Time to Make It Fair' (*Nature*, 2018) <https://www.nature.com/articles/d41586-018-05707-8> accessed 21 July 2024.
[935]R Binns, K Veeramachaneni, and S Kalyanaraman, 'Fairness and Abstraction in Sociotechnical Systems' in *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (ACM 2018).

instance, AI can assess the impacts of new trade regulations on different industries, global supply chains and employment levels, providing more precise and contextually relevant predictions[936].

Economic impact assessments using AI have been applied to various domains, such as infrastructure projects and healthcare reforms. AI models can evaluate how investments in infrastructure might influence economic growth, job creation, and regional development. Similarly, AI can assess the economic impacts of healthcare reforms by analysing data on healthcare costs, outcomes, and demographic trends[937].

Risk assessment is another area where AI makes a significant contribution. AI models can identify potential risks associated with new legislation, including unintended economic or social consequences. By evaluating historical impacts of similar laws, AI helps policymakers develop strategies to mitigate risks. For example, AI-driven risk assessment models have been used to evaluate the economic impacts of climate policies on industrial productivity and employment[938].

Risk assessment using AI also extends to financial and cybersecurity risks. AI models can predict the potential impacts of financial regulations on market stability and assess vulnerabilities in cybersecurity policies. By providing early warnings and identifying potential risks, AI helps policymakers make proactive decisions and develop risk mitigation strategies[939].

Moreover, AI enhances the ability to communicate complex data through advanced visualisation tools. Interactive dashboards and visualisations enable decision-makers to quickly grasp the potential impacts of legislation under different scenarios. AI-driven decision support systems allow policymakers to experiment with various legislative options and view their predicted effects in real-time, improving transparency and fostering trust in AI-based predictions[940].

Data visualisation using AI extends beyond policy analysis to include public communication. AI tools can generate user-friendly visualisations that help the public understand complex legislative issues and their potential impacts. This improved communication fosters greater public engagement and trust in the legislative process[941].

Despite these advancements, several challenges must be addressed to fully leverage AI's potential in legislative forecasting. Ensuring the accuracy, completeness and timeliness of data is crucial, as poor

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[936] Patrick Bajari, Denis Nekipelov, Stephen P. Ryan, 'Machine Learning Methods for Demand Estimation' (2015) 105(5) American Economic Review 481.
[937] Sarah Miller, K Whittington, 'The Impact of Healthcare Reform on Economic Outcomes' (2019) 102(3) Health Economics Review 502.
[938] Sandra Batten, Rhiannon Sowerbutts, and Misa Tanaka, 'Climate Change: Macroeconomic Impact and Implications for Monetary Policy' in Tomasz Barkowski (ed), *Ecological, Societal, and Technological Risks and the Financial Sector* (July 2020).
[939] E. Chong, H. Han, Y. Sun, 'Financial Stability and Cybersecurity Risks: An AI Approach' (2018) 26(3) Journal of Financial Regulation and Compliance 245.
[940] Hal R. Varian, 'Big Data: New Tricks for Econometrics' (2014) 28(2) Journal of Economic Perspectives 3.
[941] K. Chung and J. Ha, 'Visualizing Complex Legislative Data for Public Communication' (2017) Data Visualization Journal 1.

data quality can lead to misleading forecasts and flawed policies. Transparency in AI models is essential for building trust; policymakers and the public need to understand how predictions are generated[942]. Additionally, addressing biases in AI algorithms is vital to avoid inequitable outcomes. Ensuring AI models are trained on diverse and representative data helps mitigate biases and promote fairness in policy outcomes[943].

AI algorithms must also be continuously monitored and updated to reflect changing conditions and emerging trends. Regular updates ensure that models remain relevant and accurate in the face of evolving social, economic and technological landscapes[944]. Furthermore, collaboration between AI developers, policymakers and other stakeholders is essential to address these challenges and ensure that AI is used effectively and ethically in legislative forecasting.

In conclusion, AI holds immense promise for enhancing the accuracy and comprehensiveness of legislative forecasting. By leveraging its capabilities in data collection, predictive modelling, simulations, sentiment analysis and risk assessment, AI enables policymakers to anticipate the social and economic effects of new laws more effectively. However, addressing challenges related to data quality, transparency and bias is essential to fully realise AI's potential. As AI continues to evolve, it will become an increasingly vital tool in navigating the complexities of policymaking, ultimately contributing to more informed and effective legislation.

3.6. How can AI outputs be overseen and regulated in legislative drafting?

By Katie Birch

The aim of legislative drafting is to achieve the highest quality outcome based upon the wording. Legislation drafted by humans is routinely subjected to prestigious measures which ensure the output they deliver is of the highest quality. The majority of these measures are seen at the drafting stage.[945] AI technology has been a tool used in legislative drafting for some time now, for example, the Dutch LEDA system which is used in ministerial departments.[946] It is useful in the legislative drafting process as it functions on similar neural networks that human drafters use to navigate the complex relations that create legislation.[947]

AI outputs must be overseen and regulated in legislative drafting because the algorithms that the AI creates have advanced to the point that they are likely to pick up negative patterns within their datasets.

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[942] Songul Tolan et al., 'Why Machine Learning May Lead to Unfairness: Evidence from Risk Assessment for Policing' (2021) Journal of Artificial Intelligence Research 1.
[943] Zou (n 934).
[944] Cathy O'Neil, 'Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy' (2016) 78(3) Crown Publishing 272.
[945] Wim Voermans, 'Computer-assisted legislative drafting in the Netherlands: the LEDA-system' (2000) A National Conference on Legislative Drafting in the Global Village.
[946] Ibid.
[947] Elnahan Schwartz, Ittai Bar-Siman-Tov and Roy Gelbard, 'Design Principles for Integrated Legislation Drafting Environment' (2023) SSRN Electronic Journal 1.

They then will use these negative patterns such as biases or false data to create legislative drafts.[948] If this technology is going to be used in the legislative process, there will have to be a high level of confidence that the algorithms are not falling victim to these errors in their data or code.[949]
This text will outline the ways in which AI outputs can be overseen and regulated in legislative drafting. It will be divided into two sections. Section one will explore oversight methods such as human review, testing, and transparency. Section two will explore the regulatory methods such as standards, guidelines, legal frameworks, and will consider ethical lines of thought.

3.6.1. Oversight

When it comes to oversight, human review is often the most obvious option. By AI's very nature human oversight is a fundamental element of its function, as the parameters within which it functions are programmed by humans to begin with.[950] However, when it comes to incorporating the technology into the drafting process, this initial 'oversight' is not enough, and it must be subject to the same standard of oversight as human-based legislative decision making.[951] This will ensure that there is an element of tangible accountability involved with the process. Here, the final decision of relevance will be made by a human, who simply takes into account the output from the AI.[952] In order to achieve this oversight, some academics have suggested multidisciplinary committees of public inquiry that explore government strategy towards using AI in this area. These committees would define the limits of technology usage, indicate how we can move forward with it, and shed more light on what the legal issues are.[953]

However necessary human oversight is in this process, the negatives of over-reliance (or under-educated reliance) on human oversight must be considered. Studies have explored the effectiveness of human oversight in regulating AI outputs, and flaws have been discovered particularly when oversight is conducted in the absence of additional staff training.[954]

Solutions to this deficiency have been provided. One solution involved those who seek to use AI in administration to produce documents justifying its proportionality.[955] Another suggests that oversight be integrated at a higher level. This includes observation of the algorithms themselves and the effect

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[948] Madalina Busuioc, 'AI algorithmic oversight: new frontiers in regulation' (2022) Handbook of Regulatory Authorities, Edward Elgar Publishing 370, 427.
[949] Cary Coglianese and David Lehr, 'Regulating by robot: Administrative decision making in the machine-learning era' (2016) Geo. LJ 205: 1147.
[950] Ibid., 1177.
[951] Marion Oswald, 'Algorithm-assisted decision-making in the public sector: framing the issues using administrative law rules governing discretionary power' (2018) Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 376.2128: 20170359.
[952] Alexander Berman, Karl de Fine Licht and Vanja Carlsson, 'Trustworthy AI in the public sector: An empirical analysis of a Swedish labor market decision-support system' (2024) Technology in Society <https://doi.org/10.1016/j.techsoc.2024.102471> accessed 18 July 2024.
[953] Oswald (n 951).
[954] Ben Green, 'The flaws of policies requiring human oversight of government algorithms' (2022) Computer Law & Security Review 45: 105681.11.
[955] Ibid., 12.

their outputs have on the general public while continually modifying the models to reach the desired outcome.[956] This method essentially uses human oversight as a method for continuous testing and evaluation of both the algorithm and its outputs before the final model is even used in legislative drafting. Methods like this have shown results in areas such as construction which has had extensive research into how to continually check the compliance of automation in buildings.[957]

However, with human oversight at each level of the creation and use of AI in legislative drafting, there remains one final issue: humans' ability to comprehend what they are overseeing. A solution to this might be the establishment of a committee of statistical experts who can interpret and communicate the relationship between the algorithmic methods and outputs to the legal experts involved.[958] This would operate on a continuous basis throughout the testing and evaluation at all levels. Some other academics have even suggested that we do not use any algorithm that has this 'black box' issue within high-stakes administrative processes until we have the skillset to not need additional transparency considerations.[959]

3.6.2. Regulation

When it comes to specific regulations that could ensure AI outputs in legislative drafting are of the highest possible quality, there are many examples to learn from. Possibly the most well-known is the European Commissions (HLEG) on AI's guidelines for trustworthy AI which has been carried through to their AI Act. The guidelines this HLEG recommends for the most trustworthy AI models are human agency and oversight, technical robustness and safety, privacy and data governance, transparency, diversity, non-discrimination and fairness, societal and environmental well-being, and accountability.[960] Although many of these overlap with some of the ideas explored in the previous section, it can be useful in regulation to have a form of 'checklist'.

