

Predictive Justice and the Age of Artificial Intelligence

العدالة التنبؤية وعصر الذكاء الاصطناعي

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Abstract:

Artificial intelligence is more than just a legal technology Therefore, the use of artificial intelligence in law will be a very rapid momentary development and not a revolution, and the integration of artificial intelligence into the systems and processes of some judicial systems, so far experimental but at the same time with rapid instantaneous development, so the first adopters will have a great advantage over judicial systems, bodies and institutions that have been late in adopting technology. Where judges, bodies and institutions that did not participate in the transition towards artificial intelligence will be left behind and these will pay the bill for the delay of their presence in the field of law or not at every moment robots develop, and in the end they will be displaced from the field of law, artificial intelligence will change the way judges think, the way they practice their work and the way they interact with their cases, but how is that???

Keywords: justice; artificial intelligence; robot; technology; algorithm; judge; prediction.

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Introduction

In its simplest form, artificial intelligence¹ is the development and use of computer programs that perform tasks that normally require human intelligence. At this time and in the foreseeable future, the current AI capabilities only allow computers to approach, achieve, or surpass certain human cognitive functions. While some researchers are working on developing computers that can match or surpass the human mind, which is sometimes referred to as "general intelligence" or "intelligence" Superhero", this achievement is likely decades away. That is why important legal skills based on human judgment, reasoning, common sense, interpersonal skills and experience will still be valuable as they are human. While AI has many traits for many of its different applications, there are two of the most important traits for legal applications.

First, machine learning is the ability of computers to teach themselves and learn from experience. This means that AI can do more than blindly commit to what it is programmed for, but it can learn from experience and data to continuously improve its capabilities. This is how Google's Deep Mind system managed to defeat the best Go players in the world.

Second, natural language processing is the ability of computers to understand the meaning of spoken or written human speech and to apply and integrate this understanding to perform human-like analysis.

AI is rapidly being applied to all key sectors of the economy and society, including medicine, finance, defense, transportation, industry, media, arts and entertainment, and social relations, to name a few. Many of these applications will create new legal issues for judges and lawyers, such as self-driving car liability issues, the legality of lethal autonomous weapons, financial robots that may conflict with antitrust laws, and the safety of medical robots. But in addition to changing the subject that all legal professionals care about, it will also change the way they practice their profession..

Search problem:

Artificial intelligence is more than just a legal technology, and therefore, the use of artificial intelligence in law will be a very rapid momentary development and not a revolution, and the integration of artificial intelligence into the systems and processes of some judicial systems, so far experimental but at the same time with rapid instantaneous development, so the first adopters will have a great advantage over judicial systems, bodies and institutions that have been late in adopting technology. Where judges, bodies and institutions that did not participate in the transition towards artificial intelligence will be left behind and these will pay the bill for the delay of their presence in the field of law or not at every moment robots develop, and in the end they will be displaced from the field of law, artificial intelligence will change the way judges think, the way they practice their work and the way they interact with their cases, but how is that???

Research Methodology:

We will use the descriptive approach in its inductive and analytical scientific way to present the important points raised by the subject of the book.

Research Plan:

Based on the above, we will present the impact of artificial intelligence on justice as follows:

Firstly: Artificial intelligence and the future of justice

Artificial intelligence² (artificial intelligence) is just beginning to emerge on its own in terms of its use by lawyers and within the legal profession. What is the impact of this technology on judges and lawyers? Within the next few years, we will find ourselves on the cusp of a revolution in the practice of law led by the adoption of artificial intelligence – in particular, by judges and lawyers. Just as email has changed the way we do business every day, AI will become ubiquitous – an indispensable helper. About him for almost every judge and lawyer³. Those who do not embrace change will be left behind. Those who do will eventually find themselves bystanders to do the two things that always seem to have little time for: thinking and advising.⁴

Technology⁵ is woven into our daily lives. It is the present and the future, and the courts, as essential public institutions, need to take a leading role in the responsible implementation of technology in law. And in legal practice, with a particular focus on solving problems and facilitating the fair resolution of disputes in a quick and inexpensive manner, while maintaining the essential humanitarian character of the courts. Absorption technology is not about the use of buzzwords. Digitization invades all areas of our lives, including the judiciary. Technology is already changing the practice of law and may reshape the governance process by either replacing, supporting, or supplementing the judicial role. It is impossible to imagine everyday legal life without electronic legal transactions, electronically managed land and corporate registries, decree file or the possibility of submitting summaries to the courts in electronic form, and in the future AI integration will increase and changes may limit the extent to which humans participate in governance with an increasing focus on AI to deal with smaller civil disputes and the more routine use of relevant technologies in more complex disputes.

Artificial intelligence usually means creating complex algorithms that predict the outcome of operations or identify patterns. AI is certainly not the only technical tool that should be considered to improve the administration of justice.

