

# Present Development Situation of Artificial Intelligence Law and Thinking on the Talent Cultivation

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**Abstract**—The development of artificial intelligence technology has attracted more and more attention and value; especially for legal education, it will determine the prospect of talent cultivation and career development. Therefore, based on the development and current situation of artificial intelligence law, this paper analyzes the shortcomings of legal education in the context of artificial intelligence, and then considers the talent cultivation framework of artificial intelligence law, trying to propose and explain how legal education responds to the development measures and ideas of artificial intelligence.

**Keywords**—artificial intelligence law; law education; talent cultivation; thinking

## I. INTRODUCTION

In recent years, the problem of artificial intelligence has become a hot topic into people's field of vision. This also attracts a large number of jurists to think about the relationship between artificial intelligence and the future trend of legal education. Especially in July 2017, the state formulated and issued the New Generation artificial Intelligence Development Plan, in which it put forward "Cultivate artificial intelligence +X horizontal composite talents and form a new model of composite professional training for artificial intelligence +X", including law. Under this background, legal education can no longer dodge artificial intelligence technology. In April 2018, the talent training of artificial intelligence in the Action Plan of artificial Intelligence Innovation of Colleges and Universities clearly pointed out that it is the focus of the current artificial intelligence innovation plan to perfect the training goal, reasonably distribute the discipline and strengthen the intensity of talent training. At the National Education Conference, General Secretary Xi Jinping put forward the requirement of "promoting innovation in industry, education and research, actively participating in the implementation of innovation-driven development strategy, focusing on cultivating innovative, composite and applied talents" [1]. In order to implement the spirit of the general secretary's speech in-depth, the legal education should realize the transformation from the experimental law to the intelligent law, to open up the visual field and the new face to respond to the challenges of the new technologies such as the Internet, the big data and the artificial intelligence to the legal system. Under such a background, as a practitioner of legal education, we must face the impact of

artificial intelligence on our legal education, and we must also consider how to adapt to the development of artificial intelligence.

## II. THE DEVELOPMENT AND PRESENT SITUATION OF ARTIFICIAL INTELLIGENCE LAW

Judge Posner, a U. S. judge, described the legal profession as "a cartel of service providers involved in the law of society", that is, a monopoly industry. This statement shows that due to the unique immunity of the legal profession, the previous revolution in industry and science and technology always had a relatively small impact on the legal profession. From the training of lawyers to the selection of judges, the mode of operation of the legal profession system is almost continuing before modern times, which is particularly obvious in western countries. In this context, the traditional legal education itself has also developed step by step on the existing route, and in fact, the traditional legal education has not changed qualitatively after the modern stereotype for a long time.

However, "Artificial intelligence technology is expected to change this reality: as a technology that attempts to understand the essence of human intelligence and simulates and extends human intelligence on this basis. In theory, by establishing an appropriate calculation model, artificial intelligence technology can efficiently complete information collection, regulation arrangement and implement or imitate the legal reasoning process, thereby outputting solutions and corresponding explanations for input legal issues." [2] Some experts even believe that alternative business models such as "online legal services and robot legal services produced in the context of artificial intelligence can provide legal services to end-users at lower prices, which is expected to standardize, commercialize, automate and democratize legal services. Commercialization means that the provision of legal services no longer mainly depends on the professional literacy of specific human lawyers, but can be provided in an automated way; democratization means that most people will have access to general legal services at a lower cost." [3] Therefore, it seems that the wall of bronze or iron of traditional legal education may also be broken, and legal educators have to face up to how artificial intelligence affects legal education itself.

In fact, if it is international, this thinking and even the expansion of action is much earlier than we thought. For example, in 1987, the first "Artificial Intelligence + Law" conference was held at Boston University in the United States. The conference also established IAAIL (International Association for Artificial Intelligence and Law). [4] In the establishment of law courses, many well-known law schools abroad have already begun to lay out. In 1984, Professor Paul Brister of Law School, Stanford University in the United States and others discussed whether "artificial intelligence and law" should be offered. Law school, Harvard University is moving more quickly, and artificial intelligence and law seminars have been held since 1985. At present, the main courses offered are: "Network Law Frontier: artificial Intelligence, Automation and Information Security", "legal advice and Strategy in the data Age", "Comparative data Privacy", "Compliance and Operation" and so on. Other universities are not willing to lag behind. For example, since 2012, Georgetown University set up courses such as "Robotics Act", "Science and Technology Law and Policy Research", "Computer programming for lawyers", "Electronic legal investigation", and so on. In 2015, the University of Melbourne Law School began to offer courses on how to develop legal applications, and so on.

