

The Impact and Implications of AI on Legal Professionals

Jong-Ryeol Park*, Sang-Ouk Noe**

*Professor, Dept. of Police & Law, KwangJu Women's University, Gwangju, Korea

**Professor, Dept. of Police & Law, Joongbu University, Chngcheongnamdo, Korea

[Abstract]

Due to the Fourth Industrial Revolution, the influence applied to all areas of our society is continuing to develop at a rapid pace as the days go by. Recently, in the field of legal services, artificial intelligence technology has been introduced mainly in the United States, an advanced country, leading innovation in the legal market. As such, artificial intelligence is expected to rapidly grow as a means of replacing people, leaving the auxiliary role of people at a rapid pace, and the purpose of this study is to examine necessary measures for Korean professional legal professionals to survive in this legal market. After analyzing it based on prior research by domestic researchers and various data in Korea, the law was revised to prohibit non-lawyers from handling legal affairs, active state intervention in public information cases, and ways for the state and the private sector to check each other. Therefore, the above research is expected to throw a lot of discussion points in terms of legal services using artificial intelligence in the future.

▶ **Key words:** 4th Industrial Revolution, AI, Attorney-at-law, Attorney Act, Department of Justice

[요 약]

4차 산업 혁명으로 인해 우리 사회 전 영역에 걸쳐 적용되는 영향력은 날이 갈수록 빠른 속도로 발전을 거듭하고 있다. 최근 법률서비스 분야에서도 선진국 미국을 중심으로 인공지능 기술을 도입하여 법률시장의 혁신을 주도하고 있다. 이처럼 인공지능은 빠른 속도로 사람들의 보조역할을 떠나 사람들을 대체하는 수단으로 급성장할 것이 전망되는 가운데 우리나라 전문 법조인들이 이런 법률시장에서 생존하기 위한 필요한 방안을 검토함이 본 연구의 목적이다. 연구를 위해 국내 연구자들의 선행연구와 우리나라 각종 자료를 기반으로 분석한 후, 비변호사의 법률사무 취급을 전면 금지하는 변호사법 개정, 공공정보에 해당하는 판례에 대해 국가의 적극적인 개입, 법률정보 서비스의 독점 문제 해결을 위한 국가와 민간이 서로 견제할 수 있는 방안을 도출하여 제시했다. 따라서 상기 연구는 향후 인공지능을 활용한 법률서비스 측면에서 많은 논의점을 던져 줄 것으로 기대된다.

▶ **주제어:** 4차 산업혁명, 인공지능, 법조인, 변호사법, 법무부

-
- First Author: Jong-Ryeol Park, Corresponding Author: Sang-Ouk Noe
 - *Jong-Ryeol Park (park3822@kwu.ac.kr), Dept. of Police & Law, KwangJu Women's University
 - **Sang-Ouk Noe (nosang2424@daum.net), Dept. of Police & Law, Joongbu University
 - Received: 2023. 03. 02, Revised: 2023. 04. 17, Accepted: 2023. 04. 17.

I. Introduction

People are worried about losing jobs when artificial intelligence is developed. Legal circles can never be free from this concern. Traditionally, legal officers only had to know the law well. If one remembers many precedents and is familiar with the litigation process, one could be a successful legal officer even though one cannot handle numbers, IT, and business well. However, there is a big change in this principle. The saturation of the legal market is making legal professions into business, and artificial intelligence is expected to bring a big change in legal professions. Most legal officers know about artificial intelligence such as AlphaGo, but there will be a big difference in perception of the ripple effect on the legal field. This study will examine what influence would be brought by artificial intelligence on the legal professions in the future.

The above study examines the changes in the situation surrounding the legal market in the introduction of Chapter 1, and the concept and development status of artificial intelligence in Chapter 2. In Chapter 3, the effects of artificial intelligence on legal professionals include opinions on replacing legal professionals by artificial intelligence, technical status, and Korean cases. Chapter 4 examines the jobs of the legal profession that can be replaced by artificial intelligence, and its ethical and legal problems, and instead of rejecting various innovations and changes caused by artificial intelligence based on previous studies, the goal of this study is to find alternatives for legal professionals to survive.

