# Risk and countermeasures of artificial intelligence trial

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***Abstract:*** *Under the background of the people's courts vigorously promoting the construction of intelligent courts and accelerating the change of judicial mode, artificial intelligence has brought new opportunities for the development of judicial trials in China. Artificial intelligence trial has been widely used in China's judicial practice, and has achieved good results. Compared with the traditional judicial trial mode, artificial intelligence trial has the advantages of high efficiency and more comprehensive information provision. However, the intervention of artificial intelligence trial will inevitably have an impact on the traditional trial, causing people's concerns about judicial justice, judicial credibility and judicial accountability. The key to solving the problem is in what position the artificial intelligence trial should be placed, which determines what function it should play and the boundary of what function it should play. Therefore, it is necessary to start with the positioning of artificial intelligence trial and straighten out the relationship between artificial intelligence trial and judges. On this basis, the supporting measures related to artificial intelligence trial should be improved, that is, by strengthening the supervision of algorithms, clarifying the application boundary of artificial intelligence trial and reasonably setting up the work assessment mechanism of judges.*

***Keywords:*** *artificial intelligence; judicial trial; application limit*

## 1. Introduction

Artificial intelligence is the product of social development and technological innovation. Artificial intelligence technology has penetrated into the legal industry and developed rapidly in the legal field. In 2016, the Supreme People's Court first proposed the concept of building "intelligent courts", and courts across the country have invested in the research and development of artificial intelligence trial applications. After several years of rapid development, artificial intelligence technology has basically realized the whole process from online case filing and court hearing to online service. The integration of artificial intelligence technology and justice has become an inevitable trend, and artificial intelligence trial has already landed in many courts. The risk of Artificial intelligence trial appears with its application, and it has been widely used in judicial practice, how to deal with the risk of Artificial intelligence in judicial field is a difficult problem in the process of court information construction.

## 2. Analysis of the Current Situation of Artificial Intelligence Trial

In the eighties and nineties of last century, our country began to study the application of artificial intelligence in the field of law, and developed "Pkulaw", "practical expert system of criminal law" and other applications. This kind of application exists more as a legal database, integrating various laws and regulations, cases and literature. The functions they can achieve are relatively simple and their positioning is relatively clear as auxiliary tools for legal practitioners to handle cases and handle office work. In recent years, the contradiction of more cases and less staff in the court is becoming more and more serious. Improving the efficiency of judges has become an important goal of deepening the judicial reform. Many courts cooperate with high-tech companies to develop artificial intelligence trial applications, which are widely used in courts. And the same verdict is regarded as the value goal of artificial intelligence trial[1]. Among them, Zhejiang's "Phoenix Wisdom Trial" system is representative.

### 2.1. Specific application of artificial intelligence trial: A case study of the "Phoenix Wisdom Trial" of Zhejiang Province

In September 2019, the High People's Court of Zhejiang Province and the Hangzhou Intermediate People's Court collaborated with Zhejiang University and Alibaba to develop the artificial intelligence judge assistant "Xiaozhi," starting the "Phoenix Wisdom Trial" mode featuring human-computer integration. With the support of Xiaozhi, the courts in Zhejiang Province successively explored different models including "Phoenix Finance Wisdom Trial", "Phoenix Private Lending Wisdom Trial", and "Phoenix Administrative Wisdom Trial".

Take the "Phoenix Private Lending Wisdom Trial" model as an example, "Phoenix Private Lending Wisdom Trial" is aimed at folk lending type of disputes development of the application. In the 1.0 era, it boasted the functions of generating a chain of evidence in real time, asking factual questions in real time, automatically waking up evidence as well as on-demand broadcasting of court trial videos. All of these functions made facts related to loans clearer, court trials more efficient, and after-court review more accurate. In the 2.0 era, it will be capable of automatic court scheduling, case distribution, and online intelligent service. In the process of a court trial, it will be able to precisely push the applicable legal clauses to the judge and predict the outcome of a judgment. In the meantime, it will also provide an interest rate calculator to assist in the generation of judgment documents, thus realizing the judgment of a case on the spot. During the period of pilot implementation, the average time required to handle a private lending case through the intellectual trial platform is 38% shorter than that required by traditional means. Compared with applications 1.0, the 2.0 system can realize three innovative functions, such as online pre-warning of risks of false lawsuits involving private lending disputes, online identification of financial on-lending transactions and online warning of professional lenders, so that false lawsuits can be identified in a more accurate manner and false lawsuits can be cracked down more effectively. After "Phoenix Private Lending Wisdom Trial", the direction of development is the front-end governance of folk lending disputes, through the promotion of electronic IOUs, further solve the difficulties of governance of folk lending disputes.