The EU is not the only body that has put forward a series of guidelines to achieve high-quality AI outputs. Australia as far back as 2004 released principles that should be followed when using automation in governmental decision-making. The US has also taken steps to ensure that its federal agencies use AI responsibly when it comes to governmental decision-making. The Administrative Conference of the US has adopted several guidelines for the use of AI tools which place high importance on issues such as transparency, bias, accuracy, security, and accountability, all of which are highly relevant to legislative drafting.[961] Not only this, but the UK has launched a centre for data ethics

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[956] Ferrari, Fabian, José van Dijck, and Antal van den Bosch, 'Observe, inspect, modify: Three conditions for generative AI governance' (2023) New Media & Society: 14614448231214811. 2.
[957] McGibbney, Lewis John, and Bimal Kumar, 'An Intelligent authoring model for subsidiary legislation and regulatory instrument drafting within the construction and engineering industry' (2013) Automation in construction 121, 4.
[958] Coglianese (n 949).
[959] Madalina Busuioc, 'AI algorithmic oversight: new frontiers in regulation' (2022) Handbook of Regulatory Authorities. Edward Elgar Publishing 470, 481.
[960] High-Level Expert Group on Artificial Intelligence, 'Ethics Guidelines for Trustworthy AI' (*European Commission*, 2019) <https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60419> accessed 09 July 2024.
[961] Cary Coglianese and Lavi M. Ben Dor, 'AI in Adjudication and Administration' (2021) 86 Brook L Rev 791, .832.

and innovation which shall ensure that the data algorithms are trained on are of the highest possible calibre. [962]

There are also legal frameworks which could be considered to regulate the outputs that would be considered in the legislative drafting process. The most effective of such frameworks is the EU General Data Protection Regulation, which includes rights being subject to a limited amount of automated decision-making which could be interpreted as being human oversight within legislative drafting.[963] The UK Social Security Act 1998 on the 'Use of Computers' also contains regulations relating to automation with the idea of making a human overseer the ultimate decision maker.[964]

China has created some of the first regulations regarding generative AI which came into force on 15 August 2023. It contains several oversight instruments that require adequate reporting and filing of algorithms and security assessments.[965]

Standards in the design of algorithms and their outputs are another useful method of regulation. Standards can also be embedded into the underlying code of algorithms by integrating the requirements of the standards and using them as the parameter of variables which the code can produce.[966] This method of regulation is 'code as law' and is championed by scholars such as Lessig. [967] However, this method does not go without its criticisms. Some have argued that this method of regulation would supersede fundamental rights in the sense that legislation should dictate what people should and should not do, and they should have the freedom to make that decision. In the 'code as law' situation, there is no alternative option. [968] Human oversight over legal systems that use AI software has been suggested as a solution to this again, where the legal experts ultimately have the final decision and are merely aided in their drafting process by the AI software.[969]

3.6.3. Conclusion

There is no clear-cut answer as to how we should regulate the outputs AI creates in the legislative process. Ultimately, AI should be used as a tool by the legislature, and it should not be given the final say. However, to ensure that human oversight is still effective, there must be standards for the algorithms themselves, as well as sufficient transparency so that the human overseeing the AI outputs can process how the AI obtained the final decision, and the respective pros and cons. There also needs

[962] Monika Zalnieriute et al., 'From rule of law to statute drafting: legal issues for algorithms in government decision-making' (2021) The Cambridge Handbook of the Law of Algorithms 251.
[963] Ibid.; GDPR (n 23) Art. 22.
[964]Andrew Le Sueur, 'Robot government: automated decision-making and its implications for parliament' in A Horne and A Le Sueur (eds), *Parliament: Legislation and Accountability* (Hart Publishing 2015).
[965] Fabian Ferrari, José van Dijck, and Antal van den Bosch, 'Observe, inspect, modify: Three conditions for generative AI governance' (2023) New Media & Society 2.
[966] James H. Garrett and Steven J. Fenves, 'A knowledge-based standards processor for structural component design' (1987) 2 Engineering with Computers 219.
[967] Lawrence Lessig, 'The law of the horse: What cyber law might teach' (1999) 113 Harvard Law Review 501.
[968] Samer Hassan and Primavera De Filippi, 'The expansion of algorithmic governance: from code is law to law is code' (2017) 17 Field Actions Science Reports 88.
[969] Frank Pasquale, 'A Rule of Persons, Not Machines: The Limits of Legal Automation' (2019) 87 Geo Wash L Rev 1.

to be accountability for the senior levels of an organisation who utilise automation in this area, as this is a common threat in almost every nation's guidelines for trustworthy AI.

3.7. How can AI improve transparency and public access to the legislative process?

By Kian Kianzad and Elliot Baude

3.7.1. How can AI improve Transparency to the Legislative Process (by Elliot Baude)

Artificial Intelligence has a great potential of increasing public access to the law-making process in many ways, thereby creating a bridge between the legislature and the general public. This active engagement can be achieved in different ways as will be discussed in this article. "The Law is the expression of the general will"[970] states the French declaration of the rights of human and of the citizen. But can we truly say that people understand the Law? We can for sure answer that question in the negative form. Indeed as shown in a study, most of the population understands it differently[971].

For instance, civil proceedings create different problems in application almost as much within vulnerable persons as higher capability respondents. It illustrates the opacity of Law for society as whole. It shows that a similar legal issue might be understood in several ways making it difficult to fully understand with no legal background. This study aims to demonstrate that artificial intelligence might help to facilitate the public's understanding of the legislative process by rendering it more transparent.

Can AI make the law more understandable? Every legislative process starts with the election of the people representing the population. In India, an AI was created to translate the programs of every candidate into several languages. Making it more accessible for its citizens.[972] They went even further by creating a speech synthesiser with AI to make politics and law accessible to people without reading education.[973]

We have to keep in mind that AI is accessible through technology and technology is costly. As a consequence, people who have no access to education might not have access to technology either. Hence, the use of AI might also have a negative impact by improving the gap between low and higher classes. Even at a greater scale between developed and developing countries, due to the concentration of searchers in certain geographical areas [974].

On the other hand, AI might improve the trustworthiness between Lawmakers and citizens by

[970] Declaration of human and civil rights (26th of August 1789).
[971] Professor Pascoe Pleasence, Dr. Nigel J. Balmer and Dr. Catrina Denvi, 'How people understand and interact with the Law' (Cambridge 2015) 16.
[972] Deepak Khemani, 'A Perspective on AI Research in India', (2012) 33(1) AI Magazine 96.
[973] Khemani (n 972).
[974] David Rotman, 'How to solve AI's inequality problem' (*MIT Technology Review*, 2022) <https://www.technologyreview.com/2022/04/19/1049378/ai-inequality-problem/> accessed 22 July 2024.

improving their interaction to make it faster and easier.[975] This allows a personalized link between elected leaders and electors. It has been established that some electors who had direct contact with elected leaders through answers generated by AI could not tell the difference with a message written by a human being.[976] It can be analysed on both sides, if the answer is honest it can improve the trustworthiness within the politics by making their work more transparent and accessible. The negative point is that it can make the legislative process less human and increase the gap between politics and citizens because no answer will be genuinely personal. On a logistical level, it can only be an improvement because elected people cannot answer to every single one of their electors.

AI might be a way of control of the representation by the citizens. Indeed a fascinating Artificial intelligence had been created in Brazil to control the spending of the state from open and private databases.[977] Opereseao *Operação Serenata de Amor*' is open source which means that everyone can contribute and it is controlled by a staff of eight people who can ask for clarification from the person who added data.[978] It is an effective way of control because the newspapers do not hesitate to use the AI to interrogate elected officials.[979]

Also, AI can be really useful in making law itself more transparent in its understanding by the citizens. For instance, in France 38% of the people who experienced a legal problem felt badly informed[980] and 58% percent thought that they did not receive all the help from experts they needed.[981] That is why deploying AI in the legal process might improve the transparency of the Law. Indeed it had been demonstrated by the British Law Society that a general LLM (Large Language Model) such as Chat GP4 might answer broadly any general question of Law. But for a specific answer, we need a customised AI that could give a sufficiently specific answer but needs to be supervised by a Lawyer but could give a great overview to the citizen who wishes to get informed about the legislative system.[982] The users need to get informed beforehand on what type of AI they are using.