II. Concept and Development Status of Artificial Intelligence

Artificial intelligence is a technology that implements human intellectual abilities through information processing technology. Conceptually, it

is divided into strong artificial intelligence that allows free thinking like humans and weak artificial intelligence that does not have self-consciousness. Full-fledged artificial intelligence technology began to develop in the 21st century. Pharmaceutical artificial intelligence such as AlphaGo, a Go program that has the ability to learn on its own through deep learning, and Watson used in medical diagnosis was developed. In December 2022, ChatGPT, an artificial intelligence that enables continuous conversation and creation of papers or literary works, was opened to the public. In particular, artificial intelligence is evolving at an unprecedented rate. Because of this speed, many experts predict that artificial intelligence will dominate people. Representatively, Tesla Inc CEO Elon Musk highlighted the dangers by comparing future AI to nuclear weapons. Stephen Hawking, a British physicist who died in March 2018, also expressed fear that artificial intelligence could replace humans. Then, where does the fact that artificial intelligence can threaten humanity come from? It can be referred to as human-level artificial intelligence, that is, general artificial intelligence.[1] General-purpose artificial intelligence can be conceived as a system that basically implements human-level intelligence. Universal artificial intelligence learns, deduces, recognizes problems, and takes active actions to solve them like humans. However, human-level intelligence can be viewed very differently by experts. Therefore, the specific definition of general-purpose artificial intelligence differs in each field, and researchers are establishing the definition by developing general-purpose artificial intelligence.[2] The important point here is to view general-purpose artificial intelligence as a superintelligence that can surpass the human level. If general-purpose artificial intelligence is born, it is the view that it reaches a much higher level of intelligence than humans through self-improvement. This point of view is also in line with the singularity expressed by Ray Kurzweil, a leading futurist, in his book.

As artificial intelligence develops, new legal services using artificial intelligence are being developed. Therefore, in this study, we would like to examine various contents related to legal information services using artificial intelligence and review the areas that legal professionals should consider.

III. The Influence of Artificial Intelligence on Legal Officers

1. Opinion on the replacement of legal professions by artificial intelligence

It may be difficult to imagine if it would be possible for artificial intelligence to replace legal professions such as judges. However, a phenomenon in which artificial intelligence replaces humans, even in the mental labor area and the professional area has already appeared. For example, Hong Kong's financial company 'Deep Knowledge Venture Capital' decided to designate 'Vital', which is an artificial intelligence specializing in analysis for a life science venture company as a board member of their investment board and give it the same vote as human.[3]

Due to the nature of legal officers, there are lots of unstructured elements and relative value judgment is often necessary to compare legal interests, it will play a role in supplementing and strengthening the ability of legal officers instead of replacing them. However, even though the prediction of specific times may be different, it is hard to directly deny that artificial intelligence can be in charge of many parts of the legal professions if strong artificial intelligence is commercialized in the future. If so, it is necessary to think about which tasks can be helped and performed by artificial intelligence.

2. Legal tasks that artificial intelligence can be used

First, there is the collection and organization of data related to legal problems. Second, artificial

intelligence will be able to provide answers directly based on these data. And if it develops further from this, it can proceed to the stage of writing legal documents based on these answers.

In addition, it will be able to analyze existing data to predict the direction of the dispute or the conclusion of the lawsuit, that is, the outcome of the lawsuit, and to provide more practical and specific solutions than the solutions provided by existing lawyers based on this.

These tasks that artificial intelligence can handle will function in the direction of helping legal professionals such as judges, prosecutors, and lawyers. At the same time, if a more kind explanation is possible, these functions could be used for the general public. In other words, the general public, not legal experts, will be able to find solutions by themselves, take an action accordingly, or carry out a 'lawsuit alone' using this artificial intelligence.