Predictive justice is an algorithm-based artificial intelligence technology associated with mathematical tools that analyzes large sets of court decisions in order to assess the chances of winning a trial and estimate certain types of lawsuits. In fact, the digital transformation of society has influenced the evolution of predictive justice and some countries seem to have already developed it with concrete practical applications.

It is well known that any judicial decision must be made by a human, not a robot. In this context, special emphasis should be placed on the constitution, which

guarantees the independence of the judge, as artificial intelligence connects data and makes decisions based on algorithms and probabilities. But the algorithms that power AI are programmed by engineers. So who is responsible for AI decisions? Judge? Eng? Especially if the algorithm is not revealed, it will be difficult or impossible to understand, question, verify or control a decision made solely by AI. Even if the judge only uses the AI tool in a supportive capacity, how can he evaluate the AI results if he does not understand how the AI-assisted software came to his decision? Moreover, AI is mostly a self-learning system and therefore constantly evolving, but it is only a good system as basic training data. If you learn AI based on misleading views or past erroneous court decisions, these methodological errors will be reflected in future AI decisions. AI, for example, may recognize the credibility of witnesses based on objective features such as accurate facial expressions and are therefore less likely to be guided by subjective impressions, but – apart from raising potential new data protection issues – value judgments are legitimate and essential parts of our current legal system. Accordingly, free evaluation of evidence by a judge in civil proceedings is highly valued. If the jurisdiction of judicial decision-making were transferred entirely to AI, the individuality needed to make a decision on a case-by-case basis would be lost, and legal development would stop. One of the primary issues is whether a computer program or automated process has the legal authority to make the decisions of a human judge, and who has the legal authority to make such a decision. Is it a computer programmer, a policy maker, a human decision maker, a computer or the automated system itself? The most worrying use of AI is to advise judges on bail and sentencing decisions, and criminal judges in many countries use similar AI tools to assess the risk of defendants or convicted persons returning to crime in decisions related to pretrial detention, sentencing or early release.

1. Ethical Principles for the Use of Artificial Intelligence

"The standards of efficiency and cost savings derived from the use of AI cannot take precedence over respect and protection because of people's rights." These are the words of the European Bar Council⁶ (CCBE, abbreviated in English) which was concerned at the beginning of 2020 about the possible legal aspects of implementing tools that use artificial intelligence in justice.⁷ To evaluate this document and the steps to take in this regard, technology is one thing, but how we can and must work with it, in practice, and it is still hotly debated, and there are already more than 25 documents of ethical principles for the use of artificial intelligence, including those of the Institute of Electrical and Electronics Engineers (IEEE), the European Union and the Council of Europe. andThe Council of Europe's Justice Efficiency Committee has addressed this issue. The Centre's Quality Task Force has developed ethical principles for the use of artificial intelligence in the administration of justice. CEPEJ adopted in December 2018. These five "ethical principles" overlap here and there and the conclusion was "competence cannot take precedence over legitimacy" as follows:

1 Respect fundamental rights. Ensure that the design and implementation of AI services and tools are compatible with fundamental rights such as privacy, equal treatment and fair trial.

2 Equal treatment. Avoid discrimination between individuals and groups of individuals. The example of Compass above shows that discrimination and unjustified discrimination between individuals and groups pose a real danger. The data used by the algorithm may be the cause, and bias may also be included in the algorithm itself.

3 Data security. When processing judicial decisions and data, certified sources and data that cannot be changed, with interdisciplinary models in design, must be used in a secure technological environment.

4 Transparency. Data processing methods should be transparent and understandable, and external audits should be allowed. The requirement of transparency is now the established case law. The user of the algorithm must declare the choices made, the data and assumptions used, in a complete, timely and appropriate manner so that these choices, data and assumptions are accessible to third parties. Such complete, timely and appropriate disclosure would make it possible to assess the choices made, data, inferences and assumptions used, so as to ensure effective legal protection against decisions based on those choices, data, inferences and assumptions, with the possibility of judicial review by the courts.

2. Predictive justice

It is the use of technology and statistical and mathematical tools to predict criminal acts and potential crimes, and the use of these predictions in judicial and administrative decision-making.

Predictive justice, or "Predictive justice", is a type of artificial intelligence and statistical analysis technique that is used to predict judicial rulings that may be issued by the judiciary in the near future based on the analytical results of previous data. In predictive justice, data from previous cases and court rulings is used to build mathematical models that can predict the outcome of new cases using All possible factors that can affect the outcome, such as age, gender, occupation, and alleged crime.

In recent years, the world has seen an evolution in artificial intelligence and machine learning technologies, and this has led to the introduction of new solutions in the field of predictive justice. Recent technological advances allow justice systems to analyze historical data of crimes by applying artificial intelligence models, and to anticipate and prevent potential crimes.

Predictive justice is playing an increasing role in the judicial sector, helping to improve efficiency and save time, effort and money in the analysis and processing of judicial data, however, there are also some potential issues related to the quality of expected outcomes in the use of this type of technology.

