Navigating the AI legal landscape. Gender implications of large language models in legal text generation

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Abstract

Large language models (LLMs) are AI systems capable of generating and analysing natural language texts. They have been utilized across various fields, including, among others, legal text generation, where they can aid lawyers in drafting litigation-focused documents such as contracts, pleadings, and motions, or even assist them with ideas and legal research for preparing legal reports or memos. However, the use of LLMs in legal text generation raises ethical and legal concerns, such as responsibility, accountability, and liability for the generated texts, as well as potential algorithmic discrimination and gender biases amongst others. In this article, we review the current state of LLMs in legal text generation, focusing on the strengths and limitations of AI-powered legal research software used by law firms based in the EU. We also discuss gender implications of using LLMs for legal text generation and offer some recommendations and best practices to ensure the quality, reliability and fairness of the generated texts.

Keywords

large language models; legal text generation; gender biases; algorithmic discrimination; AI Act

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Navegar por el panorama legal de la IA. Implicaciones de género en los modelos extensos de lenguaje en la generación de texto legal

Resumen

Los modelos extensos de lenguaje (LLM, por sus siglas en inglés) son sistemas de IA capaces de generar y analizar textos en lenguaje natural. Se han utilizado en varios campos, incluyendo, entre otros, la generación de texto legal, donde pueden ayudar a los abogados a redactar documentos centrados en litigios, como contratos, alegatos y mociones, o incluso a proporcionarles ideas e investigación legal para preparar informes o memorandos legales. Sin embargo, el uso de los LLM en la generación de texto legal plantea preocupaciones éticas y legales, como la responsabilidad y la obligación por los textos generados, así como la posible discriminación algorítmica y los sesgos de género, entre otros. En este artículo, revisamos el estado actual de los LLM en la generación de texto legal, centrándonos en las fortalezas y limitaciones del software de investigación legal impulsado por IA utilizado por bufetes de abogados con sede en la UE. También analizamos las implicaciones de género del uso de los LLM para la generación de texto legal y ofrecemos recomendaciones y mejores prácticas para garantizar la calidad, la fiabilidad y la imparcialidad de los textos generados.

Palabras clave

modelos extensos de lenguaje; generación de texto legal; sesgos de género; discriminación algorítmica; Ley de IA

Introduction

The advent of Artificial Intelligence (AI) signifies a paradigm shift in the legal sector, heralding automated mechanisms for drafting and critical review of legal documentation. The legal sector is a professional sphere that manages a great volume of information. Therefore, the potential of AI in this sector is tremendous. AI is thus being increasingly used by law firms to automate routine tasks and streamline workflows, ultimately leading to enhanced efficiency and cost savings by reducing time spent on manual tasks and generating ideas from scratch (Clio, 2024). This has the benefit of democratizing access to legal advice, particularly for underserved communities, by lowering economic and knowledge barriers. With AI, law professionals can focus on higher value creative tasks or those that require critical judgement; dimensions that to date are beyond the reach of AI systems.

Large Language Models (LLMs), such as OpenAI's ChatGPT-5 and Google's Gemini Advanced, can generate natural language text from various inputs, such as keywords, queries, or existing documents. These models hold the potential to transform the creation of litigation-focused legal documents – contracts, pleadings, motions, briefs, and memoranda – by providing relevant information, recommendations, and structural templates. However, defining the scope of AI application within legal practice reveals a complex landscape. In fact, such a

profession is so diverse (including different kinds of work based on organizational size and type) that it is impossible to generalize about how AI benefits everyday legal work (Legg & Bell, 2020). Specific benefits will, of course, be realized, but they will depend on the particular use case and AI application.

At the same time, the use of AI for legal drafting can present challenges and risks, particularly because deploying AI systems often involves handling large amounts of data, potentially including personal information. In fact, the recent adoption of the AI Act (European Union, 2024) in the European Union (EU highlights the urgent need to establish regulatory frameworks for AI technologies, taking into account the ethical and fundamental rights involved. Furthermore, the rise of cybersecurity and data protection concerns in using AI LLMs for legal text generation cannot be overlooked, especially given the EU's strict data protection regulations, such as the General Data Protection Regulation (GDPR) (European Union, 2016). Additionally, one of the most urgent yet underexplored risks in legal AI systems is their potential to reinforce or worsen gender bias in legal language and representation, an issue that this article thoroughly examines.

Within this context, this study aims to provide a thorough analysis of the current state and future prospects of using AI LLMs for generating litigation-focused legal text. It will explore which AI LLMs are most utilized by legal

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professionals for drafting purposes and examine the key gender-related implications associated with their use in legal writing.

To fulfil these objectives, this study has reviewed a large number of AI tools and bots for lawyers using a mixed-methods approach, combining qualitative and quantitative data from sources such as literature reviews, surveys and semi-structured interviews. It contributes to the existing literature on AI and law by providing a novel and in-depth analysis of the use of AI LLMs for generating litigation-focused legal text, highlighting the opportunities, challenges, and implications for the legal profession and society.