In contrast, China has a relatively weak sense of the influence of artificial intelligence technology on law. For a long time, the thinking of artificial intelligence or big data on law lags behind, until the State Council's New Generation artificial Intelligence Development Plan sees the combination of legal education and artificial intelligence, and puts forward to create a new training model of "artificial intelligence+ law" compound specialty. Under the promotion of this policy and the government, around 2017, the development of artificial intelligence law has just begun to show a trend in the ascendant: not only the number of related academic papers has increased sharply, but also some pioneers have begun to try to combine artificial intelligence with law education. Among them, Tsinghua University set up the interdisciplinary field law education project "full-time legal Master of Computational Law" in 2018, and offered a series of technical courses combined with network, big data and artificial intelligence, which combines the advantages of "Tsinghua University Law School Law and Big Data Research Center" to comprehensively carry out the application research of new technologies such as big data and artificial intelligence in the legal industry, and build an integrated system of production, education and research in the field of legal big data and artificial intelligence; The Law School of Renmin University of China has also carried out the reform in the field of law+ science and technology teaching, offering a series of interdisciplinary courses, such as inviting experts in the field of new technology to teach the application of artificial intelligence technology in the field of big data's credit information, the basic principles of blockchain and its application in finance and other fields, as well as the course "introduction to big data Analysis". In the same year, Southwest University of political Science and Law set up artificial Intelligence Law School, and offered graduate courses such as "legal Retrieval Technology", "Mining, Analysis and Application of Law big data", at the same time,

which formally trained master and doctoral students of artificial intelligence law. It can be said that artificial intelligence law has shown a blowout situation in China for the past two years.

### III. THE PROBLEMS EXISTING IN LEGAL EDUCATION AGAINST THE BACKGROUND OF ARTIFICIAL INTELLIGENCE

However, although the development of artificial intelligence law at home and abroad is quite vigorous in recent years, it is more "more lively and limited progress". One of the fundamental reasons is that the mode of traditional legal education has not been fundamentally changed, as a result, the artificial intelligence law has a certain degree of incompatibility in the cultivation of talents under the traditional mode. For example, Ryne Z., Tamanaha, a professor at Washington University Law School in St. Louis, USA, in "Failing Law School", seriously criticizes the law education model of "4+3" (four-year undergraduate and three-year law school education) in the United States, and holds that law school does not need to go to law school for three years at all, but it takes up to two years at most, maybe a year [5]. However, the traditional Chinese law education is four years of undergraduate law education after graduating from high school, which is difficult to adapt to the future legal practice dominated by robot and artificial intelligence. Compared with current lawyers, future lawyers will do a very different job, so different education is needed. Although this statement may take time to verify, it also shows that artificial intelligence law is difficult in the traditional law training mode.

However, the fundamental problem of artificial intelligence law in the traditional legal education mode is not formal problems such as training years, but needs to be reconstructed and set up in knowledge. The development of legal artificial intelligence depends not only on legal data and specific algorithms, but also on the support of compound talents who understand both technology and law. From the present situation in China, the talent training and the reserve condition of the legal artificial intelligence are difficult to provide sufficient human resources support for its development, even in the long time in the future, the development of legal artificial intelligence may be subject to the lack of talent. The reason for this lack is actually from the two aspects of the field of legal education and artificial intelligence technology.

