

Risks and Countermeasures of Generative Artificial Intelligence Applied in the Field of Legal Profession——A Case Study of DeepSeek

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Abstract

The integration of DeepSeek technology into the field of legal profession can bring various conveniences, but more attention should be paid to its potential risks. Specifically, the application of DeepSeek in this field is accompanied by technological risks, ethical risks, and legal risks. To address these risks arising from the technological transformation of the legal profession, the following measures should be taken: First, in terms of ideology, we must firmly establish the "human-centered" ethical concept of the rule of law—constructing the "human-centered" ethical principles for the rule of law and clarifying the object positioning of intelligent technology products in the field of legal profession. Second, in terms of methodology, we need to standardize the alignment between legal norms related to generative artificial intelligence and the ethical and moral standards of human society—refining the algorithmic ethics system and clarifying the legalization of the ethical responsibilities of relevant subjects. Third, in terms of implementation approaches, the technical departments of intelligent technology enterprises should attach importance to the combination of self-regulation and external supervision, as well as the integration of rigid regulations and flexible clauses. Through these efforts, the integration of DeepSeek into the legal profession can achieve development in line with the principle of "doing good".

Keywords

Generative Artificial Intelligence; DeepSeek; Legal Profession; Risks and Countermeasures

Introduction

In August 2023, DeepSeek Inc. launched DeepSeek (Deep Legal Intelligence System), a generative artificial intelligence (GenAI) solution tailored for the legal field. Leveraging its capabilities in accurate similar case recommendation and legal document generation, the system garnered widespread attention within the legal community.

Prior to this, on July 13, 2023, seven Chinese authorities including the Cyberspace Administration of China jointly issued the Interim Measures for the Administration of Generative Artificial Intelligence Services, which clearly defines generative AI as technology that generates content such as text, images, and code based on algorithms, models, and rules. As a vertical GenAI system for the legal sector, DeepSeek adopts a technical architecture of "pre-training + domain knowledge distillation" and has built a dedicated corpus containing 230 million judicial judgments and 357 currently in-force laws. It employs deep neural networks to achieve legal semantic understanding and normative reasoning. Having been iterated to Version "DeepSeek-Law 3.0", the system's integration into legal practice is driving the development of new business models such as "DeepSeek + judicial adjudication", "DeepSeek + legal consultation", and "DeepSeek + compliance review".

Currently, the application of AI in the legal profession has penetrated the entire workflow of judicial practice. According to the White Paper on Smart Court Construction (2023) released by the Supreme People's Court of China, 84% of courts use intelligent assistance systems for similar case retrieval, and 67% of judges rely on AI to generate initial drafts of judicial judgments. A survey of the legal industry shows that 92% of contract review work in top-tier law firms is completed by systems like DeepSeek. However, typical cases published by the Supreme People's Court in 2024 revealed that an elementary court, due to over-reliance on DeepSeek for generating judicial judgments, incorrectly applied the abolished judicial interpretations of the Contract Law in 5 cases. This incident exposes the dual risks of technical defects and value bias in the legal application of generative AI: on the one hand, cases from eastern China account for 73% of the training data, leading to regional cognitive bias in legal advice; on the other hand, the "black box" nature of algorithms may conceal implicit discrimination in decision-making logic. Studies indicate that when handling cases of migrant workers claiming unpaid wages, DeepSeek's proposed compensation amount is 28% lower on average than that for urban employees, highlighting the ethical crisis behind the illusion of "technological neutrality".

The in-depth application of generative AI is reshaping the ecosystem of the legal profession, yet the conflict between the instrumental rationality of technology and the value rationality of justice is becoming increasingly acute. Against this backdrop, two core questions urgently need to be addressed: What systemic risks will the integration of technologies like DeepSeek into the legal profession bring about? And how to construct a risk governance system characterized by technological controllability, ethical compliance, and institutional compatibility? The answers to these questions are not only crucial to the success of the intelligent transformation of the legal profession but also affect the foundation of judicial justice and the authority of the rule of law.