Furthermore, to strengthen the legal perspective of this study, the analysis consistently focuses on the EU's regulatory framework, especially the AI Act (Regulation (EU) 2024/1689), as well as the ethical and professional duties outlined in national codes of conduct for lawyers. These instruments are employed not only to define the challenges posed by AI in legal practice but also to evaluate the effectiveness of safeguards against risks such as algorithmic discrimination and professional liability. By situating the discussion within this legal context, the paper aims to make a meaningful contribution to the ongoing debate on the lawful and ethical integration of AI into the legal profession.

The structure of this paper follows a progressive argumentative logic, moving from a descriptive analysis of the tools available (Section 2) to a discussion of the necessity of human oversight and ethical responsibility in their use (Section 3), and finally to a critical reflection on the specific risks of algorithmic discrimination and gender bias in legal LLMs (Section 4). This sequence aims to demonstrate that implementing AI in legal practice is not simply a technical challenge but one that demands strong ethical and legal safeguards, especially concerning equality and non-discrimination. The concluding sections (5 and 6) bring these themes together by providing practical recommendations and exploring avenues for further legal regulation and professional responsibility.

Ultimately, the paper adopts a multidisciplinary approach to explore how legal LLMs are being implemented in law firms across the EU, with a particular focus on the gender-related risks and legal challenges they pose, aiming to contribute to both empirical understanding and the ethical-regulatory debate.

1. Main LLMs for legal text generation used by lawyers

Previous studies demonstrate that, although some lawyers are aware of the AI-based legal technology tools available to them, this awareness is not universal (Weinstein, 2022). In fact, compared to other professionals, lawyers are often seen as conservative and more resistant to change than the average (Legg & Bell, 2020; Waisberg & Hudek, 2021), which makes them less inclined towards innovative technologies, including AI tools.

However, in recent years, legal practitioners have shown increasing interest in using AI tools to complete some procedural and substantive tasks. Although the legal profession is traditionally a conservative sector, lawyers are gradually becoming more aware of the advantages that AI offers to support their work, such as accessing and quickly scanning large databases or developing fair legal arguments in their daily practice. An increasing number of legal professionals now recognize the transformative potential of AI in streamlining both procedural tasks and substantive legal analyses. These tools not only facilitate access to and analysis of extensive databases but also assist in formulating equitable legal arguments, thereby enhancing the efficiency of daily legal practices. In essence, lawyers seeking AI assistance in their work can choose from three options: **1)** Lawbots (GPTs), which are legal AI applications that automate general legal tasks like document automation and legal research, ranging from smart searches and step-by-step forms to chatbots; **2)** specialized AI-driven tools for lawyers, which are task-focused tools that streamline specific legal processes, improve efficiency, and enhance particular legal tasks; and **3)** locally-supported AI tools for lawyers, which are customized tools developed within a law firm to help lawyers find relevant case law, statutes, and legal opinions more efficiently.

Using lawbots as assistants for legal tasks can be the most cost-effective option for legal practitioners. Since January 2023, over 20 bots or GPTs have been developed with support from ChatGPT, trained by OpenAI, Poe and Ora. There are some differences in how these three platforms are utilized. While bots provided by Poe and Ora are free, bots built on the OpenAI platform (GPTs) are only accessible to ChatGPT Plus subscribers. This is because, unlike Poe's and Ora's bots, which that are built on GPT-3.5 model, OpenAI employs ChatGPT 5, a far more powerful and capable model than the free version. The economic models underpinning these bots differ: Poe and Ora offer free access, whereas

OpenAI's more advanced GPT-4-based bots require a ChatGPT Plus subscription. However, using bots developed with ChatGPT 3.5 offers two advantages: it is free to use and provides a faster writing experience (ChatGPT 4 is more powerful). Currently, there are seven main lawbots available under OpenAI, Poe, and Ora: **1)** "Abogado Digital", which supports lawyers with any technology-related issue; **2)** "Lex Copilot", which assists with tasks such as legal research, drafting contracts and other legal documents, and improving the drafting of any legal text; **3)** "Lex Tutor", which helps with understanding and applying the Mexican legal framework; **4)** "Lex Informatica" (still in pilot phase), which addresses issues related to digital rights, intellectual property, cybersecurity, and personal data protection; **5)** "Lex Mentor", which aids lawyers in negotiations, conciliation, mediation, and arbitration; **6)** "Lex Advisor", an AI assistant specialized in detecting, evaluating, and mitigating legal risks; and 7) "CoNaProCi", a bot specialized in national civil and family legal procedures (Gómez, 2024).

Another option is to purchase one of the several AI-driven tools for lawyers available on the market (Matich & Lenon, 2024). Their cost can range from 7 to 2,500 euros per month (York, 2024), and their primary functions include summarising legal research, automatically generating new legal tasks, reviewing contracts, creating legal documents or emails, drafting contracts, organising deals for new clients, and suggesting legal strategies for litigation. The most popular large-scale tools and their uses are listed in Table 1. The inclusion of these models illustrates the growing integration of large language models (LLMs) into legal practice and provides context for the legal and ethical issues discussed in this paper. These tools were chosen based on their market relevance, range of functionality, and visibility in recent legal tech analyses (Matich & Lenon, 2024; York, 2024). Although their technical operations differ, most depend on transformer-based architectures that enable natural language processing tasks such as summarising, classification, and generation. Legally, these tools raise important questions about confidentiality, liability, bias, and compliance with professional standards – especially since their outputs may influence contractual terms or litigation strategies.