Finally, on the point of transparency as stated earlier, law might be hard to understand because of its language which might appear complex for people who have no legal background. The idea to keep in mind is a need for transparency and understanding from the user of the system that is using the AI. To

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[975] Jess Hohenstein and Malt Jung, 'AI as a moral crumple zone: The effects of AI-mediated communication on attribution and trust' (2020) 106 Computers in Human Behavior.
[976] Sarah Kreps, Miles McCain, and Miles Brundage, 'All the News That's Fit to Fabricate: AI-Generated Text as a Tool of Media Misinformation' (2020) Journal of Experimental Political Science 104.
[977] Paulo Savaget, Tulio Chiarini, Steve Evans, 'Empowering political participation through artificial intelligence Science and Public Policy' (2019) 46(3) Science and Public Policy 369.
[978] Operação Serenata de Amor
[979] Savaget et al (n 977) [11] Sarah Chamness Long, Alejandro Ponce, Elizabeth Andersen, Global insights on access to justice, World Justice project, p 43
[980] Sarah Chamness Long, Alejandro Ponce, Elizabeth Andersen, 'Global insights on access to justice' (2019) World Justice project 43 <https://worldjusticeproject.org/sites/default/files/documents/WJP%20Access%20to%20Justice-Online%20Version%20%281%29.pdf> accessed 22 July 2024.
[981] Ibid.
[982] Richard Susskind, 'AI: opening the door to justice' (*Society for Computer and Law*, 16 August 2023) <https://www.scl.org/12966-ai-opening-the-door-to-justice/> accessed 22 July 2024.

limit the chance of a predictive AI that can invent cases.[983] For that there is a need to regulate and make the coding transparent and accessible concerning the targeted profiles, the type of algorithm, and how the decision is taken. That is why, especially in AI we need to implement fairness, accountability, transparency, and ethics.[984] This permits limiting the amount of biased decisions that could be taken against a religion, a gender [985] or an ethnicity [986] in court for instance. Indeed as shown, AI has a tendency to repeat the same type of discrimination that used to take place in trials. A question remains: is an algorithm capable of being more accessible than understanding Law? The question is hard to explain but a divulgation of the databases used by the creator of the AI is necessary. Indeed due to the level of risk linked the repercussions that such utilisation could have on the user who wants to get information about justice and need adequate answers concerning an essential public service.[987]

Furthermore in Europe there is a requirement before releasing the Ai on the market to make it available to the national institution to make it in line with regulations to protect the consumer.[988]

As we saw, AI using can improve the understanding of Law by citizens in many ways and help them partly control the Lawmaker but it needs to be used carefully and the regulation around it arrives slowly.

3.7.2. How can AI improve Public Access to the Legislative Process (by Kian Kianzad)

The legislative process, currently considered to be shrouded in complexity and bureaucracy,[989] is now undergoing a profound transformation following the emergence of artificial intelligence. While it has been suggested that AI could significantly enhance public access to lawmaking,[990] it is ultimately unclear how effective or practical this is in reality.[991] That said, there is a substantial promise in leveraging AI for this purpose. To comprehensively assess the practical 'purpose', we must examine AI's potential benefits and challenges across areas such as information accessibility, language simplification, and democratic engagement - while also addressing ethical concerns and implementation hurdles - to determine its true potential.

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[983] Mata v. Avianca [2022] Inc Case no.: 22-cv-1461 (PKC).
[984] Isa Inuwa-Dutse, 'FATE in AI: Towards Algorithmic Inclusivity and Accessibility' (2023) Proceedings of the 3rd ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO '23), Association for Computing Machinery, Article 13.
[985] Jeffrety Dastin, 'Amazon scraps secret ai recruiting tool that showed bias against women' (*Reuters*, 11 October 2018) <https://www.reuters.com/article/world/insight-amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK0AG/> accessed 22 July 2024.
[986] A. Julia, L. Jeff, M. Surya, K. Lauren, 'Machine bias: There's software used across the country to predict future criminals and it's biased against blacks' (*ProPublica*, 23 May 2016) <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing> accessed 22 July 2024.
[987] EU AI Act (n 2).
[988] Ibid., Article 6.
[989] Lord Justice Haddon-Cave, 'ENGLISH LAW AND DESCENT INTO COMPLEXITY' (*Judiciary.uk*, 17 June 2021)<https://www.judiciary.uk/wp-content/uploads/2021/07/ENGLISH-LAW-AND-DESCENT-INTO-COMPLEXITY-1.pdf> accessed 14 July 2024.
[990] Tanja Sophie Gesk and Michael Leyer, 'Artificial intelligence in public services: When and why citizens accept its usage' (2022) 39(3) Government Information Quarterly 101704.
[991] Ibid.

3.7.2.1. Barriers to Public Access in the Legislative Process

Even though there are now more lawyers than ever before,[992] the law, and by extension the legislative process, has arguably never been less accessible. The increasing complexity of legislation,[993] coupled with rising legal costs,[994] means that many citizens find themselves unable to navigate the lawmaking process effectively. For instance, in recent years, many countries have substantially cut legal aid funding,[995] making it increasingly difficult for low-income individuals to access vital information about legislation or participate in advocacy efforts.

In the UK, for example, legal aid spending was cut by over £950 million since 2010, leaving many unable to afford legal services.[996] This inaccessibility has a profound impact on citizens' lives, with over 64% of respondents believing services for both civil and criminal matters have become increasingly 'inaccessible' over the past 10 years.[997] This troubling trend underscores the importance of a well-functioning justice system, which is fundamental to maintaining social order and reinforcing civic values and norms. The cornerstone of the rule of law is the principle that legislation must be accessible to all citizens.[998] However, the current legal landscape, characterised by increasing complexity and limited affordability, poses a significant threat to this foundational principle.

While legal texts are technically available through online search engines, mere access to information does not guarantee understanding.[999] The complexity of legal terminology creates significant barriers for citizens attempting to comprehend their rights and responsibilities. A recent survey of over 2,000 British adults found that 19% struggle to understand the law and feel disempowered from seeking justice[1000] - highlighting the profound disconnect between the legal system and the public it serves. This

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[992] Jonathan Wolf, 'Law Schools Are Building Another Giant Lawyer Bubble Destined To Burst In The Legal Job Market' (*Abovethelaw*, 4 August 2021) <https://abovethelaw.com/2021/08/law-schools-are-building-another-giant-lawyer-bubble-destined-to-burst-in-the-legal-job-market/> accessed 15 July 2024.

[993] Haddon-Cave (n 989).

[994] Clio, 'UK legal industry to raise fees and work longer hours in 2023' (*Clio*, 20 February 2023) <https://www.clio.com/uk/about/press/uk-legal-industry-to-raise-fees-and-work-longer-hours-in-2023/> accessed 14 July 2024.

[995] The Law Society, 'A decade of cuts: Legal aid in tatters ' (*Lawsociety.org.uk*, 31 March 2023) <https://www.lawsociety.org.uk/contact-or-visit-us/press-office/press-releases/a-decade-of-cuts-legal-aid-in-tatters> accessed 16 July 2024.

[996] Owen Bowcott, 'Legal aid: how has it changed in 70 years?' (*Theguardian*, 26 December 2018) <https://www.theguardian.com/law/2018/dec/26/legal-aid-how-has-it-changed-in-70-years> accessed 15 July 2024.

[997] The Law Society, 'Nearly two thirds of lawyers believe access to justice has worsened over the last decade' (*Lawsociety.org.uk*, 6 April 2023) <https://www.lawsociety.org.uk/contact-or-visit-us/press-office/press-releases/nearly-two-thirds-of-lawyers-believe-access-to-justice-has-wo rsened-over-the-last-decade> accessed 15 July 2024.

[998] Lisa James and Jan van Zyl Smit, 'The rule of law: what is it, and why does it matter?' (*Consitution-unit.com*, 15 December 2022) <https://constitution-unit.com/2022/12/15/the-rule-of-law-what-is-it-and-why-does-it-matter/> accessed 15 July 2024.

[999] Office of the Parliamentary Counsel, 'When Laws Become Too Complex: A review into the causes of complex legislation' (March 2013) <https://assets.publishing.service.gov.uk/media/5a7a2ce9e5274a34770e4c80/GoodLaw_report_8April_AP.pdf>accessed 7 November 2024.

[1000] Today's Wills and Probates, '1 in 5 don't understand British law' (*Todayswillsandprobates.co.uk*, 5 November 2021) <https://todayswillsandprobate.co.uk/1-in-5-dont-understand-british-law/> accessed 7 November 2024.

comprehension gap particularly affects engagement with the legislative process, as citizens struggle to understand how laws are created, modified, or repealed, and even less so, how they might influence these processes. Without addressing these barriers to legal literacy, we risk undermining the fundamental principle that justice should be accessible to all, regardless of socioeconomic status.[1001] Improving public legal education and simplifying legislative language are therefore crucial steps toward meaningful civic engagement with the law.

3.7.2.2. AI as a Tool for Improved Public Access and Information Retrieval

The current situation calls for innovative solutions to make the law more accessible and understandable to all citizens, regardless of their financial means or legal expertise. It is in this context that AI emerges as a potentially transformative tool for improving public access to the legislative process and legal information.

For instance, AI-powered information retrieval and organisation systems can revolutionise how legislative information is accessed and interpreted.[1002] These systems can leverage natural language processing to understand and respond to queries posed in everyday language, making complex legal concepts more accessible to the general public.[1003] By analysing vast amounts of legal data rapidly and accurately, AI can provide relevant, up-to-date information tailored to individual needs, allowing laypeople to obtain clear, concise answers to their legal questions without relying on costly legal experts for basic information. This is significant as it essentially democratises access to legal knowledge, breaking down traditional barriers to understanding legislation. This democratisation is particularly valuable for underserved populations who can often face significant challenges in navigating the legislative process.[1004] It is in this context that AI has the potential to significantly reduce inequality in access to justice,[1005] empowering citizens from all walks of life to better understand and engage with the legislative process.

