

Legal Profession in the Age of Artificial Intelligence: A Perspective from Legal Education

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Abstract:From the perspective of AI technology reengineering legal service business process, this paper discusses how the legal profession represented by lawyers utilize AI technology, analyzes the limitations of AI in legal practice, and identifies the optimal path for technical management of AI to improve legal service. The application of AI in the legal profession is mainly reflected in legal research and electronic forensics, contract management and litigation management, automation of legal document work, and legal big data analysis. The application of AI in the legal profession can promote the comprehensive deepening and innovation of the legal profession, promote the interdisciplinary innovation and development of law and AI, and serve the national strategy for AI development. The transformation of legal reasoning thinking and the application of AI technology to link up legal work flow are challenges to the legal profession. However, AI and legal profession will not and should not form a pattern of opposition. A digitally-infused humanistic approach should be fostered for the integrated development of AI and legal profession should be formed. The rational response of lawyers in the era of AI includes becoming proficient in technology, strengthening strategic attention in legal affairs, enhancing business management talents, and facing up to the arrival of legal AI as soon as possible through legal education.

Keywords:AI;Legal Profession;Legal Education

Introduction

Nowadays, the global pandemic of COVID-19 has completely changed the traditional mode of operation of the legal profession. Due to the need to maintain social distance in response to the epidemic, the legal profession community has to use information technology to maintain the operation of the legal system. In the era of artificial intelligence, the emergence of legal information systems such as online law firms, smart courts, and online arbitration has provided convenience for the legal profession to use information technology including AI. To meet the needs of clients under the condition of epidemic prevention and control, the legal profession represented by

lawyers has increased investment in information construction. On the one hand, they use the law firms' "cloud offices" to break through the predicament caused by the epidemic, and on the other hand, they use information technology to transform the professional service process of lawyers, promoting AI technology to become a normalized form of legal service online alongside offline and high-touch personal legal services with "high-touch" characteristics.^[1] The emergence of online law firms, smart courts, and digital arbitration platforms has not only changed how legal services are delivered but also raised crucial questions about how we educate future lawyers.

Divergent perspectives exist regarding AI's role in law. One view enthusiastically embraces AI, highlighting machine learning as a disruptive force that enhances legal practice through "responsive AI" and "limited memory AI." For instance, E-discovery systems improve iteratively with each task, often outperforming human lawyers in speed and accuracy.^[2] Numerous scholars advocate for the proactive adoption of AI to navigate profound industry changes.^{[3][4][5][6][7][8]}

Conversely, another perspective expresses caution over AI's potential to replace human legal work, raising ethical concerns about the erosion of professional subjectivity. Some warn that the "singularity" could redefine human existence, leading to the objectification of subjective judgment.^[9] The attempt to encode moral and legal reasoning into machines—absent human socialization and innate goodwill—poses significant risks. Thus, reconciling human-machine collaboration remains a critical challenge.^[10]

In the face of the trend of AI improving the efficiency of legal services, the work model of the legal profession is facing challenges. Legal professionals are worried that due to the introduction of AI service technology, the intellectual work of legal affairs will be replaced, and most of the manual work will be boring and repetitive review and supervision of machine work. The total hours billed for each problem of the same legal service will be reduced, and since the same legal service will take less

^[1] Legal Daily, "Cloud Offices' for Chinese Law Firms: Pragmatic in the Present, Promising for the Future." [EB/OL]. (2020-10-12)[2020-11-20]. <http://epaper.legaldaily.com.cn/fzrb/content/20201012/Article07002GN.htm?spm=zm1012-001.0.0.2.V6NINe>.

^[2] Kurt Watkins and Rachel E. Simon. "AI and the Young Attorney: What to Prepare for and How to Prepare" [EB/OL]. ABA, (2019-1-16)[2020-11-20].

^[3] Moore, Thomas R, "The Upgraded Lawyer: Modern Technology and Its Impact on the Legal Profession", *UDC/DCSL L. Rev.* 21 (2019), 27.

^[4] Markovic, Milan, "Rise of the Robot Lawyers", *Ariz. L. Rev.* 61 (2019), 325.

^[5] Barton, Benjamin H., and Deborah L. Rhode, "Access to Justice and Routine Legal Services: New Technologies Meet Bar Regulators", *Hastings LJ*, 70 (2018), 955.

^[6] Frostestad Kuehl, Heidi, "Technologically Competent: Ethical Practice for 21st Century Lawyering", *Case W. Res. JL Tech. & Internet*, 10 (2019), 1.

^[7] Zheng, Ge, "Big Data, Artificial Intelligence and the Future of the Legal Profession", *Prosecutorial View*, 4 (2018)

^[8] Li, Maojiu, "The Era of Artificial Intelligence: What Should Lawyers Think About?", *Chinese Lawyers*, 7 (2020)

^[9] Zhao, Tingyang "What Philosophical Questions Does Artificial Intelligence Raise?", *Wenhua Zongheng [Cultural 纵横]*, 1 (2020)

^[10] Yu, Ronald, and Gabriele Spina Ali, "What's inside the Black Box? AI Challenges for Lawyers and Researchers", *Legal Information Management*, 1 (2019), 2-13.

time, law firms will hire fewer partners but require them to share more of the firm's costs. the legal profession is both excited and perplexed about the arrival of the AI era. AI technology empowers lawyers to meet the needs of clients faster, cheaper, and more efficiently, but at the same time, the reduction of entry-level legal positions has caused concerns among legal professionals. In order to cope with this challenge, law schools are paying more and more attention to the understanding and innovation of emerging technologies in the training of lawyers' practice skills, providing necessary training for the future success of young lawyers.^[11]

At the same time, legal education stands at a crossroads. While some view AI as a disruptive force that will automate traditional legal tasks, others see it as a tool that can enhance legal practice when properly understood and utilized. This divergence in perspectives reflects a deeper tension within the legal academy about how to respond to technological change. The challenge for legal educators is to prepare students for a profession that is increasingly shaped by technologies that did not exist when current curricula were designed.