Table 1. List of selected companies offering AI LLMs for lawyers

	Main purpose of the AI LLM	Summarizing legal research	Automatically generating new tasks	Contract review process automator	Emails, reports, documents, summaries and updates generator	Draft contracts & templates	Organize deals	Suggestions for legal strategies
ClickUp	AI as a national security asset	•	•		•			
Lawgeex	Review and redline contracts in accordance with the company's policies and guidelines.			•				
Amto	Create templates.			•	•	•		
Detangle.ai	Summarize lengthy legal research.	•						
Ansarada	Manage workflows and collaborate on critical tasks such as deals.		•				•	

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Lex Machina	Analytics platform.	•			•			
Latch	AI legal assistants within MS Word.	•			•			•
PatentPal	Generate documents for intellectual property.				•	•		
HumataAI	Summarize documents.	•						
GenIA-L	Automatically generate questions that will help you delve deeper into cases or explore new lines of investigation.	•			•			•

Source: own creation

By using these AI LLMs, lawyers can automate routine tasks, make legal services leaner and more competitive, take on more clients as their personal time is freed up, and improve the speed and accuracy of outcomes in the client's favour (Legg & Bell, 2020). Such investments promise to recalibrate the competitive landscape of legal services, enhancing operational efficiency, expanding client reach, and improving the precision and speed of legal results. From Table 1, it can be seen that most of these LLMs provide functions for either summarizing legal research or automatically generating legal documents, reports and emails. Some of these AI tools clearly drive a paradigm where the effectiveness of legal practice is significantly enhanced by AI's ability to analyse, condense, and generate legal documents. This shift goes beyond mere efficiency, signalling a deeper, more fundamental transformation in how legal professionals engage with the corpus of legal knowledge. These tools, with their skill in simplifying complex legal narratives and facilitating intricate deal structuring, demonstrate AI's role as a powerful driver of innovation within legal frameworks. Their capacity to translate dense legal discourse into accessible insights not only streamlines workflows but also broadens access to nuanced legal analysis, thereby strengthening the strategic capabilities of legal practitioners. Notably, three out of these ten tools also offer legal strategy functionalities. Such legal strategy formulation is made possible by the enhancement of an ever-evolving legal database filled with detailed case information and documentation, which ultimately acts as a cornerstone for delivering precise legal analytics. This approach unquestionably provides legal professionals with relevant data-driven insights, representing a significant departure from traditional, intuition-based strategies and enriching the strategic foundation of legal practice with empirical accuracy.

A third option, less affordable for small firms, is the development of local, bespoke AI software by law firms and legal companies. One benefit of this approach is that it overcomes the challenge of ensuring alignment with the correct legal system and current legislation. Existing global chatbots and legal AI assistants may offer answers based on laws that exist but belong to a different jurisdiction than the one relevant to the user's query. Additionally, they may reference legislation that has already been repealed or

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amended, which can lead to serious errors in legal interpretation or advice. In contrast, bespoke AI software guarantees jurisdictional accuracy and legal up-to-dateness, which are crucial when applying AI in legal contexts.

These tools assist in gathering data to enhance understanding of legal precedents and aid in complex tasks such as preparing court filings. For the present study, three AI tools developed by law firms of different sizes were selected: AI tool 1 (developed by a global law firm), AI tool 2 (from a large national firm), and AI tool 3 (owned by a small or medium-sized enterprise). The tools' names remain confidential for proprietary reasons. From a methodological standpoint, the study employed a qualitative case-study approach for this part of the research. Data about each of the three AI tools were collected through semi-structured interviews with key informants from the respective law firms, supplemented by analysis of internal documentation and publicly available materials (e.g., press releases, white papers). These three tools (N=3) form the core data points of the study, selected from a broader survey of AI tools to represent a diverse range of law firm types (a global firm, a large national firm, and an SME). This purposive selection ensured that the analysed instruments offer a comparative perspective across different organizational sizes, chosen for their representativeness and the availability of detailed information on their development and use. The findings were analysed qualitatively, focusing on aspects such as transparency, human oversight, and gender representation, consistent with previous literature on legal AI systems (Legg & Bell, 2020; Weinstein, 2022).

Table 2. Comparative analysis of three tailor-made AI tools created by law firms[1]

Tool	Uses	Pros	Cons	Info for clients	Servers	Supervision	Gender bias in terminology	Proposal for improvement
AI tool 1	Contract revision, redlining, summaries of judgments, draft of legal documents.	Trained in a specific legal domain; answers much more accurate within the legal field.	None.	Info published in press; workshops held with several clients; included in the general T&C.	EU.	Always requires an expert review by the IT and Knowledge Department. Expert lawyers always review the answers and improve them.	Answers depend a lot on the prompting. It is key to train in how to ask the tool.	Ensure final review and work to be able to train with own knowledge base.
AI tool 2	Analysis of legal document, proposal of ideas or strategies, preparation of legal documents, resolution of specific legal issues.	Generative AI model specifically trained in the legal field, faster than other LLMs, capable of synthesizing in just 2 minutes the positions of the seller/buyer in complex business purchase/sale contracts based on a "mark-up" prepared by the seller on the buyer's initial draft. Very good at doing legal translations.	The users need to invest some time in learning how the system works.	No, but the system is used only as an assistant in developing some tasks, never for final work. All work is ultimately performed by a lawyer.	EU.	A team of experts supervises the system.	Allows text with a split option.	It is a matter of time before these systems improve and perform more complex tasks. It is crucial that lawyers help train the system.