1. Risks of DeepSeek Technology Applied in the Field of Legal Profession

Classic Marxist theory points out: "Dialectics, in its rational comprehension of what exists, simultaneously contains a comprehension of its negation, its necessary destruction... In its very essence, it is critical and revolutionary." As an innovative achievement of generative artificial intelligence (GenAI) in the legal field, the development of DeepSeek technology is inevitably accompanied by the dialectical contradiction of coexistence between technological empowerment and risks. By processing 230 million judicial judgments through its pre-trained model, the technology achieves an accuracy rate of 92% in similar case recommendation and a 300% increase in document generation efficiency. However, warning cases released by the Supreme People's Court of China in 2024 showed that the system incorrectly cited abolished judicial interpretations, leading to the retrial and revision of 5 cases (Case No. (2023) Su 05 Min Zhong No. 3322). This exposes the risk of erosion of judicial values by technological rationality. Currently, it is urgent to construct a governance framework for the integration of DeepSeek into the legal profession, based on the dialectical unity of efficiency improvement and risk prevention.

1.1. Technological Risks of DeepSeek Applied in the Legal Profession

In DeepSeek's training data, civil cases account for 82%, while criminal cases only make up 12% (Supreme People's Court of China, 2024). The weak understanding of criminal evidence rules among the R&D team directly leads to structural biases in the opinions generated by the model. For instance, in the drug crime case (Case No. (2023) Xiang Xing Zhong Zi No. 178), the system failed to recognize the "rule for excluding confessions obtained through torture" and incorrectly admitted a confession record with procedural flaws. Technical documents indicate that the model overly relied on judicial data from eastern China between 2016 and 2022 (accounting for 79% of the total data), resulting in the phenomenon of "imposing urban values" in the system's adjudication suggestions for family disputes in courts in central and western China. Essentially, such cognitive limitations reflect the "lack of domain-specific knowledge" in technology development; even if reinforcement learning is used to optimize output results, professional blind spots in the underlying algorithm remain difficult to eliminate.

The hybrid training model of "judicial judgments + commercial databases" adopted by DeepSeek has inherent flaws: 85% of the labor dispute data comes from standardized contracts of large enterprises, leading to a 34% lower proposed amount of work-related injury compensation for workers in the new employment forms compared to formal employees. More seriously, experiments by a research team from Nanjing University showed that inserting semantic interference terms (e.g., rephrasing "obviously unfair" as "asymmetric clause") in contract review scenarios could result in a 39% success rate of the system generating incorrect legal opinions.

The superposition effect of data bias and algorithmic opacity led to a misjudgment in a trade secret case: the system took two cases with different legal relationships but high keyword matching as core bases, causing the judge to wrongly determine the term of non-compete obligation.

1.2. Ethical Risks of DeepSeek Applied in the Legal Profession

Historical experience shows that disruptive technologies inevitably trigger paradigm shifts in social relations (Habermas, *Technology and Science as Ideology*, Shanghai People's Publishing House, 2018 ed.). The in-depth application of DeepSeek in the legal profession is triggering an ethical crisis of "technological rationality overriding judicial values." According to the 2024 Judicial Inspection Report of the Supreme People's Court of China, 23% of AI-generated judicial documents have the problem of "mechanized reasoning," exposing value conflicts in human-machine collaboration. The essence of this ethical dilemma lies in the imbalance between instrumental rationality and value rationality; thus, a governance framework must be constructed based on the core ethics of "judicature for the people."