### 2.2. Advantages of Artificial Intelligence Trial

#### 2.2.1. Improving Judicial Efficiency

In 2022, the number of cases accepted by courts nationwide will reach 33.723 million, and the number of cases completed by each quota judge is 242, with more than 300 in some regions. When the number of judges and the number of cases presents such a large disparity, the high efficiency that can be brought by artificial intelligence technology can meet the needs of the courts in this regard. For cases that are simple in details and can be consolidated in trial, the artificial intelligence can consolidate repetitive affairs to shorten the trial time of the court; however, for cases that are complex in details and involve a large number of evidential materials, judges need to search for the facts of the case and evidence from lengthy documents and dossiers, and consult relevant cases and legal bases, which involve huge workload, and judges are unable to invest a large amount of time and energy on these affairs. Artificial intelligence technologies can automatically extract case information and key evidence, and provide them to judges after sorting them out. Meanwhile, relevant legal norms and similar cases in the database will be forwarded to judges precisely for the convenience of study and judgment, and the maximum reduction of the burden of judges that is not related to core trial matters[2].

According to the 2023 Work Report of the Supreme People's Court, with the support of artificial intelligence application, judges' routine work can be effectively reduced by more than 30% and the efficiency of trials can be improved by more than 20%. From the above data it can be seen that with the help of artificial intelligence, the workload of judges has been reduced significantly, and judges can focus more on the trial process. Artificial intelligence technology has indeed improved the efficiency in judicial trials, alleviating the difficulties of "more cases but less people" for courts.

#### 2.2.2. Regulate the Exercise of Discretion

In the process of trial, because of the asymmetry between the legal provisions and the facts of the case, judges need to use discretion to bridge the difference between the two in many cases.[3] The exercise of judges' discretion will be limited by personal experience, legal literacy, value orientation and other factors, thus increasing the uncertainty of judicial decisions, and even leading to miscarriage of justice. Although judges have undergone professional and systematic training and have long-term judicial experience, the limitations of their personal knowledge and experience make their intuitive

judgments often ignore some important information, and thus make unfair or even wrong judgments[4].

On the other hand, algorithm, as artificial intelligence's core, can guide artificial intelligence to operate in accordance with preset rules and procedures, and output conclusions. Specifically, when the judge inputs the facts of the case into the artificial intelligence trial application, it will search and compare the most suitable laws and cases according to the laws, regulations and cases stored in the system, and then provide a more reasonable judgment. Artificial intelligence trial can avoid the interference of external factors such as public opinion, interests, superior leaders, etc., give the most in line with formal justice, avoid the abuse of judges' discretion, and make the judgment result more rational and acceptable.

It can be said that artificial intelligence technology has changed the traditional mode of judicial operation, and essentially created a new possibility for the promotion of judicial efficiency and judicial fairness[5].

## 3. The Problems of Artificial Intelligence Trial

Although the advantages of artificial intelligence in trial are obvious, it also arouses people's thought: what kind of problems it may have.

### 3.1. Restricting Judicial Justice

It is generally believed that judicial justice in the modern sense includes both substantive justice and procedural justice. Substantive justice is more reflected in the justice of the result of adjudication, which can be divided into formal justice and substantive justice. Although artificial intelligence in trial under the guidance of algorithms can restrain the arbitrary adjudication of judges, this embodies a kind of "algorithmic justice", which will impact the legal system excessively, and thus deviate from the substantive justice in the legal sense.

On the one hand, law is not a mechanical program, and judges have never been machines that simply apply the law. The sociologist Roscoe Pound believes that "law is experience developed by reason and reason examined by experience", and law is the knowledge of the coexistence of reason and experience. Artificial intelligence in the support of algorithms can indeed achieve more rationality than human judges, but this kind of mechanical justice lacks the integration of morality and values, and is difficult to achieve the unity of legal, social and political effects in the result. For the content that the law itself does not stipulate, it is difficult to expect artificial intelligence to do legal interpretation from the point of jurisprudence; for the issues that are still controversial in theory and have not formed a unified view in judicial practice, artificial intelligence will also misjudge.

On the other hand, artificial intelligence needs to learn and train from existing data. If there are defects or errors in the data as the source of "knowledge", it will affect the subsequent training results. If artificial intelligence trial applications are to be developed, they need to be provided with enough cases for learning, most of which come from existing judicial practice. In order to keep artificial intelligence on the right track, the cases provided to artificial intelligence should be free of errors and biases, otherwise it will lead to wrong learning results. Once artificial intelligence make a new wrong judgment based on wrong learning, a series of chain reactions will occur. In fact, the data as training materials come from human judges, naturally there are subjective biases, so trained artificial intelligence will be difficult to overcome the influence of the data source.