Legal education must undergo a fundamental transformation to address the AI revolution. Rather than merely adding technology courses to existing curricula, law schools need to rethink their educational paradigms to produce graduates who can leverage AI tools effectively while maintaining the critical thinking and ethical judgment that are the hallmarks of professional legal training.

1. The current situation of AI application in the legal profession

Artificial intelligence, at its core, involves computer programs that mimic human intelligence through learning, reasoning, and decision-making. Its applications in law are diverse and expanding. According to the International Association for AI and Law, key areas include: (1) formal models of legal reasoning; (2) computational models of legal decision-making; (3) computational models of evidence reasoning; (4) multi-agent modeling of legal reasoning; (5) executable legislative testing modeling; (6) automatic classification and summarization of text; (7) automatic extraction of legal information; (8) machine learning for electronic discovery; (9) retrieval systems for legal information; (10) research and development of legal robots.^[12]

As AI becomes more pervasive, clients expect lawyers to deliver services that are not only faster and cheaper but also technologically adept. Legal AI systems now support practice activities, add client value, and reduce long-term costs. Below are some prominent applications:

^[11] Carrel, Alyson, "Legal Intelligence Through Artificial Intelligence Requires Emotional Intelligence: A New Competency Model for the 21st Century Legal Professional", *Ga. St. UL Rev*, 35 (2018), 1153.

^[12] Xiong, Minghui, "Ten Frontier Issues in Legal Artificial Intelligence", *Chinese Social Sciences Net* (2019).

1.1 Legal research and electronic discovery

Legal research is a fundamental skill in legal work. During the process of legal research, natural language processing AI technology is used, such as IBM's legal AI system ROSS, which utilizes IBM's Watson technology. The technological advancement in legal research allows lawyers to discuss legal concepts with AI technology, and enables ROSS to analyze cases based on these concepts rather than strict search terms.^[13]

Evidence analysis is closely related to legal research, and AI is widely applied in electronic discovery. electronic discovery is a broad concept, including but not limited to evidence collection for litigation activities, such as the organization of evidence materials and relevance analysis for fact determination in both litigation and transaction processes. The AI machine learning process can receive thousands of documents and store these materials, then search and find relevant content, thereby supporting a large amount of evidence collection work in various businesses of lawyers, such as helping clients in dispute resolution, business negotiations, due diligence, and tax audits. Some legal technology companies specialize in developing AI products for electronic discovery for the legal profession, even changing the concept and service process of legal services.

1.2 Contract management and litigation management

The application of AI systems in contract management is mainly reflected in the automation of contract drafting and review. Large commercial institutions may have hundreds or even thousands of contracts executed annually with suppliers, contractors, or clients. The drafting and review of contracts are regular work for corporate legal affairs, and since the contract signing process involves cross-departmental collaboration, a lot of communication, collaboration, and process waiting are required. The application of AI systems in contract management aims to check for inconsistencies and errors in the manual contract review process and to provide constructive opinions on legal risks. From the actual operation, AI systems are not only more accurate but also more time-saving than manual review in some contract drafting and review. In addition to corporate legal contract management, law firms also use AI technology to develop "contract robots" to solve the problem of professional knowledge updates in lawyer document assistance systems/business template libraries, ensuring legal service capabilities.^[14]

1.3 Automation of legal document work

In addition to the automation of contract drafting and review, AI is also used to automate the processing of traditional manual legal work content. Currently, common legal AI programs can draft patents, detect errors and format defects, extract data from databases of mergers and acquisitions documents, create confidentiality agreement templates, and edit contracts initially created by lawyers. In recent years, a

^[13] ROSS Intelligence[EB/OL]. <https://rossintelligence.com>.2020-11-21.

^[14] Dentons Launches 'Contract Robot' — Leveraging Shared Community to Build an Adaptive Expert System Based on Neural Networks[EB/OL]. https://mp.weixin.qq.com/s?src=11×tamp=1628667505&ver=3245&signature=5p7Z97n11s*0iawIS32F*5La6b40tSIZBCN2AU7WzxkLVtOEDijMuHILdPVMk2cNgVg9*pb8mZbx-lyms8fJjvclsfwH2ctURcUMajK1uTlqMbeTY3-Gt*IcLQIhfTm4&new=1. 2020-11-21.

series of legal AI software have helped lawyers, especially corporate affairs lawyers, to generate and create various legal documents and forms.^{[15][16][17]}

AI software is also helping clients to automate the verification of lawyer billing hours. Intapp scientifically counts lawyer service billing hours by identifying the interaction of lawyers with specific cases, including emails and personnel participation.

^[18]LegalZoom provides automated, affordable "format" legal document drafting services for ordinary people; ^[19]Wevorce system automates divorce processing by inputting customer divorce litigation case information, outputting predictive judgments on how divorce will proceed; ^[20]DoNotPay provides automated rights protection application services for parking tickets for people in major cities around the world. ^[21]Rowan Patent automatically generates patent applications based on the information provided by the applicant, predicting the possible reasons for application rejection to mitigate these risks during the drafting process.

In addition, AI has been integrated into legal document translation services. Large translation company TransPerfect has invested a lot of money in AI-based machine translation, which can imitate natural language using artificial neural networks. ^[22]Machine translation is much faster and cheaper than human translation. Depending on the purpose of translation, AI-based translation is usually sufficient to replace human translators, although this technology still has room for further optimization in the application of the legal profession.