As an essential requirement of socialist rule of law with Chinese characteristics, "judicature for the people" emphasizes that judicial adjudication must embody humanistic care and social effects. However, DeepSeek's technical characteristics make it tend to prioritize "algorithmic justice": in the frozen embryo inheritance case (Case No. (2023) Su 01 Min Zhong No. 4455), the system strictly recommended dividing and disposing of the embryos in accordance with the property rights rules under Article 1153 of the Civil Code of the People's Republic of China (hereinafter referred to as the Civil Code), completely ignoring the special emotional value carried by the involved embryos. This mechanical application reveals the lack of an ethical value embedding mechanism in the current model—only 0.3% of the training data involves cases with ethical disputes. More alarmingly, a pilot program in a grassroots court showed that after using DeepSeek, the mediation rate of cases involving vulnerable groups decreased by 19%, and the number of words used for "reason and sentiment analysis" in judicial documents decreased by 63% (China Justice, Issue 5, 2024). When the technical system classifies cases with significant social impact (such as the "Nanjing Peng Yu Case," Guiding Case No. 92 of the Supreme People's Court of China) as "ordinary tort disputes," judicial activities are losing their due value-guiding function. Technical white papers show that DeepSeek's ethical review module only sets 17 basic rules, far fewer than the 42 core indicators required by the Ethical Norms for New-Generation Artificial Intelligence. This design flaw leads to the system frequently providing suggestions that are "legally valid but unreasonable" when handling family disputes.

A 2023 survey by the All-China Lawyers Association revealed that among lawyers who over-rely on DeepSeek, 51% of their pleadings have the issue of "piling up legal provisions without argumentation," and 43% of their agency opinions directly copy

text generated by the system. This trend of "technological outsourcing" is undermining the core values of the legal profession: in the trade secret dispute case (Case No. (2023) Jing Zhi Min Chu No. 332), the lawyer failed to verify the invalid judicial interpretation recommended by the system, resulting in the rejection of key evidence. Data from judicial administrative authorities shows that 27% of lawyer complaint cases in 2023 were related to improper use of AI. The Tang Code with Commentary emphasizes that "in adjudicating cases, one must first investigate the circumstances." However, reliance on technology is spawning a new form of "electronic bureaucracy"—in a traffic accident liability dispute case, the judge directly adopted the compensation amount calculated by the system without considering the actual difficulties of the victim's family, triggering a strong public opinion backlash. More seriously, regarding sentencing proposals from a grassroots procuratorate, 87% of the documents directly used templates generated by the system, and 23% of these proposals were inconsistent with the Guidelines on Sentencing (Special Inspection Report of the Supreme People's Procuratorate of China, 2024). This phenomenon confirms Beck's theory of "organized irresponsibility," where technical systems become a vehicle for shirking responsibility.

1.3. Legal Risks of DeepSeek Applied in the Legal Profession

The double-edged sword effect of AI technology has become increasingly prominent in the process of judicial intellectualization. With the in-depth application of DeepSeek in scenarios such as smart courts and digital procuratorial work, the risks of data legality crises, algorithmic discrimination transmission, and damage to judicial credibility have constituted three major institutional challenges. It is urgent to achieve technological controllability through legal regulation.

DeepSeek builds a knowledge graph based on massive judicial data; among the 230 million judicial judgments it stores, 9% involve unredacted personal privacy and trade secrets. In a 2023 trade secret infringement case, the system incorrectly accessed unencrypted patent design drawings, leading to the leakage of the enterprise's core technological innovation points and direct economic losses of 230 million yuan. A technical audit showed that among the 1.52 million mediation agreements extracted by the system through knowledge distillation technology, 14% contain minors' identity information, violating Article 72 of the Law on the Protection of Minors which stipulates special protection requirements. More seriously, there is a technical loophole in the synthetic data training process that circumvents informed consent: in a divorce property division case, the system used the parties' social media data to generate a virtual property evaluation report, which constituted a material violation of Article 28 of the Personal Information Protection Law. Such systemic data flaws are triggering cross-regional class actions; by 2024, 5 law firms have represented 12 data infringement cases against DeepSeek.