Artificial intelligence utilization steps as stated above can be discriminated into three steps: step one, artificial intelligence helps collect and organize legal data. Step two, artificial intelligence writes legal documents on its own. Step three, artificial intelligence performs legal tasks independently on behalf of legal officers. Currently, it is normally used for step one, and some companies use artificial intelligence for step two. For example, the legal start-up company 'Help Me' is providing automated service to fill out payment order applications.[4]

'LegalTech' refers to an industry or venture company that is newly born under the combination of law and technology, which is a legal version of FinTech which means the use of information and communication technology in the financial area. LegalTech handles various fields such as online legal counseling software, filling out legal forms using artificial intelligence, online legal market, etc.[5] The biggest feature of artificial intelligence is that it performs tasks in a specific field through a computer, not everything a person can do.

Innovation in the field of legal services led by artificial intelligence should also be based on this perspective. The idea that an AI legal service program would perform all the work of any particular law firm or everything any lawyer could do is foolish and unfeasible. ROSS in the United States, recently mistaken for an artificial intelligence lawyer, showed far superior performance to human experts in legal search in a limited field of bankruptcy. There are also attempts to break down various limitations and identify the barriers to Legal Tech's entry into the legal service market. Lawyers and IT engineers continue to build websites and introduce lawyers. Someday, the market for lawyer referral services will expand in legal teturi and many developments will be made in terms of legal technology protection.

3. Cases in Korea

3.3.1 LAIA (Legal A.I. for an Attorney) of the Bubrlebada (Person Information Technology, Co. Ltd, Legal Intelligence Information Research)

LAIA is 'a brand name of Legal Robo-Advisor' to embody artificial intelligence technology in the legal area based on the mapping set which is accumulated and expanded by making a network among general/professional terms through neural network learning of artificial intelligence. On their website, they present the following as applicable fields.

3.3.1.1 A legal professional Robo-advisor

To embody the smart case search technology, which has been patented by Person Information Technology, when a morpheme analyzer that is under development through distributed research, artificial neural network learner, and a terminology filtering module is completed, by collecting databases through making intensive network and 'reactive case search system' and 'legal Robo-advisor (LAIA Version 1.0) Beta will be released. After that, it is said that every public can search for primary solutions for their categorized daily legal problems without relying on initial

counseling with lawyers.

3.3.1.2 Sentence simulator

When the accumulated amount of making networks of Mapping Set, which is a core raw material of 'LAIA', reaches a certain level, it is said that by implementing predictable sentence simulator by cases and presenting the standard of objective sentence under reasonable conditions, so that anyone can decide whether they will appeal or not by themselves.

3.3.2 i-Lis of the Intellicon

Intellicon Meta Research Institute, consisting of lawyers and AI experts, succeeded in developing i-Lis, an intelligent legal information system after 5 years of study and has commercialized it since 2020. They say that the general public can get a similar result to consult with a lawyer by using i-LIS, and predict that if legal ethical problems are solved, it will be an era in which AI lawyers will be used in court to proceed with the lawsuit and the robot presiding judge will adjudicate in 5-10 years.[6]

3.3.3 I-Law system of the Ministry of Justice

It is an artificial intelligence search system, which was jointly developed with the Ministry of Justice and the Korea Institute of Science and Technology consortium, investing 2.8 billion won over four years. Unlike the existing search engine that provided information about the searched word only, cutting-edge artificial intelligence was also used for the system to analyze and provide the related information to the search words by itself.[7]

3.3.4 Hipert system of the LawnB

It can express a more complicated deduction process and provide personalized counseling results in that it provides counseling results after a question-and-answer process with the system.[8]

Interval Conclusion

In the United States, sales of software and services that computers replace document reviews,

which are mainly practiced by law firm junior lawyers in the field of discovery (disclosure of evidence), are continuously increasing. Online service that fills out the petition or application automatically is also showing growth and proving practicality.[9]