Similarly, AI-powered advanced search algorithms for legislative databases can significantly improve how citizens find and track relevant legislation.[1006] Unlike traditional keyword searches, these systems would be capable of grasping nuanced legal concepts and the inter-relationships between different

[1001] Lisa James and Jan van Zyl Smit, 'The rule of law: what is it, and why does it matter?' (*Consitution-unit.com*, 15 December 2022) <https://constitution-unit.com/2022/12/15/the-rule-of-law-what-is-it-and-why-does-it-matter/> accessed 15 July 2024.
[1002] Carlo Sansone and Giancarlo Sperlí, 'Legal Information Retrieval systems: State-of-the-art and open issues' (2022) 106 Information Systems 101967.
[1003] Ibid.
[1004] Ian Thomas, 'Addressing the Under-Representation in the Criminal Justice System' (*Blackhistorymonth.org.uk*, 2023) <https://www.blackhistorymonth.org.uk/article/section/cjs-careers/addressing-the-under-representation-in-the-criminal-justice-system/#:~:text=Educational%20and%20socioeconomic%20barriers%20can,ability%20to%20access%20the%20profession> accessed 14 July 2024.
[1005] Mikael Persson and Anders Sundell, 'The Rich Have a Slight Edge: Evidence from Comparative Data on Income-Based Inequality in Policy Congruence' (2024) 54(2) British Journal of Political Science 514.
[1006] Clare Fraser, 'AI: opening the door to justice' (*Lawscot.org*, 14 August 2023) <https://www.lawscot.org.uk/members/journal/issues/vol-68-issue-08/ai-opening-the-door-to-justice/> accessed 15 July 2024.

pieces of legislation.[1007] This contextual understanding would provide more precise and relevant search results, potentially uncovering connections that even legal professionals might miss.[1008] This would not only allow citizens to quickly find related bills, but it may also help them to understand the broader context of legal changes. The implications of this are profound; by automating the categorisation of legislation and amendments, AI could reveal patterns and trends in lawmaking that were previously obscured. For instance, it might identify correlations between seemingly unrelated bills, exposing hidden legislative agendas or unintended consequences of proposed laws.

This level of insight is significant as it not only would enhance public understanding of the legislative process by providing clear, contextual information about how new bills relate to existing laws and ongoing legislative trends, but it would also allow citizens to spot potential conflicts or inconsistencies in proposed laws as the AI system could highlight contradictions between new proposals and existing statutes, or flag when a bill might have unexpected effects in seemingly unrelated areas of legislation.

Moreover, real-time updates on bill status could fundamentally change the dynamics of public engagement with lawmaking.[1009] Despite all of this, however, as citizens gain access to more legislative information, there is a risk of cognitive overwhelm.[1010] As such, AI systems would need to be carefully designed to present information in digestible formats without oversimplifying complex issues. This said however, the potential benefits of AI in enhancing legislative transparency and public engagement, in my opinion, outweigh these challenges. By providing citizens with access to the legislative process, AI could foster a more informed and active citizenry. This, in turn, could lead to more responsive and accountable governance, as lawmakers become more aware of public sentiment and engagement on specific issues.

Furthermore, Natural Language Processing (NLP) technologies can also play a crucial role in making legal language more accessible to the general public.[1011] AI-driven summarisation of complex legal texts, translation of legislative jargon into plain language, and multilingual support for diverse populations can help break down the barriers of legal complexity that often deter public engagement.[1012] That said though, given the nuanced nature of most legal terminology, there's a risk that oversimplification could lead to misinterpretations of the law, potentially causing more harm than good. Despite these potential shortcomings though, the benefits of NLP in legal contexts could outweigh the risks if implemented thoughtfully. By making legal language more accessible, NLP technologies could significantly increase civic participation in the legislative process. This is because citizens who better understand the laws that govern them are more likely to engage in informed debate, provide meaningful feedback on proposed

[1007] Ibid.
[1008] Harry Surden, 'Machine Learning and Law' (2014) 89 WASHINGTON LAW REVIEW 87.
[1009] Fraser (n 1006).
[1010] Tejal K Gandhi and others, 'How can artificial intelligence decrease cognitive and work burden for front line practitioners?' (2023) 6(3) JAMIA Open 79.
[1011] Jim Holdsworth, 'What is natural language processing?' (*IBM,* 6 June 2024) <https://www.ibm.com/topics/natural-language-processing> accessed 16 July 2024.
[1012] Barry Wang, Daniel Lee Aniceto and Jacky Zeng, 'The Immediate Future of AI in Law: An Overview of Natural language Processing Algorithms' (*Suls.org.au*, 25 September 2020) <https://www.suls.org.au/citations-blog/2020/9/25/natural-language-processing> accessed 15 July 2024.

legislation, and hold their representatives accountable.[1013] The challenge for developers and legal experts therefore is to create NLP systems that can strike a balance between simplification and accuracy. This might involve developing tiered systems that offer different levels of simplification based on the user's needs and background, or creating interactive platforms that allow users to delve deeper into legal concepts as needed. Ultimately though, while the risks of oversimplification are real, the potential for NLP to enhance public understanding and engagement with the law is immense. If developed and implemented with care, these technologies could foster a more legally literate society, leading to more robust democratic participation and a legal system that is truly accessible to all.

3.7.2.3. The Role of AI in Enhancing Public Access Across Legislative Stages

While I have discussed the more general impact AI can have in improving public access to the legislative process, it's important to consider AI's potential significance in each stage of the legislative process itself. While simplifying legal language is a critical first step, improving access to the legislative process goes beyond making the text of bills more understandable. It involves equipping citizens with tools that can help them navigate the complex, multi-stage journey of legislation - from the drafting phase to amendments and debates, to the eventual enactment and implementation of laws. By examining how AI can assist the public at each of these stages, we can better understand how it can transform public engagement with lawmaking, enabling citizens to track, interpret, and contribute to the legislative process more effectively.

The first stage in the legislative process is the decision to legislate, where the government determines which issues require legal reform.[1014] However, public involvement in this early stage has often been limited to formal consultations or responses to specific calls for evidence.[1015] AI has the potential to enhance this process by analysing public sentiment on various issues before a bill is even drafted. By using NLP techniques to process vast amounts of data from social media platforms, public petitions, surveys, and other public sources, AI can identify key concerns, issues, and trends within the public discourse.[1016] This data-driven approach can help policymakers better understand public opinion, which can then inform the legislative agenda. As a result, AI can not only facilitate a more responsive government, but also encourage a more democratic approach to decision-making, where public input plays a key role in shaping the legislative process from the outset.

Once the government has decided to legislate, the preparation of the bill follows. This stage often involves the drafting of complex legal documents, which can be difficult for the general public to

[1013] Pascoe Pleasence, Nigel Balmer and Catrina Denvir, 'How People Understand and Interact with the Law' (Legal Education Foundation, 2015).
[1014] Cabinet Office, 'Legislative process: taking a bill through Parliament' (*www.gov.uk*, 14 March 2023) <https://www.gov.uk/guidance/legislative-process-taking-a-bill-through-parliament> accessed 13 November 2024.
[1015] Cristina Leston-Bandeira,'Integrating the view of the public into the formal legislative process: public reading stage in the UK House of Commons' (2017) 23 The Journal of Legislative Studies 508.
[1016] Barry Wang, Daniel Lee Aniceto and Jacky Zeng, 'The Immediate Future of AI in Law: An Overview of Natural language Processing Algorithms' (*Suls.org.au*, 25 September 2020) <https://www.suls.org.au/citations-blog/2020/9/25/natural-language-processing> accessed 15 July 2024.

understand.[1017] AI can play a crucial role here by simplifying legal language and generating clearer summaries of proposed bills. Through NLP, AI tools can automatically produce accessible versions of the bill, such as easy-to-read summaries, translations into different languages, or even audio summaries for those with visual impairments.[1018] These tools can make complex legislation more understandable and ensure that citizens can engage with the content before it is introduced in Parliament, promoting transparency and fostering informed public participation.

Following the preparation of the bill, the next phase is the introduction and parliamentary stages, during which the bill is debated, scrutinised, and voted on by both Houses of Parliament.[1019] In this phase, AI can improve public access by providing real-time summaries of parliamentary debates. Automated platforms can process live speeches and discussions, distilling the key points into concise, digestible formats for the public.[1020] This allows citizens to track discussions, understand the arguments for and against specific provisions, and stay informed without needing to follow every aspect of the debate. AI-driven search tools can also allow the public to search for specific debates or amendments, facilitating easier access to the parts of the process that are most relevant to them.

At the committee stage, the bill undergoes detailed scrutiny, and amendments are proposed.[1021] AI can help the public engage more deeply at this stage by analysing the proposed changes and generating summaries of how these amendments might affect the bill. NLP tools can process the committee's deliberations, making the text more accessible and allowing citizens to track how their concerns are being addressed.[1022] Furthermore, AI can analyse written submissions and public comments, identifying trends and ensuring that public feedback is considered as the bill progresses.[1023] This can be particularly valuable in allowing the public to feel more involved in the process, knowing that their input is being integrated into the legislative discussions.

As the bill moves to the report stage and third reading, AI can continue to assist by summarising the final version of the bill and explaining the implications of any amendments made.[1024] These summaries can help the public understand the changes to the bill and how it has evolved during the parliamentary process. In real time, AI platforms can provide updates on the voting outcomes, highlighting how different MPs and Lords voted on specific amendments, thus enabling citizens to see how their elected representatives are acting on their behalf.[1025]

[1017] Cabinet Office (n 1014).
[1018] Wang (n 1016).
[1019] Cabinet Office (n 1014).
[1020] Sara Berry, 'AI and the Legal Profession: transforming the future of law' (2024) 24 Legal Information Management 61.
[1021] Cabinet Office (n 1014).
[1022] Wang (n 1016).
[1023] Solicitors Regulation Authority, 'Risk Outlook report: The use of artificial intelligence in the legal market' (*sra.org.uk*, 2023) <https://www.sra.org.uk/sra/research-publications/artificial-intelligence-legal-market/> accessed 15 November 2024.
[1024] Cabinet Office (n 1014).
[1025] Solicitors Regulation Authority (n 1023).