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1. The information in this table is based on semi-structured interviews with senior staff members from each firm, internal documentation shared under confidentiality agreements, and publicly available sources such as press releases and technical briefings. A qualitative comparative approach was used to identify shared patterns and divergences in functionality, oversight and ethical safeguards.

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Tool	Uses	Pros	Cons	Info for clients	Servers	Supervision	Gender bias in terminology	Proposal for improvement
AI tool 3	Contract drafting, case law gathering, drafting lawsuits/ court documents, analysis of documents for due diligence or audit, analysis of specifications to quickly know if it can be submitted to tender.	The quality of the answers, the legal rigor and broader knowledge of database. Allows users to be more effective, efficient and focus on valuable tasks.	Necessary to provide users training to get the most out of it.	Info via real practical cases from daily life and through demos.	EU.	Yes, able to correct possible errors, hallucinations, as well as introduce improvements based on learning.	Allows text with a split option.	Involve more lawyers, consultants, etc. to better detect needs and to expand the tool's uses.

Source: own creation

Although these AI tools were developed by firms with varying turnovers, their scope is remarkably similar. They perform tasks such as contract revisions, legal document drafting, judgment analysis, and due diligence audits. For example, AI tool 1 focuses on contract redlining and summarizing judgments, while AI tool 2 synthesises buyer and seller positions in business contracts. AI tool 3 supports contract drafting and case law collection. Regarding the benefits, all three tools are customized to the firms' specific legal areas, enabling greater accuracy and relevance when handling legal content. AI tool 2, for instance, was reported to quickly synthesize complex legal contracts, providing speed and precision unmatched by other LLMs. All tools also allow legal teams to concentrate on higher-value tasks by automating document analysis and synthesis, thereby increasing overall efficiency. Regarding disadvantages, two of the tools require substantial initial staff training, which can divert resources from immediate income-generating activities. AI tool 3, in particular, needs extensive training to ensure users can fully utilize its potential. Despite these challenges, human expertise remains essential in all cases. For example, AI tool 1 depends on the firm's IT and knowledge departments to supervise its use, ensuring that legal experts always validate the tool's outputs before finalising documents.

A key issue pointed out in this study is how unclear firms are about their use of AI in legal services. Only two out of three firms actually tell clients they use AI, and none mention it in their contracts. This lack of transparency raises several important concerns. Firstly, clients have a right to know how their legal matters are being handled, including when AI tools are involved. Secondly, they need to trust that using AI – especially LLMs – will not compromise the quality or professionalism of the service. Thirdly, there are ethical concerns, as AI can sometimes produce biased or inaccurate results, which could unfairly affect individuals based on gender, race, or social background. Fourth, accountability is an issue – firms must be clear about who is responsible for work carried out with AI. Finally, it is crucial to ensure that these tools do not perpetuate existing inequalities or discrimination.

Consequently, law firms must adopt clear communication strategies and ethical safeguards when deploying AI tools. Transparent client communication, proper oversight, and careful management of training data are essential steps to ensure AI's responsible and ethical integration into legal practice.

2. The importance of human intervention in the use of legal AI LLMs

While AI LLMs can provide considerable advantages for legal drafting, such as speed, accuracy, and efficiency, they always require human intervention and oversight to maintain quality, reliability, credibility, and ethics. Human intervention is essential for several reasons:

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First, AI tools are not infallible. They may generate errors, inconsistencies, or inaccuracies in the outputs, especially when dealing with complex or novel legal issues. It is also common to encounter a phenomenon called "hallucination," where the AI tool provides an answer containing false or misleading information presented as fact. In this context, a study by BCG found that generative AI reduced the likelihood of correct answers in complex problem-solving tasks by 19% (Layne, 2023). Such errors and hallucinations highlight the importance of human oversight, not just for correcting mistakes but as a fundamental part of a responsible AI usage framework that upholds ethical standards and professional responsibility. Human lawyers should therefore always review and verify the outputs of AI LLMs and correct any errors or gaps, reinforcing the symbiotic relationship between AI technologies and legal professionals.