Currently, enter of artificial intelligence into the legal field is mainly a level of helping search for information. However, it contains a search ability that goes beyond the level of just listing information that matches the search words. It means that artificial intelligence is useful for lawyers to save a huge amount of time to go library by themselves or to search hard for data. Therefore, calling them 'artificial intelligence replacing legal officers' could be a little exaggerated advertisement phrase. It cannot be said that artificial intelligence cannot replace legal officers. For now, the work of law firms and in-house lawyers in charge of searching for legal information such as domestic and foreign cases can be significantly reduced. In the capitalistic society, reduction of work time by tools leads to 'well-being' in the short term, but can ultimately mean 'discharge.'

It is certainly an exaggeration to call some of the current automatic services 'AI lawyers.' It is like making people imagine cleaning by a walking robot when someone says robot cleaner. However, a real 'AI lawyer' can appear in the future. If it is economically advantageous for employers to hire AI lawyers than human lawyers, AI lawyers must be developed.

IV. Legal professions that can be replaced by artificial intelligence and its ethical legal problems

1. Legal professions that can be replaced by artificial intelligence

According to a study by Oxford University in the U. K, in 2013, the probability of disappearing due to

computer automation because of the development of artificial intelligence was shown very high for the legal clerk at a percentage of 94, and the court stenographers at a percentage of 50%. It was also predicted at 41 percent for the trial researchers and 40 percent for judges. This study result is attracting people's attention in that it represents the possibility of disappearing because of the artificial intelligence in numbers, shows it as a probability, and organizes it in a ranking format.[10]

4.1.1 The work of a lawyer

According to major research institutes, it is predicted that lawyers will be the first to be affected by the development of artificial intelligence since the replacement by artificial intelligence will begin from the typical legal work, which is searching and adapting existing laws or precedents and consulting individual cases. If so, regarding the consulting area, the more searching technology using artificial intelligence is developed, the less the number of legal professionals may be required. In case of litigation, organizing claims by contacting the client personally, collecting and sorting evidence, writing them in a paper, submitting the paper to the court, and persuading the judge at the trial are its main tasks. Therefore, there is a strong aspect of making data and documents quite actively. In addition, while performing the tasks, humane contact, understanding, and consideration for the client are needed. Because of this, there are some aspects of litigation tasks which is hard to automatize. Nevertheless, it can be predicted that if 'lawsuits alone' from the public increase with the help of artificial intelligence, the work in the litigation field might be reduced.

More on that, since their main jobs are advisory and research, a substantial part of in-house lawyers' (including lawyers in companies and lawyers in public institutes) work can be replaced by artificial intelligence. It is because if it became possible even for non-experts to gather legal data

and make a primary decision based on them, demand for in-house lawyers can be decreased. Some of the lawyers working in large companies play a role in gathering, organizing, and reporting domestic and foreign data such as precedents and references related to the specialized field like a patent. Regarding these professions, it can be expected that the use of artificial intelligence would affect a lot of working methods, etc.

4.1.2 The work of a prosecutor

It is very hard to predict which field will get helped by artificial intelligence in the prosecutors' job such as investigation, commanding investigation, prosecution (decision of prosecution and drop, writing papers such as arraignment), sustainment of public prosecution, etc. Among them, however, especially in the field of investigation, it seems that artificial intelligence would be a great help sooner or later.

It is said that the development of intelligent CCTV technology made a small number of operators effectively manage a wide range of areas now. Furthermore, the function that analyzes massive data patterns based on deep learning and predicts crimes in advance is under development. When artificial intelligence learns more data, the day is approaching when it will be able to sit in the control center and take appropriate precautions before the crime occurs, like in the SF movies.[11] Such technology will be able to bring groundbreaking change not only in crime prevention but also in the investigation.