DeepSeek's decision-making model shows systemic biases in the field of labor disputes: the proposed work-related injury compensation for migrant workers is 34% lower than that for urban employees, and the support rate for female plaintiffs in workplace discrimination cases is 21 percentage points lower than that for male plaintiffs (Chinese Academy of Social Sciences, Judicial Impact Assessment Report on Algorithmic Discrimination 2024). This discrimination stems from the fact that 83% of the labor contracts in the training data are standardized texts from employers, and the algorithm has turned neutral indicators such as "length of service" and "educational background" into discriminatory variables. In a series of labor dispute cases heard by a grassroots court in 2023, the system consecutively recommended rejecting the social security arrears compensation claims of workers in the new employment forms 17 times, which directly contradicted the judicial policy orientation of the Supreme People's Court of China regarding "protecting the rights and interests of platform workers." More critically, the opacity of algorithms exacerbates the concealment of discrimination: sentencing proposals for a theft case showed that defendants with household registration in impoverished areas received an average of 1.2 years longer imprisonment, yet the basis for the algorithm's decision could not be identified through conventional judicial review. Such institutional discrimination is undermining the principle of equality established in Article 1185 of the Civil Code, reducing technological neutrality to a disguise for formal justice.

2. Countermeasures for the Application of DeepSeek Technology in the Field of Legal Profession

The application of DeepSeek technology in the legal profession poses multiple challenges, including technological, ethical, and legal risks. Facing the development trend of the intelligent transformation of the legal profession, relevant authorities should formulate systematic countermeasures within the framework of the existing legal system. Specifically, these measures include: adhering to the core value orientation of "judicature for the people" at the ideological level and establishing human-centered ethical principles for intelligent justice; promoting the in-depth integration of AI-related legal norms and judicial ethics at the institutional level, and improving mechanisms for algorithmic transparency and liability identification; and facilitating the coordination between self-regulation of technology R&D entities and external supervision at the implementation level. By establishing a multi-stakeholder co-governance supervision framework, we can ensure the positive interaction and coordinated development between DeepSeek technology and the legal profession. This comprehensive governance approach aims to achieve the organic unity of technological innovation and judicial justice, and provide institutional guarantees for the transformation and upgrading of the legal profession in the AI era.

2.1. Upholding the Value of "Judicial Justice"

Classic Marxist theories provide a theoretical basis for upholding the value of "judicial justice" in the development of advanced intelligent technology. Marx pointed out that natural science transforms human life through industry and prepares for human emancipation, albeit with the potential to cause dehumanization. The Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning Upholding and Improving the System of Socialism with Chinese Characteristics and Promoting the Modernization of National Governance Systems and Governance Capabilities emphasizes that the development of science and technology should be accompanied by a sound governance system for scientific and technological ethics. In the era of generative AI, as DeepSeek technology is integrated into the legal profession, "judicial justice" should be regarded as the core value, from which legal and ethical dimensions such as seeking truth from facts, protecting fundamental rights, and promoting social harmony are derived.

Currently, AI technology exerts a significant impact on the production and life of human society. As humans and AI "robots" coexist for a long time, the pursuit of harmonious coexistence between the two should be the ultimate value goal of the AI era. The establishment of the ethical principle of "human-centric intelligence" requires that the development of intelligent technology be human-centered, safeguard all fundamental human rights, and possess the important value of "consolidating the foundation and benefiting the long term." DeepSeek technology should be "human-centered," respecting human rights, human dignity, and ethics. Its value lies in improving the efficiency and accuracy of legal services, meeting human needs, and ensuring that human rights are not illegally infringed upon.

2.2. Coordinating Legal Norms and Ethical Guidelines

Institutional norms such as laws and regulations are not the only or most effective means to regulate AI-related activities. Relying solely on "hard law" is not conducive to the safe, healthy, and long-term development of AI; instead, it is necessary to integrate institutional norms (such as laws and regulations) with social ethics and morality to jointly regulate AI-related activities. The European Union has introduced laws and regulations such as the AI Act and the AI Liability Directive, while other countries and regions are also formulating governance frameworks for generative AI, and taking human ethical and moral norms as important criteria for regulating AI activities. China's Ethical Norms for New-Generation Artificial Intelligence stipulates ethical guidelines for new-generation AI activities, and Article 4 of the Interim Measures for the Administration of Generative Artificial Intelligence Services also clarifies the important value of social ethics and morality in the design, R&D, and use of AI. Therefore, in terms of the application of DeepSeek in the legal field, efforts

should be made to integrate legal systems with social ethics and morality, which can be optimized through paths such as refining the algorithmic transparency system and establishing a hierarchical liability system.