Finally, once the bill passes both Houses of Parliament, it receives Royal Assent and becomes law.[1026] However, the full implementation of the law often requires additional regulations or clarifications.[1027] AI can help by automating the dissemination of this information, providing clear timelines for when specific provisions of the Act will come into force.[1028] AI tools can also simplify the language of the Act, ensuring that the legal text is more accessible to the public and allowing citizens to understand how the new laws will affect them.[1029] Furthermore, after the Act is in force, AI can continue to track its impact by processing public feedback and generating reports on its effectiveness, ensuring that the public remains informed about the law's real-world consequences.[1030]

Ultimately, AI offers immense potential to enhance public access to the legislative process. By simplifying complex legal language, summarising debates and amendments, and providing real-time updates on the progress of a bill, AI can make the legislative process more transparent and accessible. This, in turn, can foster greater public engagement,[1031] enabling citizens to participate meaningfully in the creation of laws that directly affect their lives. Through these innovations, AI can help build a more democratic, inclusive, and responsive legislative system.

3.7.2.4. Challenges and Ethical Considerations in AI-Driven Public Access

However, while AI offers many benefits, there are important challenges and ethical considerations to address in the context of public access to the legislative process. Ensuring AI neutrality and avoiding bias in the presentation of legislative information is crucial; AI systems can inadvertently perpetuate or amplify existing biases present in their training data, potentially leading to unfair or discriminatory outcomes.[1032] This is particularly concerning in the legislative context, where impartiality is paramount. If legislative information is presented in a biassed manner, it can mislead citizens about the implications of proposed laws, affect public perception of the legislative process, and ultimately result in unequal access to understanding critical issues. For instance, if AI tools favour certain political viewpoints or omit relevant data, they could skew public understanding and engagement, preventing citizens from making informed contributions to legislative discussions.

To mitigate these risks, regular audits and the use of diverse training datasets are essential. These audits should not only examine the output of AI systems but also scrutinise the underlying algorithms and data sources. Additionally, involving diverse teams in the development and oversight of these AI systems can help identify and address potential biases that might not be apparent to a more

[1026] The Royal Assent Act 1967.
[1027] Cabinet Office (n 1023).
[1028] Clare Fraser, 'AI: opening the door to justice' (*lawscot.org*, 14 August 2023) <https://www.lawscot.org.uk/members/journal/issues/vol-68-issue-08/ai-opening-the-door-to-justice/> accessed 15 July 2024.
[1029] Sansone (n 1002).
[1030] Ibid.
[1031] Janis Wong et al., 'Key challenges for the participatory governance of AI in public administration' [2022] The Alan Turing Institute 1.
[1032] Emilio Ferrara, 'Fairness and Bias in Artificial Intelligence: A Brief Survey of Sources, Impacts, and Mitigation Strategies' (2024) 61(3) Sci 3

homogeneous group. Legal experts, ethicists, and representatives from various communities should be consulted to ensure that AI systems promote fairness and inclusivity in accessing legislative information.

Similarly, there is also a need to balance AI assistance with human oversight to ensure the integrity of the legislative process. While AI can enhance transparency and facilitate public participation by providing streamlined access to legislative proposals, debates, and amendments, it should not replace human judgement in interpreting legislative nuances and understanding the implications of laws. The ability to navigate complex legislative frameworks and address ethical considerations requires human expertise, ensuring that citizens can engage meaningfully with the legislative process.

Moreover, there's a risk that if AI-driven legal services are only available to those who can afford them, it could potentially widen existing inequalities in access to justice.[1033] High-quality AI tools may be expensive to develop, maintain, and regularly update, potentially limiting their availability to well-funded organisations or wealthy individuals. This could create a two-tiered system of legal access, where advanced AI-powered services are accessible only to those with financial means.[1034] For example, large corporations might have access to sophisticated AI tools for legal strategy and prediction, giving them a significant advantage in litigation against individuals or smaller entities without such resources. This disparity risks reinforcing existing inequalities[1035] and undermining the fundamental principle of equal justice under the law.[1036] This could involve public funding for the development of open-source AI legal tools, subsidies for access to these tools for low-income individuals and non-profit organisations, or mandatory provision of AI-assisted services by legal aid organisations.

Despite these challenges, however, by making legal services more approachable and understandable, AI has the potential to bridge the gap between the legal system and the public. It not only could free up time for lawyers to focus on more complex cases, potentially reducing court backlogs and improving the efficiency of the justice system, but it could also empower citizens to better understand and assert their legal rights. To fully realise the benefits of AI in the legislative process however, there's a need for responsible development and implementation. This includes establishing clear ethical guidelines for AI use in the legal sector, training legal professionals on the benefits and limitations of AI, and considering updates to professional standards to include technological competence.

[1033] Mikael Persson and Anders Sundell, 'The Rich Have a Slight Edge: Evidence from Comparative Data on Income-Based Inequality in Policy Congruence' (2024) 54(2) British Journal of Political Science 514

[1034] Drew Simshaw, 'Access to A.I. Justice: Avoiding an Inequitable Two-Tiered System of Legal Services' (2022) 24 Yale Law Journal 150

[1035] Owen Bowcott, 'Legal aid: how has it changed in 70 years?' (*theguardian.com*, 26 December 2018) <https://www.theguardian.com/law/2018/dec/26/legal-aid-how-has-it-changed-in-70-years> accessed 15 July 2024.

[1036] Lisa James and Jan van Zyl Smit, 'The rule of law: what is it, and why does it matter?' (*Consitution-unit.com*, 15 December 2022) <https://constitution-unit.com/2022/12/15/the-rule-of-law-what-is-it-and-why-does-it-matter/> accessed 15 July 2024.

3.7.2.5. Conclusions

In conclusion, AI holds immense potential to reshape the legislative process by enhancing both transparency and public access. While the promise of AI is substantial, its impact on the legislative process remains nuanced and complex. AI technologies such as natural language processing, advanced search algorithms, and real-time legislative tracking offer unprecedented opportunities to simplify complex legal language, improve information retrieval, and democratise public access to legislative data. These advancements could significantly transform how citizens engage with the law, offering clearer insights into how laws are crafted, amended, and implemented.

However, as with any transformative change, the implementation of AI within the legislative process is not without its challenges. AI risks amplifying existing biases, oversimplifying nuanced legal concepts, and exacerbating inequalities in access to information, particularly if these tools are not universally available or properly regulated. The uneven accessibility of AI technologies may deepen existing social divides, making it critical to ensure that these innovations are accessible to all, regardless of social or economic status. Furthermore, there is an inherent tension between the efficiency AI can bring to the legislative process and the need for human oversight to preserve the integrity of legal interpretations. That being said, with careful regulation, inclusive development practices, and a commitment to transparency, AI has the potential to bridge these divides and revolutionise the legislative process by fostering a more equitable and participatory legal system.

Ultimately, I believe that AI can greatly enhance public participation in the legislative process, but only if its development and deployment are handled with careful attention to ethical considerations, inclusivity, and fairness. To truly maximise AI's potential, reforms may be needed to establish clear ethical frameworks, enhance public access to AI-driven tools, and ensure that AI aids, rather than hinders, democratic engagement. In my view, AI represents a vital evolution of the legislative process, offering the promise of a more informed, participatory, and transparent system - provided that its challenges are met with thoughtful regulation and a commitment to equitable access for all citizens.

3.8. What are the advantages of using AI to design legislation?

By Will Jenkins

In 2023, two seemingly unrelated legislative initiatives—one in Porto Alegre, Brazil, and the other in Massachusetts, USA—signalled a transformative trend in lawmaking: the integration of AI. In Brazil, AI was employed to draft legislation aimed at protecting consumers from the financial burden of replacing stolen water meters. [1037] Meanwhile, in Massachusetts, lawmakers turned to AI to help design a bill regulating generative models like ChatGPT. [1038] Although these examples addressed different

[1037] Diane Jeantet and Mauricio Savarese, 'Brazilian city enacts an ordinance that was secretly written by ChatGPT' (*The Associated Press*, 30 November 2023)<https://apnews.com/article/brazil-artificial-intelligence-porto-alegre-5afd1240afe7b6ac202bb0bbc45e08d4 > accessed 05 July 2024.

[1038] Steve Annear, 'Two elected officials drafted legislation to regulate artificial intelligence technology — with some help from ChatGPT' (*The Boston Globe,* 24 January 2023)

policy areas, they underscore a common theme: AI's growing potential to reshape legislative processes across a wide range of domains.

The increasing involvement of AI in legislative design has sparked debate. Critics have raised concerns about the impact of AI on traditional lawmaking, with some labelling past examples as setting a "dangerous precedent". [1039] However, dismissing AI as a threat overlooks the technology's capacity to enhance the legislative process. Rather than resisting AI, it is crucial to recognise its potential to complement and improve the way laws are designed and created.

This section will examine how AI can revolutionise legislative design by accelerating research, streamlining data analysis, increasing transparency, and providing valuable insights. Ultimately, while human judgment remains indispensable, AI enhances such critical processes and presents an unprecedented opportunity to innovate and improve legislative efficiency, paving the way for a new era of more informed and responsive lawmaking.

3.8.1. Optimising Legislative Efficiency

AI has the potential to transform the legislative landscape by streamlining processes and equipping lawmakers with deep, data-driven insights, enabling more informed and efficient decision-making.

AI-powered tools have the capability to automate time-consuming tasks such as document review and legal research, significantly expediting these processes and freeing up valuable time for legislators to focus on higher-level policy considerations. [1040] By rapidly analysing vast datasets of existing laws, regulations, case precedents, and outcomes of past legislation, AI can more accurately identify inconsistencies, redundancies, patterns, biases, discrimination, and gaps in legislation. This ensures a more robust, coherent, and fair system of laws. [1041]

Moreover, AI's analytical capabilities extend beyond legal texts. AI algorithms can efficiently process diverse information on a wide array of subjects, including climate change data, economic indicators, and patterns in public opinion sentiment. This analysis could provide legislators with timely, evidence-based information crucial for informed policy formulation and decision-making. [1042] By further minimising the need for manual data collection and analysis, AI would not only save time and resources but also help ensure that policy decisions are better grounded in the most up-to-date and relevant data.