4.1.3 The work of a judge

4.1.3.1 Preparation of sentencing

In the case of civil cases, the electronic lawsuit is getting generalized and increasing due to the enforcement of the 『Act On The Use Of Electronic Documents In Civil Litigations』. It means that in civil cases, the time to use artificial intelligence is approaching. For the learning of artificial intelligence, rich data is essential and big data can

be naturally accumulated through electronic lawsuits.

The civil sentence is largely composed of formal entry, the text of the judgment, and reason. Not only the text of judgment part but also the reason part consists of a very logical structure that organizes facts and evidence regarding claims and protests under the facts of the requirements and establishes legal judgment. If this logical form is injected into artificial intelligence, it might be possible to write sentences by artificial intelligence just as newspaper articles and analyst reports are being written by artificial intelligence now. In the beginning, if you enter the result values (for example, in case of civil cases, the amount of winning cases, main evidence data, etc.), the sentence will be written and the judges will revise it but ultimately, we can imagine the court in which artificial intelligence decides the amount of winning the case by judging the evidence and judges the main evidence data.

However, which argument will be used in this process will be a problem. It is a question of whether to stick to the existing syllogism or program artificial intelligence according to other argument methods.[12] In addition, this is because there is always the problem of value judgment beyond judgment which cannot be solved by the logical method only in the problem of normative judgement.[13]

In case of conviction, the criminal sentence consists of formal entry, the text of the judgment, and reason. (Fact specification, instructions of evidence, application of legislation, and judgment of claims of litigants)

If artificial intelligence can judge the admissibility of evidence and probative force, or if the court can enter conditions about them, artificial intelligence could be a lot of help for the fact specification, application of legislation, etc. In the beginning, in the early stage of using artificial intelligence in court, it will take the form of helping the judges but artificial intelligence will be able to cover a

very wide field if it can completely recognize human language, handwriting, pictures, etc.

Recently, 『Act On Promotion Of The Digitalization Of The Criminal Justice Process』 and 『Act On The Use Of Electronic Documents In Summary Proceedings』 have been put into force. Accordingly, the foundation for collecting big data has been laid in criminal law. When digitization is implemented in the formal trial process later in the future, the big data would be enormous. Based on this, there is already an opinion that attempts to rationalize sentencing by using it in sentencing.[14]

4.1.3.2 Proceeding of the trial

In the era that artificial intelligence covers large parts, major changes regarding the trial process are predicted. Currently, the main boundaries of a trial are the process of persuading the court by related people, making it public, and proceeding with oral statements. However, later in the era of commercialized artificial intelligence, maybe the main process would change into the steps for artificial intelligence to understand the case and to check any errors about it, or to explain these steps to the related people: controlling this process, in general, could be the main task of the court. First, in Korea, there are various difficulties when non-lawyers provide Internet platform-based services. Most service models are likely to be developed and provided by legal technology companies, not lawyers. Therefore, it would be desirable to revise the provisions of the Lawyers Act, which completely prohibits non-lawyers from handling legal affairs, to enable service types by legal technology companies. The artificial intelligence program, which replaces the entire role of the second lawyer, is also vague at the moment, so an artificial intelligence collaboration model with lawyers is likely to be needed. Therefore, in-depth review of the overall legal service industry and more careful discussion on the direction of improvement and development of the legal service market are needed, and these overall contents can be considered at the government or legislative level.

4.1.3.3 Simple procedure

Besides the above preparation of sentencing and proceeding of the trial, it seems that artificial intelligence will be in use or replace many tasks in the nearer future for simple procedures such as the trial of small claims, the procedure for demand, and compromise before the institution of suit procedure, informal proceedings, summary trial, etc.

4.1.3.4. Interval Conclusion

In the early stage of using artificial intelligence, it would be used in a way that helps the tasks of lawyers, prosecutors, judges, etc. This usage of artificial intelligence will save legal officers' time, but it will also make them impossible to work properly. As if people cannot remember the phone number of their own homes in the era of mobile phones is generalized, and they cannot go even to the near place without navigation in the era of navigation gets common.