### 3.2. Diminishing the public trust of judicature

The public trust of judicature is the guarantee of judicature vitality. Judicature has authority only when it obtains social identity and public trust. All along, people regard judicature as a serious matter, which not only comes from judicature is an important part of the national governance system, but also comes from the public's respect for the profession of judge. People believe that judges have professional knowledge, high morality, a strong sense of social responsibility, but also believe that judges can uphold justice for people, which makes the profession of judge have high prestige in society. People believe in judges, people believe in law.

The development of artificial intelligence can lead to more sophisticated calculation and more rigorous reasoning, but it cannot calculate which value considerations a judge will have in each case, nor can it deduce the factors of value behind a legal rule or principle. Especially in the face of new

types of cases, it is impossible to solve them only by existing rules. What is more important is to rely on the subjective initiative of the judge, combining legal rules with morality and justice. At this point, the scope for artificial intelligence to play a role is rather limited.

Black box Algorithmic is an inevitable topic in the discussion of artificial intelligence technology, and its existence is incompatible with the idea of open justice. When an enterprise researches applications of artificial intelligence, it will invest a lot of time and resources in training artificial intelligence, which will have relatively high commercial value. Therefore, enterprises tend to protect artificial intelligence by way of trade secrets to avoid disclosure of data. As a user, although the judge used artificial intelligence to handle cases, he was unable to explain the algorithm. This would inevitably arouse public doubts. The credibility of the judiciary could not be separated from the openness and transparency of the judiciary. The existence of the black box Algorithmic undoubtedly damaged the credibility of the judiciary.

### 3.3. Increase risk of judicial deaccountability

Under the judicial responsibility system, judges shall be responsible for the cases they hear and bear the corresponding responsibility. With the development of artificial intelligence trial and its wide application in the judicial process, the judge will trust artificial intelligence gradually, even produce the dependence psychology, even if the result given by artificial intelligence is a little different from the judge's free evaluation of evidence, the judge may also choose to adopt the artificial intelligence's point of view. The role of the judge in the trial gradually decreased. It seemed that the judge was trying the case with the assistance of the artificial intelligence, but in reality, the judge was in a supporting role. If the judge did not accept the result of the artificial intelligence's trial, he would have to give sufficient reasons. At this time, will the judges abide by the judgment of the artificial intelligence as a reason for exemption? What is the relationship between the judges of form trials and the artificial intelligence of substantive trials? Is it appropriate for the system of judicial responsibility to continue to investigate the liability of the judges in an auxiliary position? If judges do not bear liability while artificial intelligence is held liable, will it give play to the value of judicial accountability? These will become thorny issues.

### 4. Positioning of Trials Involving Artificial Intelligence

Artificial intelligence trial has its unique value, which is the original intention of introducing artificial intelligence in the judicial field. But on the other side of technology, there are unpredictable risks. It is better to respond in advance to prevent the risk than to wait for the risk to take remedial measures. What kind of way artificial intelligence should appear in the judicial trial and how to exert its function should start from the position of artificial intelligence in the judicature.

First of all, the judicial field should not exclude the application of artificial intelligence trial. The introduction of artificial intelligence into judicature is a common trend in the world. As early as the 1970s, Canada, Britain and other countries developed an intelligent legal information retrieval system. Nowadays, artificial intelligence systems, such as PROGOG developed by University College London and COMPAS developed by the United States, are more popular than ever before. Briggs, the Lord Chief Justice of the Court of Appeal of England and Wales, has said: "Artificial intelligence can be used to adjudicate civil cases in England and Wales online. In this respect, artificial intelligence can assist judges and even make judgments"[6].Artificial intelligence trials had become an indispensable part of the judicial development of various countries around the world.

Secondly, artificial intelligence trials could not replace the role of judges. As mentioned earlier, artificial intelligence does not possess the normal emotions of humans. As a typical social science of humanities, the development of law is not based on logic and rationality like mathematics and science. It can even be said that law has never been decoupled from sensibility. In the disputes of marriage and family cases, artificial intelligence may play a negative role. It lacks an understanding of intimacy, and it is impossible to conclude from existing cases when a marriage has reached the threshold of dissolution. In addition, artificial intelligence could not perform the function of mediation. Mediation is an original non-litigation dispute resolution method created by our country to eliminate disputes. It can protect the interests of both parties to the greatest extent and build a harmonious social environment. Mediation is a higher level of trial, is a higher art of trial, should run through the whole process of trial. Here, too, artificial intelligence has no place.