1.4 Legal big data analysis

Compared with legal professionals, the biggest advantage of AI is the big data analysis ability. With the help of big data analysis tools, lawyers can combine their intuition and experience from similar cases in the past to predict and analyze the development trend of cases. In the field of AI and law, the intelligent use of legal information is an important research topic. How to integrate and use publicly available legal-related information is undoubtedly an important direction in this field. Big data analysis methods allow us to see the possibility of instantly processing a large amount of unstructured information, and at the same time, big data analysis methods can make up for the shortcomings of human understanding of vast data,

^[15] Intellectual Property Management Software and Services from Anaqua[EB/OL]. <https://anaqua.com/>.2020-11-21.

^[16] Rowan Patents: Technology-Enabled Legal Services[EB/OL]. <https://rowanpatents.com/2020-11-21>.

^[17] No-code automation platform for legal and compliance professionals[EB/OL]. <https://www.neotalogic.com.2020-11-21>.

^[18] Intapp Connected Firm Management for Professional and Financial Services[EB/OL]. <https://www.intapp.com.2020-11-21>.

^[19] LegalZoom: Start a Business,Protect Your Family:LLC Wills Trademark Incorporate &More Online[EB/OL]. <https://www.legalzoom.com.2020-11-21>.

^[20] Premiere Online Divorce,Private Divorce,Private Judge-Wevorce[EB/OL]. <https://www.wevorce.com.2020-11-21>.

^[21] DoNotPay - The World's First Robot Lawyer[EB/OL]. <https://www.donotpay.com.2020-11-21>.

^[22] TransPerfect-Language and Technology Solutions for Global Business[EB/OL]. <https://www.transperfect.com/.2020-11-21>.

providing legal professionals with "data experience" or "special experience" based on data.^[23]

2. Benefits of ai application in the legal profession

The application of AI in the legal profession not only aids the work itself but also interacts positively with legal education. More importantly, it serves the national strategy for AI development. In recent years, AI, as a national strategic technology, has been elevated to an unprecedented height. Its rapid development exhibits new characteristics such as deep learning, cross-border integration, human-machine collaboration, collective intelligence, and autonomous control, which have profoundly changed human social life and the strategic development landscape of countries worldwide.

2.1 Promoting comprehensive and deep innovation in the legal profession

Technology drives the innovation of legal service concepts. The combination of the legal profession and AI can enhance the efficiency of lawyers' work and showcase unique creativity and service capabilities in legal services. How to drive business with scientific and technological means has become an issue that the legal profession must face. AI has unparalleled advantages over humans in dealing with certain legal issues, such as completing large-scale repetitive work in a relatively short time, improving work efficiency, and even analyzing cases, predicting trial outcomes, and selecting litigation strategies to increase the accuracy of problem-solving.

The use of AI can address and mitigate potential risks of human error. Compared to AI, human lawyers are relatively costly, inefficient, and slow in handling certain tasks, such as document review. A major advantage of AI is the repeatability of results. AI follows strict rules (i.e., algorithms), and a given AI system should provide the same result based on the same input. In a "human-machine" combined scenario, the lack of experience or physical fatigue of legal professionals will not affect the uninterrupted operation of the AI system.

AI also works much faster and more efficiently than similar manual operations. AI excels at performing tasks with clearly defined parameters. Although lawyers are well aware of using legal databases as research tools, advancements in AI have enhanced these capabilities beyond traditional manual legal retrieval. For example, machine learning can be used to analyze response documents determined based on initially input parameters to identify other keywords, time frames, administrators, or other parameters that were not previously determined, leading to the identification of additional response documents. This process, called predictive coding, is often used in the review and production of electronically stored documents, especially emails.

^[23] Zhou, Wei, "Analysis of the Mechanism of Big Data in Fact-Finding", *Journal of China University of Political Science and Law*, 6 (2015).

Under Moore's Law, "strong AI" can provide more decision support for legal work.
[24]

The legal profession uses information systems to cope with the globalization of legal services. The globalization of legal services includes two meanings: on the one hand, Chinese legal service institutions enter the international legal service market, such as arbitration institutions and law firms establishing branches abroad, especially in countries along the "Belt and Road" to carry out foreign-related legal services; on the other hand, it allows internationally renowned legal service institutions to establish offices in China to carry out international cooperation with Chinese legal professions. Globalization brings challenges and opportunities to the Chinese legal profession, especially lawyer services, and also exposes legal service institutions to more risks and challenges. Faced with the challenges of the domestic large cycle and international cooperation, the legal profession urgently needs to use emerging technologies, including the intelligent internet, to support globalized services.

The legal profession uses information systems to cope with the transformation to a knowledge and information economy. The world is transitioning to an information economy, big data economy, and knowledge economy. In the new economic era, legal professionals are not just outputting legal information but creating knowledge-based outcomes for legal issues. The knowledge economy era has given rise to a large number of knowledge- and information-intensive organizations.^[25] The new type of legal service industry is a typical knowledge-intensive industry. More knowledge tools are applied to the work of lawyers, who need to use information systems to process information and knowledge to make decisions and help clients achieve optimal legal solutions.

2.2 Promoting interdisciplinary innovation and development of law and ai

The application of AI in the legal profession is beneficial for carrying out interdisciplinary exploratory research. The research on AI and law has a history of 50 years.^[26] AI establishes intelligent computing systems by simulating human thinking, while law is a legal knowledge theoretical system with social relations as the research object. Due to the multiple knowledge structures and reserves involved in the legal profession, and the differences in legal norms in different legal systems, legal reasoning mechanisms can be divided into rule-based reasoning or case-based reasoning. Moreover, the interpretation and application of law and the determination of case facts cannot be mechanical deductive logic derivation. The formation of free evaluation of evidence, value judgment, and the influence of judicial policy make the legal profession more likely to carry out work in a way that triggers reflection through argumentation.