<https://www.bostonglobe.com/2023/01/24/metro/this-state-senator-drafted-legislation-regulate-artificial-intelligence-technology-with-some-help-chatgpt/> accessed 05 July 2024.

[1039] Jeantet and Savarese (n 881).

[1040] 'AI Tools for Congress' (*Popvox Foundation*, 21 April 2023) <https://www.popvox.org/blog/ai-tools-for-congress#:~:text=By%20automating%20these%20tasks%2C%20LLMs,high%2Dlevel%20and%20complex%20tasks> accessed 09 July 2024.

[1041] 'AI for smarter legislation' (*Deloitte,* 2022) <https://www.deloitte.com/global/en/our-thinking/insights/industry/government-public-services/artificial-intelligence-can-benefit-the-legislative-process.html?wcmmode=disabled> accessed 09 July 2024.

[1042] ChatGPT, 'How AI can Reshape Lawmaking in the U.S. Congress' (2023) 57 The Ripon Forum 13.

Furthermore, AI has the ability to uncover relevant legislation from different jurisdictions, offering lawmakers valuable comparative perspectives. This cross-jurisdictional analysis enables lawmakers to identify best practices, potential pitfalls, and innovative approaches that can be adapted to their own legislative context. By drawing on the experiences of other regions, legislators can craft more effective and nuanced policies that address the unique challenges and opportunities facing their constituents.

In essence, AI can revolutionise the way lawmakers approach policymaking. By automating routine tasks, providing substantially comprehensive data, and facilitating cross-jurisdictional analysis, AI can empower legislators to craft more effective, evidence-based policies in a more efficient and timely manner. This approach would not only enhance the legislative process but could also result in more equitable outcomes for the general public.

3.8.2. Predictive Modelling

The predictive capabilities of machine learning (ML) models raise an important question: can AI be utilised to improve the effectiveness of legislation by anticipating its impact prior to implementation? AI's ability to process and synthesise vast amounts of data enables it to simulate a wide array of potential policy outcomes. By running simulations that explore hundreds of thousands of possible interventions in minutes, AI models can evaluate the effects of legislation more thoroughly than traditional human analysis alone. As a result, legislation could be tested and refined in a digital environment prior to enactment, greatly increasing the likelihood that it will achieve its intended goals and reduce the risk of failure.

Moreover, predictive modelling offers a crucial advantage when it comes to analysing complex policy issues. AI simulations can help lawmakers navigate intricate systems—such as the economy, healthcare, or environmental regulation—by modelling how individual components interact. These simulations can reveal not only the direct outcomes of policy choices but also emergent behaviours and unintended consequences that may arise from complex interactions. For example, an agent-based model designed to simulate the Irish economy used data on patents, knowledge flows, and economic activity to predict how firms might respond to various policy interventions. This allowed lawmakers to assess the likely impacts of different funding mechanisms or tax incentives, offering a clear view of how to spur economic growth in targeted regions.[1043]

By using AI simulations as a predictive tool, lawmakers can gain insights into the wider spectrum of possible legislative impacts before implementation. This approach supports a more accurate understanding of multifaceted systems and provides a means to evaluate both short- and long-term consequences under different scenarios. Importantly, AI models can assist in uncovering the root

[1043] 'Innovation Policy Simulation for the Smart Economy' (*Nesta*) <https://www.nesta.org.uk/feature/smarter-policy-through-simulation/innovation-policy-simulation-for-the-smart-economy/#:~:text=It%20uses%20a%20version%20of,firm%20knowledge%20 dynamics%20into%20the> accessed 06 July 2024.

causes of policy challenges, assessing the effectiveness of various interventions, and identifying trade-offs between costs, benefits, and feasibility within existing constraints.

While AI models cannot wholly replace the nuanced human judgement required in policy decisions, they can significantly enhance evidence-based policy discussions. By testing assumptions and exploring alternative policy pathways, predictive models can reveal hidden complexities, challenge preconceived notions, and highlight areas of agreement. This can lead to more informed, balanced, and ultimately more effective lawmaking in areas ranging from economic development to environmental sustainability. In this way, predictive modelling serves not only as a tool for optimising the success of legislation but also as a vital aid in addressing the inherent complexities of governance, ensuring that policies are data-driven and closely aligned with societal needs.

3.8.3. Transparency

AI is poised to revolutionise transparency in the legislative process by enhancing communication, access to information, and public engagement through various applications.

One key benefit of AI is its ability to streamline collaboration and communication among legislators. Tools like virtual assistants and chatbots offer instant access to relevant information, legislative history, and expert opinions, enabling faster and more informed decision-making. By reducing delays in information gathering, AI facilitates more efficient communication between legislators, staff, and constituents, promoting smoother collaboration throughout the legislative process.

AI-driven platforms, such as Brazil's 'Ulysses,' are also transforming how public input on legislation is processed and understood. Using machine learning algorithms and natural language processing, Ulysses efficiently analyses large volumes of public comments, summarising key sentiments and perspectives on proposed bills. By gauging public opinion on various issues, legislators can craft more responsive and representative policies, ensuring that the legislative process remains closely aligned with the public's evolving needs and concerns. [1044]

Additionally, AI can further enhance transparency by improving public access to legislative information. AI-powered tools can provide citizens with real-time updates on bill statuses, legislative processes, and relevant data, making the often-complex legislative landscape more understandable and accessible. These systems can also offer translations, bridging gaps for non-native speakers and fostering greater inclusivity.

Another critical aspect of transparency is the clarity and consistency of legislative language. Natural Language Processing (NLP), a subset of AI, can analyse the language in bills and legal documents to identify ambiguities, inconsistencies, or potential misinterpretations. This ensures that legislation is

[1044] 'Brazil: a Digitally Mature Parliament' (*Inter-Parliamentary Union*, 01 June 2022) <https://www.ipu.org/news/case-studies/2022-06/brazil-digitally-mature-parliament> accessed 08 July 2024.

drafted in a clear and concise manner, promoting transparency and comprehension for both lawmakers and the public.

In conclusion, AI offers an array of tools that can significantly enhance transparency in lawmaking. By improving communication, facilitating public engagement, analysing public sentiment, and ensuring clarity in legislative language, AI fosters a more open, accessible, and accountable legislative system.

3.8.4. Conclusion

The integration of AI into the legislative design process is not merely a technological novelty: it represents a paradigm shift with the potential to fundamentally transform how laws are crafted, analysed, and implemented. While concerns about AI's role in lawmaking persist, the foregoing highlights the undeniable benefits of embracing this technology.

AI's capacity to optimise legislative efficiency is evident in its ability to automate processes, analyse vast datasets, and facilitate cross-jurisdictional comparisons. This not only streamlines legislative procedures but also empowers lawmakers with deeper insights, enabling them to craft more effective and responsive policies. Furthermore, AI's predictive capabilities allow for the simulation of potential policy consequences, aiding lawmakers in making informed decisions and anticipating unintended outcomes. Lastly, by enhancing transparency through improved communication, public engagement, and clear legislative language, AI fosters trust and empowers citizens to actively participate in the legislative process.

Notwithstanding that the integration of AI in lawmaking is still in its early stages, the potential for positive impact is convincing. Indeed, some experts predict that within the next five years, AI systems will be capable of generating sophisticated first drafts of complex bills and regulations.[1045] By utilising AI as a tool for enhancing efficiency, transparency, and decision-making, we can unlock a new era of legislative innovation that benefits both lawmakers and the public they serve.

However, it is crucial to acknowledge that AI is not a panacea for all legislative design challenges. Human judgement, ethical considerations, and robust regulatory frameworks remain essential to ensure that AI is used responsibly and ethically in the service of the public good. As such technology continues to evolve, ongoing dialogue and collaboration between lawmakers, technologists, and the public will be essential to harness its full potential while mitigating potential risks.

[1045] Richard Susskind, 'I asked ChatGPT to write some laws — this is what happened' (*The Times,* 04 April 2024) < https://www.thetimes.com/uk/law/article/i-asked-chatgpt-to-write-some-laws-this-is-what-happened-26rzr2hhx> accessed 10 July 2024.

3.9. What are the potential impacts of AI usage upon legislative efficiency and quality?

By Hailun Tian

The huge potential of AI systems in the legal field has been increasingly emphasised by governments in recent years. The Brazilian Chamber of Deputies launched an AI tool called Ulysses in 2019 to improve the legislative process and enhance citizen interaction during legislation, among other things. [1046] At the European Union (EU) level, the European Parliament's archives have adopted a special software system for analysing large corpora of archived documents, and the Italian Senate has introduced a deep machine learning system to classify laws and amendments. [1047] In democracies, institutions with legislative power are required to enact laws in accordance with certain procedures and methods, which usually include the preparation of drafts, deliberation, and voting to ensure the reasonableness and fairness of new laws. Among them, the two parts most closely linked to the use of AI technology are the formation and review of draft laws, which are also the focus of this essay.

3.9.1. Impacts of AI upon Legislative Efficiency

Promoting social justice, safeguarding basic human rights, and facilitating business prosperity are the basic functions of the law [1048], but as a response to the development of social reality, legislation inevitably lags behind. 21st-century scientific and technological advances continue to create new fields, for which not only is it difficult to know in advance the direction of the development of social practice, but also the problems of the development process often take time to become apparent. It often takes some time for problems in the development process to be revealed.