#### A. *The Traditional Legal Education Has Insufficient Knowledge of Artificial Intelligence Technology*

1) *Unfamiliar to data statistics and analysis technology in the field of traditional legal education and research:* In the traditional sense, the legal person trained under the liberal arts training mode is more used to view the legal problem from a qualitative rather than quantitative perspective. Even in the context of the gradual rise of empirical research in recent years, the quantitative research is still small. In a few empirical studies, descriptive statistics are used to explain the objective world by means of the methods of percentage, growth rate and graphic description, and there is a lack of inferential statistical methods such as correlation, regression, and clustering. The reason for this is that one of the most

important and realistic reason is that our researchers themselves don't know about the technology of data statistics and analysis, not to mention skilled use. This limitation in the big data era will be infinitely magnified. Traditional legal experts are not proficient in big data, in the face of massive data, often rely on Baidu, Tencent, Alibaba and other enterprise data experts to find the evidence they need.

2) *Legal educators don't know much about big data's algorithm:* In the era of small data, the legal person applies a statistical algorithm, or an empirical study of the law, and may be able to deal with it. But in the face of the massive and huge data flow, this kind of "algorithm" can not accurately grasp the law phenomenon and the law of the judicial operation, but it needs a more elaborate and technical algorithm. However, the reality is that legal practitioners are laymen on whether and how to apply algorithms to deal with legal big data, let alone construct a successful algorithm model, even there is no real large-scale practical use of algorithms to construct referee patterns.

3) *Traditional law majors lack an objective understanding of artificial intelligence:* In the background of the rapid development of artificial intelligence, more and more legal people began to pay attention to artificial intelligence, but also diligently study, research related knowledge, technology, but still lack the objective cognition of the artificial intelligence of the law. Some legal people do not even care about artificial intelligence. When they talk to experts in the field of artificial intelligence, they equate the predictions that artificial intelligence can make with human reasoning, or think that artificial intelligence will completely subvert human society and human beings will become slaves to robots. These fantasies that break away from artificial intelligence often laugh and make experts in the field of artificial intelligence lose interest and courage in further dialogue in addition to their horror.

#### *B. The Artificial Intelligence Technology Itself Lacks the Corresponding Integration with the Legal Profession*

1) *Artificial intelligence technicians lack the necessary reserve of legal knowledge:* Although many programmers are extremely skilled in coding, they are limited to having never come into contact with the legal professor before, so they cannot understand the product requirements put forward by the legal person. This makes many legal artificial intelligence products can't meet the expectations of legal people, the actual role is relatively limited. At present, the development of legal artificial intelligence is superficial, but there are only a handful of talents who really understand and master artificial intelligence technology and machine learning algorithms. Some even do not devote themselves to the professional field of legal artificial intelligence.

2) *Insufficient investment in legal artificial intelligence in the field of artificial intelligence:* At present, although many legal technology companies attach great importance to the development of legal artificial intelligence, and do invest

considerable resources, compared with the development of artificial intelligence in other fields, these investments are not considerable. This is far from compared with the investment in the development of "Alpha Dog" Weiqi artificial intelligence by Google's DeepMind company, or with Baidu, Tencent, Ali and other companies to develop general artificial intelligence products. In fact, at present, the companies in China which are keen on the Research and Application of legal artificial intelligence, their size, talent and capital are relatively limited, far less than large technology companies. That is to say, there may be large technology companies, such as Iflytek, intervening. The core technology is also general-purpose voice technology, instead of specifically developing artificial intelligence for the law. For example, the voice technology of the information Iflytek has not been widely used in the present trial practice, one of the reasons is that the manpower and resources invested by the Iflytek are not enough, the general voice technology can't be converted and developed into a special legal voice technology, In particular, it has not yet solved situational problems for multi-party interaction and debate in complex court trials, and the last kilometer technical obstacle of the real and practical legal voice application has not been opened.

3) *The use of artificial intelligence by the technical community is too utilitarian:* The current artificial intelligence technology is mainly concentrated in the fields of high income and high salary such as finance, automobile and internet. This is similar to the situation abroad. In December 2017, Bloomberg said that artificial intelligence would occupy the 99 per cent of Wall Street's investment institutions;[6] In the auto industry, Tesla attracts a large number of artificial intelligence talents, Many artificial intelligence talents who graduate from colleges and universities are attracted by the high salary of Internet enterprises such as BAT, and devoted to them. Compared with these high-income industries, the legal profession is slightly cold, and the attraction is obviously insufficient, so it is difficult to attract high-tech talents. The situation may not change in the short term.