^[24] Kluttz, Daniel N., and Deirdre K. Mulligan, "Automated decision support technologies and the legal profession", *Berkeley Tech. LJ*, 34 (2019), 853.

^[25] Liu, Zhongying, et al., *Management Information Systems*, Higher Education Press, 2017, pp. 7-9.

^[26] The publication of the article "Some Questions About Artificial Intelligence and Legal Reasoning" by Bruce Buchanan and Thomas Headrick in November 1970 marked the beginning of research on artificial intelligence and law.

The deep integration and development of AI and law has deepened the understanding of AI application in the legal profession and subtly changed the teaching and research paradigms of law as a discipline, to the extent that some scholars have pointed out that the application of AI technology in the judicial field, driven by the integration of networking, digitalization, and intelligence, has formed a Chinese judicial reform picture from "access to justice" to "visual justice".^[27] At present, two similar but different disciplinary definitions have emerged in the Chinese academic community: "legal artificial intelligence" and "artificial intelligence law". The former reflects the focus on the specific application of AI in law, which is essentially an AI issue, while the latter focuses on the new legal issues brought about by the use of AI technology, which is essentially still a legal issue.

Artificial intelligence law, based on knowledge systems, rational speculation, and legal logic, regards AI as the object of legal regulation or the way of legal regulation, and is a theoretical approach that considers and studies from an external perspective, with law as the foundation.^[28] Legal artificial intelligence emphasizes the machine substitution or intelligent transformation of legal work, and is a theoretical approach that considers and studies from an internal perspective, with legal calculation as the foundation. Legal artificial intelligence uses information systems, modeling calculations, and mathematical logic to establish reasoning systems based on legal rules and judicial cases, and further transforms legal activities into adaptive intelligent systems of logical derivation calculations through AI technologies such as data mining, deep learning, and knowledge mapping.

With the rise of interdisciplinary research between AI and law, it has driven the research of various legal issues related to information technology. Traditional civil law, administrative law, criminal law, and other departmental laws are actively responding to the opportunities and challenges brought by the development of information technology. At the same time, new disciplinary concepts such as computer law, computational law, quantitative law, internet law, information technology law, data law, legal big data, robotics law, future law, legal technology, and automated negotiation technology have emerged.^[29] The state encourages colleges and universities to broaden the content of AI professional education on the original basis, forming a new model of "AI + X" composite professional training, such as the cross-integration of AI and law professional education.^[30] Many domestic

^[27] Ma, Changshan, "The Reshaping Effect of Judicial Artificial Intelligence and Its Limits", *Chinese Journal of Law*, 4 (2020).

^[28] Ma, Changshan, "AI Law, Legal AI, and the 'Third Way'", *Zhejiang Social Sciences*, 12 (2019).

^[29] Shen, Weixing & Liu, Yun, "New Paradigm for Legal Research: The Connotation, Category and Methodology of Computational Law", *Chinese Journal of Law*, 5 (2020).

^[30] The State Council issued the New Generation Artificial Intelligence Development Plan (Guo Fa [2017] No. 35), outlining a national strategy for AI development. This effort was further supported by the National Informatization Development Strategy Outline and the *13th Five-Year Plan for National Informatization*, led by agencies including the Ministry of Education and the National Development and Reform Commission. In 2020, the Ministry of Finance released the Several Opinions on Promoting Discipline Integration and Accelerating the Cultivation of Postgraduates in Artificial Intelligence at "Double First-Class" Universities (Jiao Yan [2020] No. 4), emphasizing interdisciplinary graduate education in AI.

and foreign law schools have taken the integration with information technology as an important direction for discipline development,^[31] and the interdisciplinary research results in the field of AI and law have been continuously published, gradually forming a parallel development path for legal artificial intelligence and artificial intelligence law.

2.3 Serving the national strategy for ai development

As a strategic technology leading the development of the national economy, AI is a major strategic measure for China to enhance national competitiveness and safeguard national security. The application of AI in the legal profession can promote interdisciplinary research between AI and law and serve the national strategy in three aspects. First, it enriches and expands the basic theories of AI. The public disclosure of judicial judgment documents online, the construction of smart courts, and complex and multi-level legal service practices provide test data and test application scenarios in the legal field for big data intelligence theory, hybrid enhanced intelligence theory, collective intelligence theory, advanced machine learning theory, and brain-like intelligence computing theory, providing a field for simulating complex activities of human society for the key breakthroughs in advanced machine learning theory, to achieve AI with high interpretability and strong generalization ability.

Second, it provides application scenarios in the field of legal practice for the development of key common technologies of AI. The research and development and deployment of a new generation of AI key common technologies aim to take algorithms as the core, based on data and hardware, focusing on improving perception and recognition, knowledge calculation, cognitive reasoning, motion execution, and human-computer interaction capabilities, forming an open compatible and stable mature technical system. The development of AI key common technologies is conducive to improving the level of AI technology application in the legal profession and reducing the cost of deep AI application in the legal field. The application of AI in the legal profession in diversified dispute resolution, blockchain smart contracts, smart courts, and other legal fields, in turn, enriches the application practice of key common technologies in the "good governance" of social governance.