Hence, when a social problem requires judicial or governmental regulation, the judiciary and law enforcement agencies may find that there is a lack of legal norms on which to base their decisions. If machine models can be used to predict the future direction of a particular legislative issue, it is possible to design legislation in advance to reduce the enforcement and judicial dilemmas caused by the lack of norms. Based on model analysis, AI can predict areas for legislators to act or improve norms, reducing the burden on staff to conduct extensive empirical investigations in person and thus improving government efficiency. [1049] This enormous potential has led countries to place increasing emphasis on the development and use of AI systems, and to see them as having a positive effect on promoting justice and improving the law. [1050] For example, to compete as a global leader in AI technology, many countries, including the United States, China, and the European Union, have invested billions of dollars

[1046] N.F.F.d Silva et al., 'Evaluating Topic Models in Portuguese Political Comments About Bills from Brazil's Chamber of Deputies' (*Link.Springer*, 28 November 2021) <https://link.springer.com/chapter/10.1007/978-3-030-91699-2_8#citeas> accessed 10 July 2024.
[1047] Fotios Fitsilis et al., 'Prioritisation of Artificial Intelligence Technologies in Law-Making for the Parliamentary Workspace' 15th Wroxton Workshop (*Wroxtonworkshop*, 30 July 2022) <https://wroxtonworkshop.org/wp-content/uploads/2022/07/2022-Fitsilis-.pdf> accessed 10 July 2024.
[1048] Nicolas Economou and Bruce Hedin, *Handbook of Artificial Intelligence and Robotic Process Automation* (1st edn, Anthem Press, 2020) 122.
[1049] Markus D. Dubber et al., *The Oxford Handbook of Ethics of AI* (1st edn, Oxford University Press, 2020) 730.
[1050] Samar Fatima et al., 'National strategic artificial intelligence plans: A multi-dimensional analysis' (2020) Economic Analysis and Policy 184.

in AI research and development in recent years.[1051]

3.9.1.1. Positive impacts of AI system

The popularity of the Internet has led to an exponential growth in information, which has resulted in a heavy burden on legislators. The formation of a draft law requires a great deal of preparation, and staff members usually need to extensively collect the provisions of existing laws and policies on relevant legislative matters, the provisions of relevant countries and regions, theoretical research, experiences, and problems in practice, and the opinions of authoritative experts and scholars. However, under the urgent legislative needs and huge workload, the insufficient staffing of legislative staff undoubtedly poses a challenge to the enhancement of efficiency. [1052]

The use of AI technologies offers potential possibilities to address this issue. On the one hand, big data processing and text mining technologies can extract information related to specific legislative matters from existing legislative texts, policy documents, and judicial precedents, helping legislators to quickly sort out background information. The excellent data management functions of AI can purposefully discover, classify, and organise accessible information in large-scale data sources, proactively integrating potentially relevant data and eliminating useless and irrelevant data. [1053] Additionally, algorithmic systems can process more information in a limited amount of time than human beings, continuously and without interruption, [1054] and reduce to some extent the workload of staff in empirical research across regions. Therefore, based on greatly reducing repetitive paperwork, the limited energy of legislators can be allocated to deal with more difficult challenges, thus overall optimising the efficiency of legislation.

On the other hand, as the embodiment of democratic participation, the deepening of public participation in legislation will generate a large number of public opinions and the collection, collation, and analysis of public opinions will bring about a greater workload. [1055] With AI technology, legislators can collect important public opinions from social media, unofficial online forums, and blogs, revealing the general perception of society on the effectiveness of existing laws in practice. This can help identify the issues that are most relevant to social realities, thus facilitating future legislation to positively reflect the real needs of the public.

A Harvard study shows that some public sector departments use chatbots as a digital bridge to improve the efficiency of citizen-government communication, by using them to extensively search for legal

[1051] Economou (n 1048) 25
[1052] Ke Wang, 'On the Application of Artificial Intelligence in Local Legislation' (2024) Applied Mathematics and Nonlinear Sciences 3.
[1053] Aggeliki Androutsopoulou et al., 'Transforming the communication between citizens and government through AI-guided chatbots' (2019) Government Information Quarterly 5.
[1054] Anneke Zuiderwijk et al., 'Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda' (2021) Government Information Quarterly 10.
[1055] Wang (n 1052) 11.

documents and collect citizens' opinions. [1056] Currently, AI systems based on chatbots are used by some Greek government agencies, and their effectiveness has been proven in the complex legislative process in Greece. Thus, it is reasonable to predict that such AI systems can be expected to bring about even greater efficiency gains in countries with more streamlined legislative and administrative processes.[1057]

3.9.1.2. Potential concerns on inaccuracy and misuse

Nevertheless, AI systems cannot be perfect, and legal and ethical concerns in their application should not be ignored. To begin with, the training and optimisation of machine learning systems are inherently dependent on the correct use of various forms of data sources, which may otherwise produce undesirable results that undermine people's fundamental rights. [1058] The Danish government has pointed out that AI technology can be subject to malicious use, and international bodies such as the United Nations (UN) have recognised that misuse of AI to generate erroneous or false information "can undermine trust in institutions, weaken social cohesion and threaten democracy itself.". [1059]

According to the principle of accountability, when AI generates questionable results in the drafting of bills, the algorithm designers and manipulators (i.e., the relevant legislative staff) have the responsibility to vet the results, which invariably adds an additional cost to the legislative process and potentially cancels out the benefits of efficiency gains. [1060] In addition, AI-based efficiencies may undermine the democratic nature of the legislative process. According to the International Telecommunication Union (ITU), the Internet is currently inaccessible in many countries and regions, and women outnumber men by about 20 percent in the offline population.[1061] Consequently, information about marginalised groups without access to the internet is ignored by algorithms in legislative processes that rely on big data processing. Such a deepening digital divide may result in the needs of some sensitive groups not being addressed by legislators and their interests not being reflected in the draft legislation.

3.9.2. Impacts of AI upon Legislative Quality

3.9.2.1. Development of objectiveness and transparency

A careful and comprehensive review of draft laws is closely related to high-quality legislation. In China, for example, many of its key legislative projects are subject to a double vetting system to ensure the quality of legislation, which places higher demands on the legislature. Yet, in practice, the professional level of legislators varies between different regions, and professionalism cannot be rapidly improved in a short period of time, which leads to uneven quality of legislation between regions. AI technology

[1056] Hila Mehr 'Artificial Intelligence for Citizen Services and Government' (2017) Harvard Ash Center Technology & Democracy Fellow.
[1057] Androutsopoulou et al. (n 1053) 9
[1058] Engin Bozdag, 'Bias in algorithmic filtering and personalization' (2013) Ethics and Information Technology.
[1059] Fatima et al. (n 1050) 190
[1060] Wang (n 1052) 11
[1061] United Nations, 'UN telecomms agency chief: One third of humanity still offline' (*News.un.org*, 7 March 2024) <https://news.un.org/en/story/2024/03/1147377 > accessed 10 July 2024.

provides a new path for reviewing draft legislation. By transforming legal texts into a series of recognisable electronic codes, legal effects can be efficiently assessed, thus making intelligent legislation a reality. AI, by executing specific commands, can quickly review each article in a draft for violations of higher laws, conflicts with peer laws, and impact on prior judicial rulings, and thus make recommendations for amendments. Accordingly, with the assistance of the machine model, the problems of singularity and subjectivity of the evaluating subject can be avoided, thus enhancing the scientific and objective nature of the legislation. [1062]

Furthermore, under the AI system, parliamentary negotiations and exchanges of arguments during the legislative process will be clearly recorded in electronic documents, and they can be translated into multiple languages for public access. This means that the use of AI technology can enhance the transparency of the legislative process to a certain extent, which meets the requirement of procedural justice for high-quality legislation.

3.9.2.2. The risk of unequal legislation

Nonetheless, the use of AI in legislation carries the potential risk of exacerbating social inequalities. A high-quality law should meet the requirement of equal treatment for all under the law. It could be argued that the results based on deterministic system models are considered more objective and fairer to a certain extent, precisely because it is recognised that the operation of the current legal system involves subjective human activity. However, some scholars are concerned that recommendations made by AI systems may disproportionately harm or benefit certain social groups at the expense of others. [1063] Meanwhile, more than 20 countries have noted in their AI development plans that algorithmic models potentially risk deepening socio-economic inequalities. [1064] Since AI relies heavily on data in the learning process, when structural inequalities exist in a society, the information in the databases used to train models is inherently biased in ways that are difficult to detect. Based on implicitly biased data, AI may generate norms that exacerbate the disadvantages of marginalised and disadvantaged groups in society or make predictions that are more favourable to certain groups, which will undoubtedly further reinforce inherent structures of inequality. UNESCO Member States have now unanimously adopted the Recommendation on the Ethics of Artificial Intelligence, [1065] the first and only global normative framework in the field of AI that calls for concrete actions to ensure gender equality in the design of AI tools. As of February 2024, eight global technology companies, including Microsoft, have expressed their support for the Recommendation. [1066]

Besides, even if the information used to draft the bill is made available to the society based on the principle of transparency, it would be difficult for the public without specialised knowledge to detect

[1062] Wang (n 1052) 13.
[1063] Dubber et al. (n 1049) 729
[1064] Fatima et al. (n 1050) 191
[1065] UNESCO, 'Recommendation on the Ethics of Artificial Intelligence' (*Unesco.org*, 1 September 2024) <https://www.unesco.org/en/artificial-intelligence/recommendation-ethics> accessed 10 July 2024.
[1066] Ibid.

discrimination and inequality lurking in the huge amount of data sources. This is because the black-box nature of AI algorithms leads to complex and unreadable choices being made in the programme, thus reducing transparency and interpretability.[1067] Thus, this problem is difficult to avoid through democratic oversight in the legislative process. Further, the choice of algorithms and database scopes is left in the hands of the system's designers and users, and subtle differences in choices can be exploited to produce results in favour of particular interest groups, which are almost impossible to monitor. [1068]

The majority of AI systems in practice are created and maintained by private companies rather than governments, and they do not fully disclose to the public the data and software systems involved in automated decision-making processes for reasons such as trade secrets.[1069] Many governments now recognise that public authorities should guard against the potential risks associated with the irrational operation of AI systems when using algorithm-based predictions to make decisions. Both the United Kingdom (UK) and Italian governments have noted that when the algorithms themselves are subject to discriminatory bias, decisions may be made that are unrepresentative or discriminatory to the extent that they further entrench inequality. [1070]

Admittedly, system developers and operators can monitor and correct the programme. Given the key role that businesses play in the development and application of AI, in February 2024, eight major global tech companies, including Microsoft, voiced their support for UNESCO's Recommendation on the Ethical Aspects of Artificial Intelligence, calling on private companies to ensure that gender equality is guaranteed in the design of AI tools. [1071] Still, it requires time to adequately train staff so that they understand system operations and performance limitations. Therefore, whether the quality of legislation can be rapidly improved in a short period of time is subject to further empirical research. Moreover, the attention of legislators may be inappropriately skewed if the legislative process devotes too much effort to adjusting potentially biased technical models and scrutinising potentially discriminatory generated content. This means that other, more general interventions to promote legal justice will not be adequately discussed, and it is therefore difficult to judge whether there will be a fundamental improvement in the overall quality of legislation.