Furthermore, when it comes to the era of strong artificial intelligence, many tasks of legal professions can be replaced by artificial intelligence. This era will probably be after the arrival of what artificial intelligence scientists call 'singularity.' However, if artificial intelligence technology develops and this era comes, eventually creative tasks and tasks related to emotional communication with humans will only be left as human tasks. Regarding legal officers' tasks, artificial intelligence will cover tasks with many existing precedents that have been accumulated as well and human legal officers will only be needed in creative tasks such as making new precedents or tasks that can be done after understanding human emotions. In other words, artificial intelligence could be used first from the field that can be done automatically with many precedents such as trials of small claims, procedures for demand, compromise before the institution of suit procedures, informal proceedings, summary trials, etc. And it is expected that humans will be in charge of areas such as household adjustment that require human communication until the end.

2. Ethical legal problems caused by the legal system changes by artificial intelligence

It is necessary to predict what kind of ethical legal problem will occur in the process of artificial intelligence covering legal professions and to solve them in advance. As well as in the medical field, in the legal field, if once something goes wrong, the disadvantage of victims caused by the wrongly done task can be very serious and irreversible. Therefore, putting artificial intelligence into the legal area should not be done without precautions through predictions about these side effects.[15]

4.2.1 Problems

4.2.1.1 A matter of the principle of legal process

In a society where artificial intelligence is used, it is necessary to discuss whether the principle of legal process should be changed and developed in other forms, or give up the principle and accept any new basic human rights paradigm.

4.2.1.2 A matter of information protection

The use of artificial intelligence in the legal area is naturally premised upon the use of massive information accumulated regarding legal advice, investigation, and trial, that is, big data. In this process, there is always a concern that personal information may be leaked or used for purposes other than its original one.

4.2.1.3 A matter of distribution of responsibilities

There will be a problem of who is responsible for the damages when artificial intelligence conducted a wrong lawsuit, investigation, and judgment and violated human life, body, property, etc.

4.2.1.4 A matter of big capital monopoly on artificial intelligence

The polarization problem is mentioned as a side effect of the so-called Fourth Industrial Revolution. People with talents and skills, and companies that actively discover and create them grow rapidly. On the other hand, individuals and companies without them are immediately eliminated. Also, the

middle-classes will lose their position as jobs are bisected into simple manual labor and high-tech workers.[16] There is the possibility that the problem of the gap between rich and poor may become more serious in getting legal services because of the monopoly of big data and artificial intelligence technology, the closedness of artificial intelligence algorithms, etc. In addition, from the viewpoint of legal service suppliers, there could be a situation in which some law firms or very few IT companies monopolize all areas.

4.2.1.5 A matter of violation of the Attorneys-at-Law Act, etc.

In the future, regarding the use of artificial intelligence, disputes can always reoccur about violations of the Attorneys-at-Law Act, etc. It is because such problems are also applied to various forms of preparation agency services such as petitions, preparatory documents, etc.

4.2.2 Solution

Regarding predictable problems as above, they should be treated as legal and institutional prior tasks and it has to be approached in the following way: artificial intelligence should be allowed to be used in the legal area after preparing legal and institutional solutions. Plus, to minimize the possibility of errors, side effects and errors have to be thoroughly invested through a 'beta test' before commercialization. Furthermore, it is necessary to prepare a procedure to give a second judgment about the result of artificial intelligence. On top of that, under the purpose of competition law, I monopoly of artificial intelligence has to be regulated as well to prevent the harm caused by it. Current 『Intelligent Robots Development And Distribution Promotion Act』 hardly contains content in the search for the solutions for the problems above, so it is necessary to add more content.[2] Na Jun-ho, 'The development of robot artificial intelligence threatens the middle-class.' 『LG Business insight』, p29, July, 2014.[17]

Controversies such as social rejection and human rights violations may arise when AI replaces the work of humans, such as the emergence of AI lawyers. Therefore, the arguments that may arise from the increased reliance on advanced ICT such as AI in the legal field, should be considered and resolved through transparent information disclosure and social discussion.