Third, it uses legal big data to enhance national governance capabilities. Smart courts are an important starting point for the comprehensive reform of the judicial system, and the information resource foundation of smart courts is legal big data. Taking the big data of judgment documents as an example, effective judgments play a role in resolving disputes in individual cases, and also have a guiding and normative role in subsequent social practice and legal activities. Big data analysis provides governance wisdom for the application of evidence, social hot issues, and risk prevention in

^[31] In September 2017, China University of Political Science and Law established the School of Law and Information Management, while Renmin University Law School founded the Institute of Future Rule of Law. That December, Peking University launched its Artificial Intelligence and Law Laboratory and Research Center, and Southwest University of Political Science and Law set up the School of Artificial Intelligence and Law. In April 2018, Tsinghua University Law School further enriched the academic landscape by introducing a new Master of Law (LL.M.) program in Law and Algorithms.

dispute-prone areas, providing legal big data mining and machine learning mechanisms for the national governance decision support system.

3. The impact and limits of AI on the legal profession

The development of legal AI discipline has driven the rapid innovation of legal technology. More and more legal service institutions use AI technology to improve the efficiency and quality of legal services, making it more convenient for the public to access legal services. AI technology represented by electronic discovery, contract management and litigation management, automation of legal work, and legal big data analysis has replaced repetitive legal work. Technological progress has brought changes in work processes and methods, creating opportunities and challenges for the career development of young legal professionals. Although we cannot clearly depict the legal profession in the AI era at present, and our understanding of the impact of AI technology on the legal profession is still in a continuous cognitive process, the trend of technology integrating into legal work is undeniable. As mentioned in Susskind's book "Tomorrow's Lawyers", new jobs for lawyers include: legal knowledge engineers, legal technology personnel, multi-faceted legal talents, legal process analysts, legal professional managers, online dispute resolvers, legal management consultants, and legal risk managers. ^[32]Therefore, due to the replacement of entry-level legal positions by AI technology, higher requirements are put forward for the cultivation of young legal professionals in the future. The transformation of legal reasoning thinking and the use of AI technology to connect legal work processes are challenges for the legal profession.

3.1 The transformation of legal reasoning thinking paradigm

In many aspects, AI research is connected with argumentation research. The argumentation approach of AI integrates insights from different perspectives. From the perspective of theoretical systems, the focus is on the theoretical and formal models of argumentation. Since the 1990s, the main areas of AI that have been significant for argumentation theory include defeasible reasoning, multi-agent systems, and legal argumentation models.^[33]

The common logical form of argumentation and reasoning used by legal professionals is legal syllogism. However, in the field of legal AI, research on argumentative dialogue is more extensive, establishing computer programs to model and support argumentative tasks, such as litigation, arbitration, and negotiation processes. Hage believes that the popularity of dialogue argumentation models in the field of legal AI is due to two reasons: first, legal reasoning is defeasible, and dialogue models are a good tool for studying defeasibility; second, dialogue models are valuable when

^[32] Susskind, Richard, et al., *Tomorrow's Lawyers: An Introduction to Your Future*, translated by Mai Huifen, Business Weekly Publications, 2014, pp. 181-196.

^[33] van Eemeren, Frans, et al., *Handbook of Argumentation Theory*, translated by Xiong Minghui, et al., China Social Sciences Press, 2019, pp. 735-740.

exploring the process of establishing law in specific cases.^[34] Faced with the uncertainty of legal application and fact determination, a better modeling understanding solution seems to be to view legal procedures as a kind of argumentative dialogue. Scholars in the English-speaking world have provided theoretical framework models from the perspective of argumentative dialogue, modeling multi-agent legal AI systems through defeasible reasoning logic,^{[35][36][37][38]} and presenting the unique thinking and reasoning methods of legal professionals in a more refined and visualized manner.

Under the technical trend of AI modeling legal processes, the legal profession should pay full attention to the transformation of the argumentation thinking paradigm. The argumentative dialogue AI framework can evaluate legal arguments, define the justification of arguments, and correspond to the acceptability and logical validity of arguments. In the legal argumentative dialogue AI framework, the proponent and respondent jointly enter into a dialogue, resulting in a shared set of premises, from which conclusions are derived as legitimate. In addition, in mediation dialogues of non-litigation procedures, information systems or AI frameworks are more of a system that supports dialogue rather than evaluation, not guaranteeing the correctness of the outcome, serving as an imperfect legal procedure.

3.2 The reengineering of legal information systems on work processes

The world is undergoing a major change unseen in a century, with information technology represented by the internet, 5G communication technology, cloud computing, big data, and AI accelerating the transformation of society, economy, management, and other aspects. Legal professionals use computers and mobile terminals as the main tools, and carry out team collaboration, online legal services, and online judicial procedures through the internet and mobile communication networks, efficiently carrying out negotiations, group communication, and legal procedures in their work. The information age has changed the way legal services work, and the use of information systems by the legal profession is an inevitable trend of progress in the commercial society. AI influences legal work processes through information systems as a carrier.

The legal profession uses information systems to achieve transformation. The information age has created digital organizations, and business activities such as enterprises and suppliers, customers on the supply chain are completed with the help of information technology. Legal services have increasingly become a part of the industrial chain in the digital economy era. The legal profession, represented by the lawyer industry, has also begun to try transformation and breakthrough. "Internet

^[34] Hage, Jaap, "Dialectical models in artificial intelligence and law", *Artificial Intelligence and Law* , 8.2 (2000), 137-172.

^[35] Bench-Capon, Trevor J. M., T. Geldard, and Paul H. Leng, "A method for the computational modelling of dialectical argument with dialogue games", *Artificial Intelligence and Law* 8.2 (2000), 233-254.