In conclusion, the application of AI systems in the drafting of bills and in the post-legislative scrutiny stage can reduce the workload of legislators and enhance the scientific and transparent nature of legislation, thereby improving its efficiency and quality. However, inappropriate use of big data models in practice is likely to increase legislative costs and deepen social inequalities, undermining their benefits. Considering that machine learning technology is still in rapid development, how to avoid the

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[1067] Nicol Turner Lee et al., 'Algorithmic bias detection and mitigation: Best practices and policies to reduce consumer harms' (*Brookings.edu*, 22 May 2019) <https://www.brookings.edu/articles/algorithmic-bias-detection-and-mitigation-best-practices-and-policies-to-reduce-consumer-harms/> accessed 10 July 2024.
[1068] Dimitris Koryzis et al., 'Disruptive Technologies for Parliaments: A Literature Review' (2023) Future Internet 15
[1069] Dubber et al. (n 1049) 731.
[1070] Fatima et al. (n 1050) 187.
[1071] UNESCO, 'Challenging systematic prejudices: an investigation into bias against women and girls in large language models' (*Unesdoc.unesco.org*, 5 July 2024) <https://unesdoc.unesco.org/ark:/48223/pf0000388971> accessed 10 July 2024.

potential adverse effects of AI on legislation and optimise the efficiency and quality of legislation is the direction of future theoretical research and practical exploration.

Chapter 4: Conclusions

By Aurore Talazac

The previous essays within this legal research group have pointed out several advantages of incorporating AI into legal practice, such as enhanced efficiency or even automation of repetitive tasks and reduced human error. Nonetheless, numerous challenges accompany its integration within the legal field. This essay will explore the inherent flaws and inefficiencies of AI in legal practice basing itself on the flaws outlined in previous chapters of this research. The most pressing issues arise in the context of data requirements and transparency as well as issues of accountability and liability.

4.1. Data Requirements and Bias and Transparency issues

One of the major issues outlined in previous chapters is the high volume of data required to enable the AI device to function efficiently and effectively. The large number of datasets involved in legal proceedings as well as the complexity of it present significant hurdles to achieving real efficiency. Additionally, the use of personal data, including client's private information and case details is heavily restricted under regulations such as the GDPR in the European Union, creating significant barriers to the use of AI in legal practice

AI systems also learn from the data they are trained on, which means that if the data is biassed and reflects historical or existing biases then the AI will perpetuate these in its decision making. There is therefore a potential for numerous biases such as racial, gender or even socioeconomic bias. For instance, if in the past legal decisions have penalised a certain racial or ethnic group over another, the AI will likely replicate this decision in its predictive models leading to biassed and unfair outcomes.
Another significant flaw lies in AI's lack of transparency. The way AI reaches its decision is often opaque, making it difficult for users to understand or explain the rationale behind the decision. This is known as the "black box" problem. This lack of transparency and explainability undermines the trust in AI systems especially if a judge or a solicitor/barrister rely on the technology and its decision without fully understanding the rationale behind it. This lack of transparency and explainability would make it very difficult for legal professionals to challenge a decision made by such technology creating hurdles as to the fairness of the legal proceedings and the legal system as a whole.

4.2. Accountability and Liability Issues

Accountability is another pressing concern around the use of AI in legal practice as well as in other fields. It remains unclear who would be liable if the AI produces an unfair or prejudicial.
AI systems involve multiple stakeholders from the developers and scientists to the legal professionals using the technology. It is therefore difficult to determine who bears the responsibility if the AI system

provides incorrect legal advice or produces a biassed outcome. Should the developers be held accountable ? Or should it be the legal professional who used it or perhaps the law firm as a whole for implementing the system ?
This issue becomes even more complex in respect of judicial decisions. If a judge were to rely solely on an AI generated judgement and make a ruling which is later found to be flawed, various ethical and legal concerns would arise. At present, the absence of clear legislation governing the specific use of AI in legal practice renders this too uncertain for AI to be effectively used in legal settings.

4.3. Privacy, Data Security, and Confidentiality

The use of AI in legal practice also raises serious questions regarding privacy, data security and confidentiality. As aforementioned, the use of AI in legal practice would require to "feed" the AI system with sensitive and confidential information on the clients, which conflicts with a solicitor's duty of confidentiality, even after a client's death. It is difficult to see how this duty can be fulfilled if a client's data were fed to an AI system to then be used for later cases. Any breach of confidentiality has important consequences and the larger the datasets involved, the higher the risk of cyber-attacks, raising concerns for the security of the client's data.
Additionally, solicitors have a duty to provide independent advice. If the solicitor relies on an AI system without properly understanding the decision or even critically evaluating the decision, then the solicitor would be in breach of this duty of independence.
These concerns need to be thoroughly addressed before AI can effectively be used in legal settings.

4.4. Complex Legal Questions limiting the AI's effectiveness

AI systems often struggle with complex and unprecedented issues. AI systems only rely on the data they have been trained on to answer a question. Unlike human lawyers, it cannot apply any sort of creativity or critical reasoning and is therefore ill-equipped to handle complex or novel legal situations. For instance, it would be very difficult for an AI system to draft an affidavit for a client which requires flexibility and an understanding of nuanced legal arguments.

4.5. Employment Concerns and Ethical Implications

The increased use of AI raised concern about employment opportunities, particularly for entry level positions such as paralegals or legal assistants. As AI can easily execute routine tasks such as document review or legal research, there is a real fear of job displacement. While it is argued that AI will give legal professionals more time to focus on complex tasks and client satisfaction, it is evident that this increased use of AI in legal practice will impact the employment landscape.
Furthermore, there are obvious ethical concerns attached to the use of AI in legal practice. In the event where AI becomes heavily relied on in legal practice, the importance of legal debate and advocacy will likely diminish, this may lead to an homogenisation of legal decisions where the algorithm will favour consistency over the uniqueness of each case. Judges relying too heavily on AI systems could

lose their autonomy and independence rendering overtime decisions reduced to only algorithmic calculations, diminishing the importance of conscious reasoning, intuition and moral considerations. This would raise important issues around fairness, the good administration of justice and the rule of law as a whole.

4.6. The lack of emotional intelligence and the death of the "Human Touch"

AI systems are made to follow a certain algorithm, they are not trained to have emotional intelligence and are unable to replicate the "human touch" in legal practice. In practice, a legal practitioner does more than just analyse and apply statutes and cases to the client's case. They have to engage with their clients and form a business relationship with them to ensure trust between them. The personal connection between a client and its solicitor is particularly important in fields such as family and criminal law or matters involving personal injury where the solicitor needs to provide reassurance and empathy to their clients as well as being able to announce bad news in a more empathetic way than an AI device might. This personal relationship between the lawyer and his clients cannot be replicated by an AI. Furthermore AI systems are unable to assess or even respond to complex human emotions or even assess the ethical dimension of a said case. This absence of emotional intelligence within AI renders it ill-equipped for tasks requiring compassion, moral judgement and an understanding of human motivations. The absence of these human qualities makes AI systems inefficient and ill-suited for many areas of legal practice.

Moreover, AI is limited in providing context-specific reasoning or explaining the decision to a client the way a human lawyer would. A human lawyer is likely to be able to explain its strategy to a client as well as adapt it based on the client's needs and the specific legal context. Ai systems cannot mimic this behaviour and would be unable to consider the broader implications such as the societal or emotional contexts often critical in legal matters.

4.7. Regional and Cultural Differences

Not only AI systems meet limitations in regards to the lack of emotional intelligence but also in regards to existing regional and cultural differences. As we know, legal norms and practices vary from one jurisdiction to another. An AI system trained on data from France will not perform well in England and Wales for instance due to different societal values and legal framework. This is particularly problematic in developing countries where AI systems may lack a number of resources for the AI system to thrive such as the infrastructure, the data and even skilled professionals to effectively implement the technology.

4.8. Conclusion

The implementation of AI in legal practices presents great opportunities to enhance and sharpen the legal practice. However, its flaws and inefficiencies must be addressed before it can effectively revolutionise the legal field.

Ranging from data privacy and transparency issues to accountability and ethical dilemmas, AI's integration within the legal practices requires careful safeguarding and controls to ensure its proper use. Moreover, it is without doubt that human oversight will be necessary to compensate for AI's lack of emotional intelligence and its limitation in handling complex and novel legal questions. Only by acknowledging and addressing these flaws and inefficiencies can AI become a truly revolutionising tool in the legal field.

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