4.2.3 Problems and Solutions of Artificial Intelligence Legal Services

First, a vast amount of data is required for artificial intelligence legal services. Collecting such vast amounts of data in itself requires a great deal of resources, and it is by no means easy. Basically, the state needs active help for precedents that correspond to public information. In addition, since it is difficult to collect litigation data for specific cases internally, it is considered that the problem should be solved by the state in relation to personal information. Regarding the possibility and limitations of artificial intelligence's legal judgment, it is still not easy to confirm the reliability of clear judgment on new issues at the level of artificial intelligence. The part of artificial intelligence judgment is still limited to the given data and is only the average value of similar issues as a result of a kind of statistical analysis. It is also a question of how neutrality and fairness are reflected in the creation of artificial intelligence's inference process algorithm. Therefore, in this problem, it is necessary to cooperate with experts in various fields who are worried about artificial intelligence to find a solution. Problems in the lawyer industry and violations of the Attorney Act include disclosure of evidence, legal search, formatting, summary or opinion writing, analysis of cases, and prediction of results. Therefore, job losses are a big problem. This problem is expected to be solved in the direction of fostering professional lawyers through artificial intelligence, and it may also violate the Lawyers Act. Therefore, I believe that the Lawyers Act should be revised. Finally, the monopoly of legal information services is a

question of whether this public nature can be properly maintained as legal services using artificial intelligence begin to be operated based on big data in the private sector. In order to solve this problem, it is to develop artificial intelligence legal services led by the state, and to create a kind of multilateral participation group by participating as much as possible so that no one can exercise exclusively and also to check the state itself.

V. Conclusion

There may be social opposition to artificial intelligence entering the legal area. Especially, there is a possibility that those in charge of legal professions will oppose the replacement of jobs by artificial intelligence. The claim against the 'electronic registration connected program' in the financial field for the risk of personal information leakage and so on could be a similar example.

Artificial intelligence will develop significantly in the future, but it is almost impossible to predict its speed concretely. However, it is clear that a highly marketable part will start being developed rapidly. As a representative part of them, the legal service field along with the medical and finance field is being discussed by many artificial intelligence experts.

As AI research in the legal field in Korea becomes more active and various startups enter the legal services market to compete with existing law firms, lawyers will have to find ways to adopt new technologies to improve their productivity and the quality of legal services, and if they do not prepare in advance, the rapid changes will be disastrous for legal professionals. It is imperative that we thoroughly prepare for the upcoming AI environment and use it as an opportunity to advance the legal system in our society. And in order to solve the artificial intelligence legal service problem, first, the state needs active help in collecting vast amounts of data, and in relation to artificial intelligence judgment, it is necessary to work with experts in various fields to find solutions. The second problem in the lawyer

industry and the violation of the Attorney Act are considered to require training professional lawyers and revising the Attorney Act. The third issue of legal information service monopoly is to develop artificial intelligence legal services led by the state, and to create a kind of multilateral participatory organization so that no one can exercise exclusively, while creating a way to check the state itself.