The use of AI by legal professionals can also raise issues of contractual liability. Contractual liability pertains to the obligation to compensate for damages resulting from breach or defective performance of a contract. For example, a lawyer might provide a client with a contract entirely generated by AI that contains erroneous clauses or ambiguous information. When it comes to AI, initial questions may arise about who is responsible for damages caused by its use – whether it is the provider of the AI system, the user, or the system itself. Although most professional codes in EU Member States suggest that legal professionals have an obligation to supervise all content produced by AI, clear guidelines and oversight mechanisms to address potential damages from inaccuracies in AI-generated legal texts are not yet established. For instance, in Spain, Article 21 of the code of ethics of the Spanish legal profession regarding the use of information technologies (Consejo General de la Abogacía, 2019) states that the use of information and communication technologies does not exempt practitioners from complying with deontological norms governing the profession or obligations imposed by regulators of the information society, but the code makes no specific reference to responsibility for AI content and decisions. It is important to clarify, however, that while the AI Act does not impose explicit human oversight duties for all legal applications, it requires human-in-the-loop mechanisms for high-risk AI systems, especially those used in the administration of justice. Although legal LLMs used by law firms typically do not fall under this category, their outputs could still

impact fundamental rights or democratic processes – such as in cases of discriminatory outcomes – thereby necessitating human intervention under the AI Act.

Moreover, AI tools are not impartial. Recent evidence shows that lawyers should not automatically trust what is produced by large LLMs and AI chatbots such as ChatGPT when preparing a plaintiff or a legal brief (Novak, 2023; Farah, 2023). As discussed in the next section, AI tools may mirror or accentuate biases and prejudices from their developers, users, or data sources. For example, DoNotPay, a chatbot that used ChatGPT to offer legal assistance, faced controversy and ceased its legal services after allegations of discrimination, misinformation, and malpractice (Cerullo, 2023). Consequently, human lawyers must always supervise and assess the potential effects of AI tools and address any issues related to fairness, diversity, and inclusion.

Finally, AI tools are not autonomous. They rely on human inputs, instructions, and feedback to function properly and improve over time. As shown in Table 1 above, one of the most hyped and rapidly growing sectors of innovation in the legal field is the use of AI to predict the outcome of legal cases and thereby inform legal strategies, such as how to approach litigation (Legg & Bell, 2020). However, such predictions cannot be automated without human intervention. In this context, the AI Act sets out key principles and guidelines for the development and use of AI within the EU, including compliance, privacy, transparency, and accountability. The Act aims to foster an ecosystem where AI tools, including those in the legal sector, are developed and deployed in a manner that upholds the highest ethical and legal standards, addressing the complex fundamental rights considerations inherent to AI's integration into legal practices. Therefore, human lawyers must establish and adhere to clear and ethical rules and standards for the use of AI tools, ensuring their alignment with the legal system and societal values.

Human intervention is therefore crucial for using legal AI tools, as it guarantees the quality, reliability, credibility, and ethics of the generated texts. Human lawyers should not delegate their professional responsibilities or judgment to AI tools; instead, they should utilize them as complementary and supportive resources. In fact, human supervision remains essential, as the issue of liability for AI errors is still unresolved within the EU. The AI Act does not address this concern, and the proposed AI Liability

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Directive (European Commission, 2022) has recently been withdrawn by the Commission, leaving cases of responsibility for damages caused by autonomous AI decisions uncertain; thus, human oversight is vital. Building on these legal and ethical considerations, the next section delves deeper into one of the most persistent and structural risks associated with legal LLMs: gender bias and algorithmic discrimination, particularly in relation to linguistic representation and fairness.

3. Discrimination and gender bias considerations

The increasing use of AI by legal professionals raises important ethical questions, particularly regarding discrimination and gender. This section examines how AI tools could introduce bias or discrimination, including gender bias, in legal practice across the EU. Although the terms discrimination and bias are closely related but refer to different phenomena, especially in social sciences, law, and AI. Therefore, while bias is a prejudiced *attitude* or tendency that influences judgment or perception (e.g., believing that women are less competent in STEM fields), discrimination involves *actions or behaviours* that result in unfair treatment of individuals or groups (e.g., not hiring a woman for a tech role despite her qualifications, because of her gender) (Barocas, Hardt & Narayanan, 2019).

3.1. Algorithmic discriminations in the EU laws

Algorithmic discrimination is clearly included within the legal concept of discrimination, but it has some distinct features. The legal definition of discrimination encompasses any unfair treatment of an individual or group, or the disproportionately harmful effects of a measure or policy on a specific group. Consequently, the term *discrimination* is broader than the legal concept of *algorithmic discrimination*, as the former refers to any kind of disadvantage that may be viewed as ethically or morally wrong, even if it is not illegal (Gerards & Xenidis, 2021). The challenge, therefore, is to improve AI tools with the ability to recognize and compensate for these subtle discriminations, ensuring their operation aligns with the ethical standards established by the legal community. Such improvements might include algorithmic modifications based on ongoing learning from diverse data sets and the implementation of ethical guidelines to govern AI behaviour within legal

contexts. For some scholars (Gerards & Xenidis, 2021), the term algorithmic discrimination also includes any form of algorithmic bias that is problematic from the perspective of EU equality and non-discrimination laws.