^[36] Ashley, K. D., Modeling legal argument. Reasoning with cases and hypotheticals. Cambridge, MA: The MIT Press. 1990, p20

^[37] Gordon, Thomas F, "The pleadings game", *Artificial Intelligence and Law* , 2.4 (1993), 239-292

^[38] Prakken, Henry, and Giovanni Sartor, "Modelling reasoning with precedents in a formal dialogue game", *Judicial applications of artificial intelligence*. Springer, Dordrecht, 1998. 127-183.

Plus" has achieved the sharing and co-governance of information among various subjects in the legal service industry chain through connection, and with the help of supply chain management ideas, mature and advanced management information system solutions in business fields such as Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Customer Relationship Management (CRM), Business Intelligence (BI), Knowledge Management (KM), and Decision Support Systems (DSS) are applied to legal professional activities. Traditional legal service institutions will achieve organizational restructuring, management evolution, and internet transformation, thereby meeting the broader legal service needs of the intelligent society. Legal information systems cover AI and legal professionals, forming a human-machine system under the "social-technical" view, proposing digital solutions for the development pain points of law firms, using information systems to carry out digital transformation in the management, business, and collaboration of the lawyer industry, serving and connecting law firms, solving the pain points of law firm management, optimizing digital legal service products through the reengineering of legal service processes, helping lawyers to improve work efficiency and law firms to increase revenue, ultimately achieving management and business capabilities that match the intelligent internet era.

AI is a powerful tool for the legal profession, helping legal professionals enhance their cognitive abilities and achieve process reengineering (BPR) for legal service processes, which is the external value of the legal profession. First, legal services shift from information resource management to knowledge management. The concept of "knowledge management" originated from Peter Drucker's writings, in which he described knowledge workers in his 1988 article "The Coming of the New Organization," proposing that using the knowledge and capabilities of an organization to create new knowledge provides opportunities for gaining a competitive advantage. As a knowledge worker, a legal professional completes a knowledge work process, using his brain as well as resources and tools outside his brain, forming a knowledge output: "brain knowledge + external resources + thinking/collaboration = documents."^[39] The knowledge of legal service organizations is applied in different forms, formally or informally, including structured knowledge, semi-structured knowledge, and unstructured knowledge. The goal of information resource management is to establish knowledge systems and knowledge work systems oriented towards operations and management for organizations, while knowledge management focuses on knowledge discovery and the use of AI in application systems. Taking Case-Based Reasoning (CBR) as an example, it originated from the description of dynamic storage by Yale University's Roger Schank in 1982. The research method of CBR is inspired by human cognitive psychological activities, optimizing the limited sources of knowledge acquisition in traditional expert systems, and has the advantages of combining quantitative and qualitative approaches, having a dynamic knowledge base,

^[39] Larenz, Karl, *Methodenlehre der Rechtswissenschaft*, translated by Huang Jiazhen, The Commercial Press, 2020, p. 369.

and maintaining incremental learning. Its application in the legal field is mainly divided into explanatory and problem-solving types.^[40]

Second, data-driven legal services. Taking the legal practice of law firms as an example, law firms use data analysis to provide "smarter" legal services. First, through data-driven legal service marketing, CRM systems combined with business data analysis to track potential customers, help determine the most effective legal service marketing in promoting new business, measure the return on investment of marketing expenses, and determine which practices and customers are more valuable to law firms. Second, using data to provide higher-quality legal services, AI may open up some data sources that were previously inaccessible. Law firms that have been operating for many years may have unstructured and semi-structured data. If this data can be converted, standardized, and metadata collected, this information will be very useful. Third, data-driven law firm management, based on the goal of data-based management information systems to enhance organizational competitive advantage, through the use of information systems to help organizations improve efficiency, optimize business processes, manage legal documents, and manage human resources.

Third, the change of business intelligence technology (BI) on legal professional decision-making. The successful application of BI in the business field lies in analyzing and interacting with a large amount of data, transforming data into novel and potentially useful knowledge, providing valuable insights for decision-makers, and enabling them to make better business decisions.^[41] By establishing a data warehouse as the basic environment for BI applications, providing lawyers or law firm managers with a collection of data oriented towards themes, integrated, changing over time, and relatively stable, and through online analytical processing, flexibly and interactively providing statistics, trend analysis, and forecast reports, as well as AI data mining technology to obtain effective, novel, and potentially useful knowledge patterns from massive data through specific algorithms.

Future lawyers need to develop three key competency areas: technical literacy (understanding how AI systems work), critical evaluation (assessing the appropriateness and limitations of AI tools), and ethical reasoning (addressing the moral implications of AI in legal contexts). These competencies should be developed through both dedicated courses and integration into traditional doctrinal classes. Law schools should implement a tiered approach to technology education. Foundational courses should introduce all students to basic concepts of legal technology and AI. Advanced courses and concentrations should allow interested students to develop

^[40] Interpretive Case-Based Reasoning involves comparing a new problem with already classified cases in a case database to form a judgment or classification for the new problem. In common law systems, this approach is widely used for interpreting legal provisions and applying the law.

Problem-Solving Case-Based Reasoning, on the other hand, aims to adapt previous solutions to new problems by modifying them to generate a corresponding solution for the new situation.

^[41] Liu, Zhongying, et al., *Management Information Systems*, Higher Education Press, 2017, pp. 205-209.

deeper expertise. Most importantly, technology concepts should be integrated into core courses to show how AI affects all areas of legal practice.

3.3 The limits of AI's impact on the legal profession

The improvement of AI on legal work efficiency makes legal professionals both fascinated and fearful of the rapid development of technology. The fascination comes from the convenience and richness that technology brings to human life, while the fear comes from the worry that technology will get out of human control and even control humans in turn. Can AI completely replace the legal profession?