In short, the problem of talents is the most realistic obstacle and bottleneck of the development and application of the legal artificial intelligence. After all, if there is no qualified labor, how can the good "artificial intelligence" be produced? In particular, when machine learners are asked to classify new knowledge data, classification design will inevitably introduce some inductive biases, that is, machine learners have inevitable deviations in "cleaning" data, designing assumptions and verifying problems. It is precisely on this key issue that the legal profession does not seem to be fully prepared to invest in "legal labor", and the artificial intelligence industry, especially the science and technology business community, is not ready to do so. Perhaps only when the legal person and the technical person combine closely, understand each other, fully know each other's needs and expectations, and actually solve the practical problems in the application of law and technology, artificial intelligence can enter the field of law.

#### IV. BUILDING A TALENT CULTIVATION FRAMEWORK FOR COMPOUND ARTIFICIAL INTELLIGENCE LAW

It is precisely because of artificial intelligence that the first thing is the “Labour” problem, so how to train qualified compound cross-talents is the first topic of artificial intelligence law. Especially, as the main sculptor and founder of legal theory, legal education must walk in the front of the theory of dealing with artificial intelligence and play the theoretical cornerstone. As mentioned earlier, universities at home and abroad are exploring the subject and curriculum system of artificial intelligence law. However, from the current point of view, this kind of exploration is still limited to the exploratory stage, and it is still too early to form a complete system. Therefore, what is really needed now is to sort out the basic framework of how to train legal talents to adapt to the era of artificial intelligence. In my opinion, this kind of frame problem can be divided into three parts:

##### *A. Clarifying the Issue of Talents Import Entrance and Export*

In any current higher education in China, what must be considered is the issue of “entrance” and “export”. The so-called “entrance” is the object and scale of enrollment; the so-called “export” is the trend and employment of cultivating talents. Specific to the direction of artificial intelligence, a question worth thinking is: should the training object of legal education also change with it? Taking “entrance” as an example, at present, all the law undergraduate students enrolled in colleges and universities in China are selected from the liberal arts major. However, once involved in artificial intelligence, the lack of science knowledge or the lack of emphasis will inevitably affect the absorption and cultivation of the relevant knowledge. If even the basic knowledge of the algorithm can’t be mastered, then obviously want to deeply grasp the cross-knowledge of artificial intelligence and law is obviously unsolvable. Of course, with the development of the reform of national college entrance examination in the liberal arts and sciences, and the attention to the professional composite type in the selection of graduate students, the entrance problem should be solved. And the problem of “export” seems to be more difficult. Affected by tradition, in fact, the current export of law undergraduate majors has been affected by many factors, even for several years, it has been ranked as a professional red light for employment.[7] A major cause of this situation is that the training of law students is really too large, and the direction of employment is often limited to a limited number of directions, such as judicial units, corporate legal affairs, law firms and so on. Then, the further integration of artificial intelligence and law, on the one hand, may promote the differentiation of legal major training in different colleges and universities, and even do not rule out the elimination of some colleges and universities in this process. On the other hand, it may find some new “exports” for law students, such as the development and integration of relevant legal software. Therefore, clarifying the “entrance and export” issue of legal education in the context of artificial intelligence is not only related to the cultivation of talents, but also to the survival of the law school itself.