Previous studies have already raised concerns about the potential of algorithmic discrimination to create challenges in the decision-making processes of the legal profession (Kleinberg *et al*., 2018, Colomina Saló et al., 2024), and such algorithmic risk assessments may continue if existing biases are present in historical data sets (Legg & Bell, 2020). The concept of algorithmic discrimination should be adapted to the legal framework that safeguards the principle of equality under the law. In the context of EU equality and non-discrimination law, and according to Article 19 TFEU, algorithmic discrimination should refer to any discrimination based on sex, race or ethnic origin, disability, sexual orientation, religion or belief, and age, as these are the grounds listed in that provision. However, the grounds for algorithmic discrimination appear to be broader under Article 21 of the Charter of Fundamental Rights of the EU (CFREU), which prohibits any discrimination based on any ground. The CFREU thus provides an open list of grounds for discrimination, including examples beyond those specified in Article 19 TFEU, such as social origin, genetic features, language, political or other opinions, membership of a national minority, property or birth.

Despite the extensive list of grounds of discrimination in the CFREU on which algorithmic discrimination could be based, the main issue is that such discriminations are sometimes not easily detectable, as they only indirectly discriminate against individuals or social groups. In the context of algorithmic decision-making, if an algorithm's design or implementation results in discriminatory outcomes – such as biased decisions on hiring, promotion, or pay – it could be regarded as indirect discrimination. The fact that it is indirect means it is not based on variables that the algorithm itself directly uses, but rather on the disadvantage or the different impact the algorithmic application has on members of protected groups (Morondo Taramundi, 2022). For example, if an AI-powered contract-drafting system used by law firms to produce employment agreements is trained on historical contracts, those contracts could reflect gender biases. If past contracts consistently underpaid female employees compared to their male counterparts, the AI might unintentionally adopt this discriminatory pattern. Consequently, organizations deploying algorithms must ensure

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transparency, fairness, and accountability to prevent the reinforcement of gender-based disparities.

A law firm implementing an AI system has the responsibility to integrate this system carefully, strictly control access to its information and algorithms, and select solutions that offer strong safeguards in accordance with relevant data protection laws. Additionally, a law firm must choose the most suitable processing platforms or systems based on the sensitivity of the information they handle and use in their algorithms. For example, a law firm might, due to the nature of its data, opt for a local AI system with decentralized processing to prevent unsupervised algorithms, data leaks, or unauthorized third-party access.

However, there is an important caveat: if the algorithm's impact is objectively justified by a legitimate aim and the means used are appropriate and necessary, it may not be considered discrimination under EU laws. In those cases, we are dealing with "algorithmic bias" rather than "algorithmic discrimination", as explained in the following section. For example, algorithms may contain biases related to protected characteristics like age, race or gender. Some restrictions on employment, such as age requirements for physically demanding jobs, may be considered reasonable and necessary and, therefore, justified. Although there may be an age bias, it does not constitute discrimination because, in this case, the difference is justified and aligns with the legal framework. Therefore, when assessing the legal implications of an algorithm, it is important to consider the specific context and purpose for which it is used (FRA, 2022).

3.2. Gender biases when using LLMs for drafting legal documents

Algorithmic bias, described as "a systematic error of any kind in the outcome of algorithmic operation" (Bellamy, 2018), includes various types of errors – statistical, cognitive, societal, structural, or institutional – that can potentially lead to discrimination. In legal contexts, these biases are particularly troubling when they systematically disadvantage unprivileged groups, as emphasized in the concept of "algorithmic fairness" (Bellamy, 2018). This section examines how biases, especially gender biases, manifest in LLMs used for drafting legal documents, urging legal practitioners to consider how these biases may impact legal fairness and representation.

Biases in LLMs can be categorized into two main types: a) data bias, which occurs when the training data itself is biased (Navas Navarro 2023). For example, if an AI system for legal drafting is trained on historical case law where custody rulings predominantly favoured women; and b) outcome bias, which occurs when the results reflect unequal ground truths, even if the data is unbiased. This type of bias can surface when an LLM underrepresents certain demographics, resulting in skewed outputs in legal processes. While algorithmic bias does not necessarily surpass the bias already present in society, it can reproduce and amplify existing societal inequalities at scale, especially when deployed without sufficient oversight (Barocas, Hardt & Narayanan, 2019). Additionally, even the use of grammatically generic masculine terms can foster representational imbalance, reinforcing normative assumptions about professional roles and underrepresenting women in high-status legal contexts (Franzoni, 2023).

Furthermore, biases can be divided into three subcategories commonly found in LLMs (Crawford, 2017): i) Allocational bias, where the model allocates resources or opportunities unfairly, such as favouring certain demographics in legal rulings; ii) Representational bias, which occurs when social groups are underrepresented or stereotyped. For example, LLMs may disproportionately depict women in lower-status professions like secretaries rather than high-status professions like lawyers; and iii) Linguistic bias, which occurs in languages with grammatical gender, where LLMs may generate text that defaults to masculine forms, reinforcing male-centric perspectives (Franzoni, 2023).