First, if we view the legal profession as a tool for achieving meaning from an external value perspective, AI must overcome three difficulties to fundamentally challenge the legal profession in the legal field. First, AI currently only simulates human intelligence in a few aspects and needs to carry out reasoning in rich data, deterministic information, complete information, static events, and single tasks in limited fields. None of these conditions can be absent, while the legal profession often needs to make judgments under conditions of insufficient information and limited time. Second, the problem of normative understanding. Legal practice involves the interpretation of legal norms, and the application of law is often a matter of interpreting legal concepts. For example, "good faith" usually points to two views: fulfilling the trust that one has caused and been accepted by the other party; and considering and accommodating the interests of both parties in their relationship.^[42] Obviously, it is difficult to construct and depict these two interpretations of legal principles using the syntax and semantics of AI logic modeling. Third, the problem of moral value reduction. Legal practice involves value judgments, and value and normative issues are difficult to quantify or formalize into data and algorithms,^[43] because there are some binding value evaluation standards in the legal order, constitution, and accepted legal principles. Before "applying" them, legal professionals need to further understand and apply them, such as specifying these standards, and the "justification" of the decision-making process in legal practice is closely related to these standards.

Second, from the perspective of the internal value of the legal profession, moral life is an important part of the meaning of human life. If legal practice, as a moral practice, is replaced by AI, then human moral practice will be reduced, involving almost all important ethical values such as life, freedom, equality, justice, and dignity, which often involve the moral bottom line of human social practice. Considering the special significance of legal practice in the field of morality, the application of AI technology in legal practice should not be promoted with the idea of replacement.

Third, from the internal perspective of AI, if AI is regarded as law, such a system is a hybrid critical discussion system, connecting knowledge representation and reasoning

^[42] Larenz, Karl, *Methodenlehre der Rechtswissenschaft* [Methodology of Legal Science], translated by Huang Jiazhen, Beijing: The Commercial Press, 2020, p. 369.

^[43] Huang, Weiwen, "From Unicorns to AI: Should Artificial Intelligence Replace the Legal Profession?", *Law and Social Development*, 5 (2020).

through machine learning. ^[44]The interdisciplinary research of AI and law is extremely difficult. The difficulty does not lie in the realization of AI technology but in the openness of the legal system. This openness is reflected in the openness of legal terms. Legal reasoning is guided by rules, not based on rule reasoning. Whether it is the interpretation and application of law or the evidence reasoning for the determination of case facts, although it can be depicted from a technical perspective using default logic and non-monotonic logic, it still cannot be separated from the wisdom of legal professionals in the application of rules. In addition, it is also reflected in the openness of answers to legal questions. Legal questions can have more than one answer, but a reasonable and timely answer must be given, and this currently reasonable answer may change over time.

AI will pose challenges to entry-level legal positions to a certain extent, while also providing more legal technology positions. These positions may not be the career plans that law students had in mind when they entered law school. Faced with the changes AI technology brings to the legal profession, scholars have pointed out that legal practice is a delicate and complex job, especially since law involves reason, emotion, and value, and is closely related to the meaning of life. The replacement or support of AI for legal work will not touch the core of legal practice, nor will it affect the significance of the legal profession for moral life. AI and the legal profession will not and should not form a pattern of opposition. Instead, they should return to the tool value of information systems to support legal professional decision-making from a "social-technical" perspective, helping legal professionals to take the legal profession more seriously, and forming a digital humanistic care for the integrated development of AI and the legal profession.

Consequently, teaching methods must evolve to match changes in content. Law schools should incorporate active learning approaches that involve hands-on work with technology tools, problem-based learning that addresses real-world technology challenges, and interdisciplinary collaboration that brings together law, computer science, and other relevant fields.

4. Rational response of legal professionals in the age of AI

The mission of computers is almost application, and countless applications in various fields of human society have been carried out since their birth. The interdisciplinary studies named after computers and AI have triggered academic discussions and research that have attracted much attention. ^[45]The deep integration and development of networking, digitalization, and intelligence is an irreversible fundamental trend of today's social change. The research of law and AI has been deeply affected by this

^[44] Verheij, Bart, "Artificial intelligence as law", *Artif. Intell. Law*, 28.2 (2020), 181-206.

^[45] Feng, Huiling, "Digital Humanities: Achieving Integration Through Cross-Disciplinary Collaboration", *Chinese Social Sciences Today*, 8 (2017).

trend. Due to the morality of legal practice, the cross-interaction between humanities and technology is increasingly required, and a "third path" of integration and development of law and AI has emerged. ^[46] The integration and development of law and AI aims to leverage the strengths and avoid the weaknesses of both, achieving two-way integration. Therefore, it is the need of the times for the legal profession to strengthen the understanding of AI, and it also promotes the transformation of legal profession ethics in the age of AI. It is particularly important for legal professionals to be good at using the advantages of AI while ensuring that machines and legal professionals cooperate in their respective areas of expertise. The legal profession can seek adjustments and changes from the following aspects.

First, the legal profession will become proficient in technology. As AI tools become more advanced and integrated with various application systems, they give rise to new legal service demands and job positions, while the traditional legal career development path becomes narrower. The legal profession should adapt to the growth of emerging legal culture, be familiar with the principles of technology operation, develop more flexible methods to use new tools, on the one hand, to understand the business of clients, and on the other hand, to understand the advantages and disadvantages of information system tools, and to discuss these technical methods with technical professionals. By using appropriate AI tools, the legal profession will gain more knowledge to enable AI products to serve the legal needs of clients. The legal profession will not be replaced in this process. Taking lawyers as an example, through the continuous refinement and integration of the "human-machine system," lawyers who master legal service technology will be able to apply the legal wisdom that was traditionally only possessed by more experienced lawyers.