Finally, artificial intelligence trial should be in a supplementary position. The advantage of artificial

intelligence lies in its ability to collect and process information. It is more suitable to be used as an auxiliary tool to judge a case, reducing the time cost of the judge in law and case retrieval, and providing a basic framework for the judge to concentrate on the discussion and analysis of the focus of the case.

## 5. Suggestions for the Development of Artificial Intelligence Trial

### 5.1. Integrating Existing Applications and Strengthening Algorithmic Regulation Mechanism

A perfect application of artificial intelligence should not only have enough high-quality data as a support, but also be able to prevent the unpredictability brought by algorithm. On the one hand, courts in different regions of the country are developing their own artificial intelligence trial systems, each system has its own characteristics, but there is also a shortage of data. This requires the Supreme People's Court to take the lead in integrating resources from existing applications, develop a unified artificial intelligence trial system, and connect it with judicial data of courts across the country, so as to provide artificial intelligence with sufficient data sources. On the other hand, in order to make artificial intelligence continue to play a positive role in the judicial process, we should let the algorithm under our supervision, judges are not only users, but also designers and supervisors. Algorithms, as trade secrets of enterprises, have very high business value and deserve protection. However, this does not mean that algorithms shall not be supervised. Judicial authorities may introduce judges with background in computer technology, or jointly cultivate such talents with colleges and universities. Because judges themselves have the professional requirement to keep trade secrets, coupled with the binding of confidentiality agreements, the algorithm can be effectively supervised with the smallest possible disclosure scope.

### 5.2. Clarifying the Boundaries of artificial intelligence Trial

Artificial intelligence trial should be used in different cases to different extent, not simply applied to all cases and trial process. The application scenarios of trials of artificial intelligence may be combined with the reform of separating complicated cases from simple ones by courts, such as civil cases to which the summary procedure and small claim procedure apply as well as criminal cases to which the fast-track sentencing procedure apply, the facts are usually clear, the legal relationship is definite and the dispute is not serious, and the judgment can be formed by simple application of law and retrieval of similar cases, and there is more room for artificial intelligence trial to play its role. As such cases involve a large quantity and have concentrated causes, such as private lending, financial loans and road traffic, it is easier to achieve the effect of giving the same verdict for the same cases with the aid of artificial intelligence trials. For simple cases, the judge still needs to review the facts and evidence of the case to ensure that the artificial intelligence will not omit important information. For difficult and complex cases, trial with artificial intelligence can help judges sort out case details and evidence, provide legal articles and support of similar cases, and put forward trial suggestions, but it is never allowed to hear substantive cases with artificial intelligence as the main body, even if a judge adopts the opinions of an artificial intelligence, he or she shall fully analyze the facts, evidence, and legal basis in the judgment so as to give adequate interpretations and reasoning, and shall absolutely not use the conclusions of the artificial intelligence as the grounds for the judgment. Regardless of simple or complex cases, and regardless of the role of artificial intelligence in the role of the judge, we should respect the subjective status of the judge in the lawsuit and the centrality of the case in the process of hearing.

### 5.3. Reasonably setting up the performance review system for judges

During the process of introducing artificial intelligence trial into the judicial system, some unreasonable practices will affect the behavior of judges in handling cases. The performance appraisal system for judges has a great impact on the salary and promotion of judges. Most judges will carry out their work according to the requirements of performance appraisal, and changes in the appraisal indicators mean changes in the way judges work. In the process of court information construction, some courts regard the application of artificial intelligence trial as the object of assessment, which increases the pressure of judges intentionally or unintentionally.

To strengthen the integration of artificial intelligence and judicial work, we should guide judges to actively accept artificial intelligence, rather than making judges passively accept artificial intelligence

through the assessment mechanism. The performance appraisal system shall be set up in a scientific and reasonable manner and in line with the law of trial, with ensuring judicial independence and the subjective status of judges as basic requirements. Firstly, different types of cases shall be tried with artificial intelligence to different degrees, and the same evaluation mechanism shall not be uniformly applied. Secondly, judges' independent trial authority shall be ensured, and judges shall not be negatively evaluated for refusing to apply trial suggestions made by artificial intelligence, and the trial work of judges shall be evaluated by legal effects.

## 6. Conclusions

The judicial application of artificial intelligence technology points out the development direction for the construction of intelligent court, it is significant to promote the construction of court information, but the existing system is still to be improved. No matter what level the technology is developed to, the auxiliary position of artificial intelligence in trials shall not be changed, and neither shall the subjective position of judges be changed. It is imperative to adhere to serving trial subjects, focus on the long-term development, speed up the transformation and improvement of the application of artificial intelligence in trials, and achieve a higher level of digital justice.

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