To systematically explore how gender biases manifest in legal LLMs, this study has evaluated both the main commercially available LLMs for legal professionals and the main custom-made AI tools created by law firms, to identify linguistic and representational biases in both generic and domain-specific LLMs. The evaluation has focused on the presence of masculine defaults in gendered languages like Spanish, where grammatical gender can influence legal drafting. For instance, when generating legal documents in Spanish, tools may default to masculine forms for nouns and titles, reinforcing gender stereotypes. Table 3 provides an evaluation of gender bias in the Spanish language for the ClickUp AI tool, listed above. As demonstrated in the table, ClickUp exhibits diverse types of gender bias, with some prompts offering split options to mitigate bias, while others default to masculine terms without providing neutral or feminine alternatives

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Table 3. Gender bias in ClickUp's AI Tool

Prompt #	Prompt (Spanish)	Translation	Gender bias detected	Options for avoiding bias
1	Escrito de Demanda por despido improcedente.	Lawsuit application for unjustified dismissal.	No.	Split options for gender.
2	Contrato de trabajo a tiempo parcial.	Part-time work contract.	Masculine form (trabajador).	N/A.
3	Contrato laboral de personal directive.	Work contract for manager position.	Masculine form (trabajador).	N/A.
4	Demanda por denegación de permiso para cuidado de hijos.	Lawsuit application for unjustified denial of a child-care leave.	Masculine form (trabajador).	Split options for some words (hijo/hija).
5	Convenio de divorcio con custodia de hijos a favor de una de las partes.	Divorce agreement with child custody to one party.	Masculine form (abogado).	Uses neutral form (cónyuge).
6	Acuerdo Económico de Capitulaciones Matrimoniales.	Prenuptial property agreement.	Masculine form (abogado).	Uses neutral form (cónyuge).
7	Demanda de divorcio contencioso con de custodia de hijos, pensión de alimentos y pensión compensatoria.	Divorce petition with custody and compensatory claims.	Masculine form (abogado).	Uses neutral form (cónyuge).
8	Contrato de Alquiler de Vivienda.	Residential rental agreements.	Masculine form (arrendador/arrendatario).	Split option for titles (Sr./Sra) but incorrect gender alignment.

Source: own creation

The biases found in ClickUp reflect wider patterns in LLMs used for legal practice. Many of these tools tend to default to masculine forms for roles such as "lawyer" (*abogado*) or "landlord" (*arrendador*), thereby reinforcing gender stereotypes in legal settings. However, these biases are not limited to Spanish. In English, legal LLMs frequently default to masculine terms like "landlord" without providing gender-neutral options like "lessor" or split forms such as "landlord/landlady".

A systematic assessment of various LLMs, including those created by law firms, showed that biases are often embedded in the training data, reflecting historical and cultural inequalities. For example, in prestigious professions such as law or medicine, LLMs tend to favour masculine terms, whereas in caregiving roles or lower-status jobs, feminine terms are more prevalent. This bias is problematic because it can result in underrepresentation or stereotyping, thereby reinforcing damaging societal norms.

To address gender bias in LLMs, we can take a few simple yet essential steps. First, it is crucial to use balanced training data that fairly represents all genders, especially in how various professions are depicted. Next, legal professionals

should learn to craft prompts in a gender-neutral manner or clearly specify when gender-specific information is necessary. Regularly reviewing and updating the systems to identify and replace gendered language with more neutral options is also beneficial. Lastly, transparency is important: law firms should inform clients when AI tools are used and be transparent about any limitations or potential biases of these tools. By ensuring training data is balanced and designing LLMs with gender neutrality in mind, developers and legal professionals can reduce the risk of reinforcing gender biases in legal document generation. Although this type of transparency does not eliminate bias entirely, it promotes accountability and encourages law firms to actively monitor and address gender bias.

4. Gaps and areas for improvement in the current practice

As AI begins to integrate into the daily tasks of lawyers, it is crucial to establish best practices to ensure the quality, reliability, and fairness of the generated texts. This section offers recommendations for lawyers and legal practition-

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ers on how to use AI LLMs and tools responsibly and to meet their professional obligations.

First, legal practitioners should uphold their professional duties such as competence, independence, and safeguarding client confidentiality (Legg & Bell, 2020). Recently, the number of official requests asking for clarification on guidelines for lawyers regarding the use of generative AI in managing cases has increased significantly (for instance, USPTO 2024). In this sense, one area where legal professionals using AI could dedicate more effort and resources is the development and implementation of Rules of Conduct for AI use in legal practice. Although each Member State within the EU has its own code of conduct for lawyers, the Council of Bars and Law Societies of Europe (CCBE) has issued a Model Code of Conduct for European Lawyers (CCBE, 2021), which, unfortunately, does not reference the use of AI or technological tools within the document. Therefore, codes in EU countries could explicitly outline the ethical responsibilities related to the use (or non-use) of AI by lawyers, including duties of competence (and diligence), communication, confidentiality, and supervision (Cerny *et al*., 2019). For example, updated codes could include clauses that require lawyers to inform clients about the risks and limitations of any AI they consider using, and to oversee work assisted by AI (Gordon & Ambrose, 2017).

Furthermore, in the changing landscape of legal documentation, the use of AI in drafting processes requires a reassessment of transparency standards. Introducing a watermark or a clear indicator showing that no human intervention was involved in fully AI-generated documents could be a solution. A pioneering step might be the introduction of "AI Transparency Certificates" for documents created with AI support, offering a detailed report on the AI's role, the data it was trained on, and the human oversight involved. This approach aligns with the transparency principle (recital 58 GDPR), ensuring all parties are aware of the document's origin and the level of AI involvement. It acts as a safeguard against ethical issues, such as undisclosed automation, and preserves the integrity of the legal process. Additionally, it clarifies responsibility and accountability, especially in cases where legal outcomes are challenged. As AI continues to integrate into legal practices, such indicators will be vital in maintaining the values of honesty and transparency that underpin trust in legal institutions and their outputs.