Second, the legal profession pays more attention to the strategy of legal affairs. Traditional legal profession training focuses more on tactical operations. Starting from law school, professors ask questions to law students, who then decide what legal application applies, apply the law to given facts, and make reasonable and informed suggestions. AI replacement of legal work is more at the tactical level, not strategic work. As tactical work is gradually automated, understanding why clients need certain things, being able to see various issues that will arise, and developing comprehensive strategies to connect client goals with machine tasks will increasingly become the standard for measuring qualified and valuable legal work. Therefore, the strategic guidance means to be familiar with the law as a whole rather than separate parts, returning from the romantic ideal of legal professionalism to the realistic market demand for legal services.

Third, the legal profession becomes more commercially and managerially talented. The wave of social informatization integrates AI with law and will give rise to a new legal culture, making highly specialized legal professionals turn to a broader vision

^[46] Ma, Changshan, "AI Law, Legal AI, and the 'Third Way'", *Zhejiang Social Sciences*, 12 (2019).

and knowledge structure. Clients hope that lawyers can better understand and be aware of their business needs in order to better apply legal AI to their industrial chains. The lawyer profession needs to expand their horizons, including business and management talents that traditionally go beyond the scope of legal work and business decision-making. AI may perform all legal tasks, but lawyers need to understand their weaknesses and the intentions and goals of their clients, and be able to make suggestions and modifications to AI legal products. Connecting human thought with automated processes will be something we value and cannot be replaced. Consolidating the significance of the legal profession in moral life in a digital humanistic way will truly achieve the integration of the two.

Fourth, legal education should face up to the arrival of legal AI as soon as possible.^[47] What impact will AI technology have on future legal professionals? What profound changes will it bring to our legal education? On the one hand, with the progress of AI technology, new technical tools are integrated throughout legal practice, creating a level playing field for experienced lawyers and junior lawyers who can better utilize these new tools. On the other hand, the number of junior legal positions available in the future may decrease. In order to cope with the challenges of AI to the legal profession and the new development opportunities it brings, law school graduates should become experts, senior lawyers, or interdisciplinary talents who master legal AI technology at the time of graduation. Therefore, legal education must strive to bridge the legal technology gap, adjust training programs to become the starting point for innovation and change, actively provide necessary conditions for law students to use legal AI technology, and better provide guarantees for the success of future legal professions. (1) Law students need to understand AI technology. Legal education needs to provide courses on legal services and judicial management techniques in the form of legal teaching practice, allowing students to understand what algorithms are, what chatbots are, what robot advisors are, and the basic components of AI; legal education can provide advanced courses for legal professionals to deeply understand the differences between general AI and specific field AI, how AI machines think, act, and behave, how cognitive computing interacts with humans, and how AI continuously learns and improves with the introduction of expanded or new datasets. (2) Law students need to use AI to innovate and break away from inherent thinking patterns. Traditional legal education is not good at guiding students to innovate and start businesses. In order for law students to adapt to the market competition of the legal service industry and achieve success, they need to understand these technologies and create innovative content for future legal service technology development. Future legal professionals should know the best ways to make full use of AI technology to make legal processes more convenient and acceptable to clients. (3) Law students must learn to question data and algorithms. Just as teaching students to question witness testimony and motives, legal education should teach students to question the data generated by AI programs, avoiding over-reliance on technology itself, as there

^[47] Frostestad Kuehl, Heidi, "Technologically Competent: Ethical Practice for 21st Century Lawyering", *Case W. Res. JL Tech. & Internet*, 10 (2019), 1.

may be flaws in algorithm design. (4) Law students need to cultivate advanced lawyer skills, leadership, management, and interpersonal skills. Due to the significant advantages of AI technology in improving work efficiency, law schools generally require students to utilize and embrace new technology. However, the reality is that the younger generation may find interpersonal relationships more challenging because they have become more accustomed to spending more time in the digital virtual world rather than interacting with people. Law schools cultivate the empathy and communication skills necessary for the moral subjectivity of future legal professionals through practical courses, offsetting the impact of "relationship distance" between people. These practical courses include courses on legal studies, legal professional ethics, and technology in legal services and judicial management, to strengthen the cultivation of students' interpersonal skills.^[48]

5. Conclusion

AI is shaping a new pattern in human history, and all of humanity, including the legal profession, needs to seriously face the great changes unseen in a century. In 2017, the first robot lawyer appeared, widely used in the UK and the US, handling traffic tickets at a very low cost. Its official website slogan is: "Fight corporations, fight bureaucracy, sue anyone with just a button press."

The integration of AI into legal practice represents both a challenge and an opportunity for legal education. While AI will undoubtedly change how legal work is performed, it does not eliminate the need for well-trained lawyers who can provide strategic advice, exercise ethical judgment, and serve client needs. Rather, it requires lawyers who can effectively combine legal expertise with technological understanding.

Legal education must respond to this changing landscape by developing comprehensive approaches to technology education that prepare students for the future of legal practice. This involves not only teaching students about specific technologies but also helping them develop the critical perspectives needed to understand technology's role in legal systems and society. By embracing these changes, law schools can ensure that they continue to produce graduates who are prepared to serve society effectively and uphold the rule of law in an increasingly technological world.

The time for incremental change has passed. Legal education needs fundamental reform to address the AI revolution. By developing thoughtful, integrated approaches to technology education, law schools can prepare their students to harness the power

^[48] Reid, Melanie, "A Call to Arms: Why and How Lawyers and Law Schools Should Embrace Artificial Intelligence", *U. Tol. L. Rev.*, 50 (2018), 477.

of AI while preserving the human judgment and ethical commitment that remain essential to the legal profession.