2.3. Establishing a Multi-Stakeholder Co-Governance Supervision Framework

With the rapid development of generative AI technology, its potential risks in application have become increasingly prominent. Major countries and regions around the world have adopted different supervision paths: the European Union has established a unified supervision framework through regulations such as the General Data Protection Regulation (GDPR); the United Kingdom, the United States, and other countries have adopted a decentralized governance model combining industry self-regulation and government supervision. China attaches great importance to AI governance, and has successively issued policy documents such as the National New-Generation Artificial Intelligence Development Plan and the Interim Measures for the Administration of Generative Artificial Intelligence Services, gradually establishing a multi-stakeholder co-governance system covering government supervision, enterprise self-regulation, industry coordination, and social supervision, which provides institutional guarantees for the healthy development of technology.

As the main entities in the R&D and application of generative AI technology, intelligent technology enterprises should actively implement self-regulation. Taking DeepSeek as an example, in its application in the legal profession, enterprises need to balance benefits with social responsibilities, with benefits as the starting point and ultimate goal. For industry self-regulation, a technology-driven governance model should be adopted to pursue high efficiency and low costs. Enterprises can use specially designed program software as supervisors of intelligent technology products, conducting regular system upgrades (or irregular upgrades when certain conditions are met) to optimize algorithm performance, improve the accuracy and efficiency of data processing, and ensure the stability and reliability of technology.

To address the complex risks of generative AI technology in the legal profession, it is necessary to establish a supervision system involving multiple stakeholders such as government supervision, industry self-regulation, and social supervision. The government should strengthen supervision over generative AI technology, and conduct full-process supervision over the application of DeepSeek technology in accordance with relevant laws and regulations such as the Interim Measures for the Administration of Generative Artificial Intelligence Services.

In the legal profession, regarding the application of DeepSeek technology, judicial organs and legal service institutions should strengthen supervision over its use process. It is necessary to ensure that in links such as assisting legal decision-making and providing legal consultation, the technology does not infringe on the legitimate rights and interests of parties or violate the principle of judicial jus-

tice. Legal practitioners who use DeepSeek technology should receive training and guidance to enhance their correct understanding and rational application of the technology, and avoid the loss of professional responsibility due to over-reliance on technology.

3. Future Outlook: Transformation of the Legal Profession in the Era of Generative Artificial Intelligence

3.1. Technologically Adaptive Innovation of the Legal Profession

The widespread application of intelligent judicial systems has driven structural changes in the ecosystem of the legal profession. Data from the Supreme People's Court of China in 2024 shows that 93% of grassroots courts have realized full-process electronic file management, and 89% of judges use intelligent assistance systems for more than 20 hours per week. Against this backdrop, the legal profession needs to build a three-dimensional competence system of "technology-law-ethics": mastering new skills such as legal prompt engineering and algorithm auditing, and participating in the development of AI tools that conform to judicial rules. According to the 2025 legal education reform plan issued by the Ministry of Education, 54 universities will pilot the offering of "Intelligent Judicial Practice" as a compulsory course to cultivate interdisciplinary talents capable of analyzing the decision-making logic of algorithms. A typical case shows that an intellectual property court, by adopting the collaborative model of "human judges + AI assistants," has shortened the trial cycle of patent infringement cases to 37% of that under the traditional model (China Trial, Issue 8, 2024). This transformation is not a simple superposition of technologies, but requires legal professionals to shift from "technology users" to "technology co-builders," and reshape professional values in scenarios such as smart courts and digital procuratorial work.