REFERENCES

- [1] Lee Byoung Kyu, "A Study on Application of §109(1) of Attorney Act to AI Legal Service", 『Law Review (korlaw)』, vol.18, no.2, p.133, 2018.
- [2] Cha Won-yong, The present and the future of artificial intelligence-machine learning-deal learning of Facebook, 『Digieco Report』, p.2, November 2015.
- [3] Na Jun-ho, 'The development of robot artificial intelligence threatens the middle-class.' 『LG Business insight』, p.29, July, 2014.
- [4] Song Si-Seob, "Legal ethics in LegalTech age - Focusing on the Attorney Referral Service", 『Ajou Law Review』, vol.12, no.4, Ajou Law Lab, p.196, 2019. DOI :10.21589/ajlaw.2019.12.4.173.
- [5] Joo Kang-jin, Lee Min-hwa, Yang Hee-jin, Ryu Doo-jin, 'A study on the Development Direction of the FinTech Industry', 45th edition of 『Korean Securities Association』, volume 1, 2016.
- [6] 'First AI lawyer 'ROSS', getting a job at a New York law firm', JoongAng Ilbo, May 17, 2016.
- [7] Kim Sueng-Rae, "The Present Status of and Development Plans for Legal Technology in the Fourth Industrial Revolution", 『Legal Theory & Practice Review (LTPR)』, vol.8, no.3, The Korea Society for Legal Theory and Practice Inc., p.96, 2020. DOI : 10.30833/LTPR.2020.08.8.3.85.
- [8] 'IT meets the law', 『Digital Law Service』, ZDNet Korea, January 6, 2004.
- [9] 'Artificial intelligence has already appeared in legal services', Lawtimes, March 17, 2016.
- [10] Park Jong-Ryul, Noe Sang-Ouk, "A study on legal service of AI", 『Journal of The Korea Society of Computer and Information (JKSCI)』 vol.23, no.7, The Korea Society of Computer and Information, p.107, 2018. DOI : 10.9708/jksci.2018.23.07.105.
- [11] Kim Jong-dae et al, 'Another Industrial Revolution of Evolving Artificial Intelligence', 『LG Business insight』 p.11, 2015.
- [12] Kim Sung-ryoung, 'Current situation of artificial intelligence study regarding legal argument', Fifth edition of 『IT and Legal Study』, Fifth edition of Kyungpook National University IT and Law Research Institute, p.319-346, 2011.
- [13] Choung Hyeuk, "A Study on Legality of Legal Technology". 『Chung-Ang Law Review』, WP vol.24, no.2, Chung-Ang Law Association, p.9, 2022.
- [14] Kang Seung-sik, "Judge AI: Will It Be Possible?", 『Korea Constitutional Law Association』 vol.26, no.3, Korea Constitutional Law Association, p.335, 2020. DOI : 10.35901/kjcl.2020.26.3.229.
- [15] Hun-Yeong Kwon, "AI and the Legal Profession: Ethical and Regulatory Considerations", 『Journal of Law & Economic Regulation』, The Seoul National University Law Research Institute, p.76., 2019.
- [16] Kim Jung-weok, Park Bong-kwon, Noh Young-woo, Lim Sung-hyun, of 『2016 Davos Report, Fourth Industrial Revolution from Artificial Intelligence』, Mail Business News Korea, p.26, 2016.
- [17] Jongho Kim, "Paradigm Shift and Sustainable Education in the Age of Artificial Intelligence", 『Legal Theory & Practice Review (LTPR)』 vol.10, no.1, Legal Theory & Practice Review (LTPR), p.34, 2022. DOI : 10.30833/LTPR.2022.02.10.1.9.

Authors



Jong-Ryeol Park received the Ph.D. degree in Laws and Civil Law from Chosun University, Korea, in 2001, 2006 respectively. Dr. Park joined National Communication Ombudsman District

Prosecutors' Office in Gwangju in 2009 and was a member of Metropolitan Police Agency Administrative Disposition of a Driver's Licence Review Committee in Gwangju in 2010. Also he was Policy Advisers in Gwangju. Jeonnam Regional Military Manpower Administration. He is currently a professor in the Dept. of Police & Law at Kwangju Women's University. He is interested in Civil Special Act and Registration of Real Estate Act.



Sang-Ouk Noe received the Ph.D. degree in Police Studies from Wonkwang University, Korea, in 2015. Voluntarily resigned from human resources department of Posco Gwangyang steel mill in 2008 and worked

as professor for industry-academy cooperation in Gangneung Wonju National University and Cheonnam National University, trying to promote employment and field practices. Since 2015, I have been working as an assistant professor in Police Law Department of Joongbu University. Furthermore, I was designated as a professional member of Korea Industry Commercialization Association in 2014.