##### *B. Grasping the Cultivation of Compound Talents*

The development of artificial intelligence will lead to the redistribution of professional personnel pattern. It is likely that the main direction of employment of future legal professionals will be the reviewer or value judge. Of course, it may be easier and more convenient to train technicians to understand the law than to train legal personnel to understand the technology. However, under the existing pattern, how to train “legal personnel to understand technology” has become the main path of legal training. Therefore, according to the current training situation of law major, multi-disciplinary interdisciplinary is the basic allocation of talent training, at the same time, in addition to cultivating the value judgment ability and legal thinking of law students, it should also pay attention to cultivate their ability to use artificial intelligence to engage in legal activities. According to the requirements of new generation artificial intelligence development plan, in order to build compound legal talents, colleges and universities can integrate the contents of artificial intelligence education in the original basic classroom. The integration of artificial intelligence and law will inevitably involve many disciplines, such as ethics, computer science, sociology, and so on, therefore, it is necessary to establish a multidisciplinary cross platform. At the same time, the corresponding supporting curriculum system is also to be implemented. It is possible to add relatively easy to develop teaching courses such as the retrieval of legal big data, the analysis and discussion of typical examples of artificial intelligence, the relationship between artificial intelligence and ethics & jurisprudence. In addition, the practice and teaching of artificial intelligence should be strengthened. Our colleges and universities can cooperate with domestic and foreign enterprises, and law firms provide practice platform for law students, give them the opportunity to contact and use artificial intelligence robots & artificial intelligence operating systems, and accelerate the transformation of theoretical results to practical results.

##### *C. Strengthening Interdisciplinary Research*

From the current development of artificial intelligence, the possibility of being replaced by the robot in the academic field is not great, after all, the emergence of a “robot scholar” is still difficult to imagine in terms of technology or ethics. But not being replaced does not mean not being shocked. Especially in the teaching of artificial intelligence law, the necessary knowledge reserve has become the key node for us to output relevant knowledge to students. In the case of today, the first question is how to set up the subject system and course system of artificial intelligence law? How to write the teaching materials and materials of artificial intelligence law? In the long run, the group of teachers will also face the challenge of artificial intelligence in their own field of discipline, and may even be an AI problem for each professional course (Perhaps the course in the history of law can be spared) Therefore, in this case, updating their knowledge reserves and strengthening interdisciplinary research may be the necessity of most legal educators.

## V. CONCLUSION

No matter how unsuitable the legal educators are and how unwilling to give up the pride of sticking to their own profession, it is a fact that the emergence of artificial intelligence technology and the impact on the traditional legal education model. As Victor said; “Law big data in an unprecedented way, through the analysis of massive legal data, the prejudgment of legal issues, the acquisition of products and services of great value, or the emergence of new perceptions, profound views and ideas.”[8] The emergence of artificial intelligence law is doomed to be a revolution to the traditional legal education model. In the future, legal education and artificial intelligence and other cutting-edge information science and technology will be increasingly closely combined, and whether this idea can be realized sooner and faster depends on the reaction speed of legal education. As a legal educator, we must adapt to the speed of this development and pass it on to the students we want to train. The wind starts at the end of Qingping, maybe it is time for us to act!

## REFERENCES

- [1] “The Important Speech of General Secretary Xi Jinping Leading the New Thinking and New Action of the Education Front”, China News Network, 2011.9.12, <http://www.chinanews.com/gn/2018/09-12/8625467.shtml>. (in Chinese)
- [2] Zhao Peng, The Development of Legal Artificial Intelligence Technology and the Response of Law Education, *High Education and Horizontal*, 2019.3/4, p.75. (in Chinese)
- [3] Cao Jianfeng, “Top Ten Trends in Artificial Intelligence + Law”, *Robotics Industry*, No. 5, 2017, p. 86. (in Chinese)
- [4] Jiang Ke, “legal Education Model of Science & Technology Colleges and Universities” under the Background of “Artificial Intelligence +” [J], *Think Tank Era*, 2018139 (23): 74 -77. (in Chinese)
- [5] Cao Jianfeng, “The Prospect and Challenge of the Legal Service of Artificial Intelligence”, Tencent Research Institute, 2017.3.20.<https://www.tisi.org/4855>. (in Chinese)
- [6] Nishant Kumar, How AI Will Invade Every Corner of Wall Street, *March* 3, 2018, <https://www.bloombergquint.com/business/2017/12/05/how-ai-will-invade-every-corner-of-wall-street>.
- [7] 2019 Chinese College Students Employment Report, to See Where They Went after Graduation, *Sohu Education*, Aug. 29, 2019, [https://www.sohu.com/a/337364897\\_100014885](https://www.sohu.com/a/337364897_100014885). (in Chinese)
- [8] Yang Landan, “Law Big Data Is A Revolution in Research Methods”, *Journal of Social Sciences*, Jun. 2, 2016, 2nd edition. (in Chinese)