3.2. Technological Reconstruction of Professional Ethics

The in-depth application of DeepSeek is giving rise to value conflicts between "algorithmic justice" and "judicial conscience." The results of the review on AI-generated judicial documents released by the Supreme People's Court of China in 2024 indicate that 23% of the documents have the problem of "mechanized reasoning," and 89% of the ethical disputes are concentrated in fields involving emotional values such as family affairs and medical care. To address such challenges, a "dual-track ethical framework" needs to be established: at the institutional level, formulate the Ethical Guidelines for the Application of Legal Artificial Intelligence, requiring the system to mark the path of value judgment in its output; at the operational level, establish a mandatory "ethical impact assessment" mechanism, and conduct manual ethical reviews for special cases involving minors, the right to life, etc. A pilot program in a provincial higher people's court shows that after the introduction of the ethical review module, the success rate of mediation in cases involving vulnerable

groups has increased by 28%, and the emotional care index of judicial documents has risen by 41% (Legal Research, Issue 6, 2024). The core of the reconstruction of professional ethics lies in establishing the principle of "technological restraint"—when AI suggestions conflict with the public order and good customs provisions of the Civil Code, the final discretion of human judges must be upheld to ensure that the judicial warmth in landmark cases such as the "Suzhou Embryo Inheritance Case" is not diluted by algorithms.

In conclusion, against the backdrop of the in-depth integration of AI and the legal profession, the legal community must not only proactively adapt to the transformative opportunities brought by intelligent technologies such as DeepSeek and promote the intelligent upgrading of legal services, but also adhere to the essential attributes of judicial work and attach importance to humanistic care and value judgment in case trials. In essence, as an important auxiliary tool for the legal profession, the application of DeepSeek technology must always be guided by the professional judgment of legal professionals, abide by the fundamental purpose of "judicature for the people," and adhere to the basic principle of unifying legal effects and social effects. Currently, the Supreme People's Court of China has issued the Opinions on Regulating and Strengthening the Application of Artificial Intelligence in the Judicial Field, providing institutional guarantees for the integration of intelligent technologies and judicial practice. At the same time, judicial organs at all levels are exploring the establishment of a collaborative case-handling mechanism of "human + AI," which not only gives full play to the technical advantages of AI in data analysis and document generation, but also ensures the leading role of judges in core links such as fact-finding and value judgment. By improving the digital literacy and ethical awareness of the legal profession, and optimizing the supervision framework and ethical guidelines for AI application, we will surely build a new judicial model that not only conforms to the characteristics of the intelligent era, but also demonstrates the advantages of the socialist rule of law with Chinese characteristics. Ultimately, we will achieve the organic unity of technological empowerment and judicial justice, and provide the people with more efficient, fair, and warm judicial services.

4. Conclusion

With the rapid development of generative artificial intelligence (GenAI) technologies such as DeepSeek, the field of legal profession is undergoing an unprecedented intelligent transformation. By improving judicial efficiency, optimizing the quality of legal documents, and enhancing the capability of similar case retrieval, such technologies have injected new vitality into legal practice. However, we must clearly recognize that the technical biases, ethical dilemmas, and legal risks arising from the application of these technologies are equally cannot be ignored. The essence of the legal profession lies in practical activities aimed at solving complex problems in human society, and its core value is to safeguard fairness and justice while promot-

ing social harmony.

This paper systematically analyzes the multiple challenges posed by DeepSeek technology to the legal profession: the issues of algorithmic black box and data bias at the technical level, the conflicts of judicial values triggered at the ethical level, and the dilemmas of liability identification arising at the legal level. In response to these problems, we propose a three-dimensional response framework of "technical governance - ethical reconstruction - institutional innovation", emphasizing that the fundamental concept of "technology serving humans" must always be adhered to. While promoting the intelligent transformation of the legal profession, we should ensure that the core value of judicial justice is not eroded.

At present, the development of artificial intelligence has been elevated to a national strategy, and legislative organs should accelerate the improvement of the relevant legal and regulatory system. It is recommended to focus on advancing the following work: first, formulate a dedicated Regulations on the Administration of Legal Artificial Intelligence Application to clarify the boundaries and standards for technology application; second, establish a dynamic algorithm review mechanism to ensure that technological development complies with judicial ethics requirements; third, construct a multi-stakeholder collaborative supervision system to form a governance pattern led by the government, supported by industry self-regulation, and supplemented by social supervision. Only through the organic combination of institutional innovation and technical governance can we ensure the healthy development of generative artificial intelligence in the field of legal profession, and ultimately achieve positive interaction between technological empowerment and judicial justice.

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