Service contracts between lawyers and clients could also include a few clear clauses. These might cover whether AI will be utilized in the client's case, how their data will be kept confidential, and a commitment that human professionals will always supervise AI decisions. The contract could also describe how the firm adheres to ethical AI standards, give clients the option to agree or opt out of AI use, and clarify who is responsible if something goes wrong with an AI-driven decision.

Moreover, there is a need for AI training specifically dedicated to legal professionals. Currently, very few specialized postgraduate courses for lawyers cover AI, and many lawyers using AI within their law firms lack sufficient training on the software they utilise. In this context, lawyers working with AI should be required to develop an understanding of the technical assumptions and foundations of AI to anticipate future advancements (Legg & Bell, 2020). Specifically, legal professionals need to understand the capabilities and limitations of AI tools, and proper training ensures they comprehend how AI algorithms function, interpret results, and make informed decisions. Without appropriate training, lawyers risk misusing or misinterpreting AI-generated outputs, which could lead to errors or unintended consequences. Additionally, as mentioned earlier, AI tools may inadvertently reinforce biases or produce discriminatory outcomes, so legal experts should be aware of the ethical considerations involved. Training can help lawyers navigate legal and regulatory frameworks related to AI, ensuring compliance with non-discrimination laws and privacy regulations. In conclusion, legal experts should see AI as a collaborative tool rather than a substitute. Adequate training fosters a mindset that combines human expertise with AI capabilities.

Finally, there is a need for monitoring bodies and mechanisms that assess the effects of algorithm-based legal decisions (Morondo Taramundi, 2022). Although Table 2 above shows that all three tailor-made tools include a supervisory team of AI experts who monitor the functioning of the tool, such a role could be established in law in the same way that companies processing the personal data of EU citizens are required to incorporate a data protection officer under the terms of the GDPR. Another additional mechanism could be the implementation of regular audits of the AI models to ensure that the algorithms minimize potential biases in the use of legal documents that display discriminative elements based on race, sex, religion, national origin, ethnicity, disability, age, sexual orientation,

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gender identity, marital status, or socioeconomic status. Ultimately, the need for lawyers to understand how AI generates outputs is important for reducing bias and providing sound counsel to clients (Cerny, 2019).

Conclusions

This article identifies and examines the main LLMs used by lawyers. Despite the differences among these LLMs, this study demonstrates that integrating AI LLMs into legal practices signals a transformative era, moving beyond traditional methods to redefine efficiency, accuracy, and innovation in legal work. This shift signifies a major change towards increasing productivity, automating complex legal tasks, and enabling deep analytical insights. The use of AI in areas such as, but not limited to, drafting legal documents, reviewing contracts, or researching specific legal issues highlights the significant benefits of technology in improving legal service delivery to a range of clients.

These technologies, despite their varied applications, collectively highlight a paradigm where legal operations are not just optimized but reimagined. AI's role in enhancing the drafting of documents, streamlining contract reviews, and providing predictive analytics exemplifies the strategic integration of digital intelligence into the heart of legal workflows. This move towards a more data-driven, automated, and intellectually enriched legal practice aims to raise the standard of legal services, making them more accessible, accurate, and client-centred.

However, the legal community must address existing concerns around algorithmic discrimination and gender bias to promote fairness in AI-assisted legal decisions. This article has thoroughly analysed potential risks associated with using LLMS for legal purposes, particularly in relation to algorithmic discrimination and gender biases. To reduce such risks, transparency between law firms and their clients regarding AI use in legal matters is crucial for maintaining trust and ethical standards. Furthermore, establishing watchdogs to monitor AI applications within the legal sector will help ensure compliance with non-discrimination and privacy regulations.

This study highlights the urgent need to update and define the ethical and gender-based rules that govern the use of AI in the legal profession. To implement these rules effectively, education and training are essential for legal professionals to integrate AI tools into their daily practices responsibly, as if AI were a colleague. Understanding both the capabilities and the limitations of AI can help lawyers use technology to support their expertise rather than replace human judgment. Essentially, lawyers must employ these technologies carefully, ensuring their use aligns with the fundamental principles of justice and fairness that underpin their professional responsibilities. Additionally, open communication between law firms and clients regarding AI adoption is vital to foster trust, ensure compliance, and uphold ethical standards in the legal field.

Therefore, in light of the evident integration of AI into the legal landscape, it is imperative that the legal community proactively defines the parameters and guidelines for AI adoption. Ultimately, AI should not replace human expertise but rather augment the capabilities of the legal profession. While the future undoubtedly involves lawyers and law firms collaborating with AI systems, the critical task lies in delineating the ethical, regulatory, and practical boundaries within which AI operates, so that the legal sector can take advantage of the opportunities offered by technological advances while mitigating its risks.

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