When predictive justice tools allow for faster and effective legal² and improved outcomes in terms of error and costs, however, these tools are not without flaws and risks.

Moreover, the use of predictive justice can pose a threat to privacy rights, as analytics can leverage individuals' private data and use it to predict their future actions.

But once there is powerful and accurate technology, predictive justice becomes part of the tool of perfect justice, provided it is used correctly and responsibly, employed for the benefit of humanity and justice among all members of society.

3. The use of artificial intelligence in comparative judicial systems

This overview of the use of AI in the legal field is certainly not exhaustive. The goal is to give an idea of what is possible and how AI solutions can affect litigation.

AI is used relatively little in comparative judicial systems: the exception is China and that is as follows: Experiments have been conducted in the European Union to see if AI can make certain legal decisions independently. In France, the courts of Rennes and Deway were used to test a tool called *Predictrice*, which was supposed to automatically determine the amount of compensation and the goal was to achieve clarity and uniformity in the payment of compensation amounts, but the project was terminated because the tool was not able to take into account all the nuances and fairly determine the benefits.¹⁰

In the Netherlands, the e-justice system has developed an artificial intelligence solution that makes its own decision in some types of debt recovery procedures. Studies show that if certain preconditions are met, AI can make autonomous decisions very successfully on a limited scale.¹¹

The United States uses the Compass system to assess recidivism in bail hearings and prison releases, for example. This is a useful example of how careful we are in using AI in the judicial system. AI is trained using previous decisions that the algorithm uses to make discretionary decisions. With COMPAS, they found that the system believes that the return to criminality among blacks is higher than it actually is.¹²

In Australia, they use the Split Up system where AI helps judges in divorce proceedings. AI helps determine which assets to share and in what proportion.¹³

In Finland, the ANOPP project has developed tools for automatic anonymization, pseudonyms as well as content descriptions to make court rulings accessible to the public.¹⁴ It is important to mention here that personal data in court rulings is automatically anonymized in Estonia as well. Although it doesn't use AI in Estonia for this, it's still a good example of automation capabilities.

The People's Republic of China is ahead of others in the use of artificial intelligence in the courts as the Hebei Supreme Court in China has developed the Smart Trial System 1.0 that helps courts to automatically digitize files, classify documents, search for laws, decisions and related documents, then automatically generate documents (i.e. notifications), and coordinate tasks in the workflow.¹⁵

Beijing's court system uses the Xiaofa robot that is capable of answering 40,000 litigation questions and can handle 30,000 legal problems. There are more than a hundred robots working in Chinese courts to help them in various cases.¹⁶ In 2017, an electronic court was established in Hangzhou where citizens can turn to the electronic court through WeChat (a popular messaging app) and the court session is powered by artificial intelligence via video chat with all parties involved. Cyber courts have jurisdiction over online commercial disputes, copyright, and liability issues for online store products. Will be coming soon A similar electronic court opens in other cities. In total, these cyber courts have conducted more than 3,000,000 legal proceedings, received about 120,000 lawsuits and issued judgments in nearly 90,000 matters (as of the end of 2019).¹⁷ Courts can also use machine learning to their advantage in completely different ways. If AI is able to read detailed information in court decisions, it can also analyze unintentional bias. Each decision or logic of a judge can be put in context (taking into account the circumstances) to see if a judge's decisions differ statistically significantly from those of other judges. Bias can also be verified at other parties: for example, whether suspects with certain characteristics are treated differently or whether requests by lawyers of one sex or another are often rejected, etc.

AI is used on a much larger scale in the private sector than by the courts. Although AI solutions created for the private sector cannot directly help make the work of courts more efficient, they affect the work of courts.

One area where AI is used is predictions. The researchers predicted rulings from the European Court of Human Rights with 79 percent accuracy and U.S. Supreme Court rulings with 70 percent accuracy.¹⁸ Canadian startup Blue J claims it can predict court rulings on taxes with 90 percent accuracy.¹⁹ While the previous examples are simply academically interesting facts, the private sector has used the predictions made by AI to its advantage. Companies like Rafil, Lex Machina, and Bloomberg Law predict not only the outcome of court matters, but also the behavior of the parties involved more specifically, such as how a particular judge interacts with a particular type of matter or party to the procedure.

The private sector has used artificial intelligence to make its work more efficient. Ross Intelligence offers a legal analysis service that reviews legal documents. Bloomberg Law not only makes predictions, but also offers intelligent searches, automated document classification, and intelligent workflow management. Their product analyzes Points of Law Drafting court rulings and makes recommendations on how the lawyer drafts legal documents. In certain types of disputes where recourse to the courts was common in the past, there may be out-of-court platforms where disputes are settled and where a solution called Wevorce offers a service that arranges divorces and also assists in the process of dividing assets.

In England, Keogh Solicitors and St John's Buildings Barrister's Chambers have created a fully automated system for insurance companies and lawyers to deal with health problems caused by traffic accidents. The system initiates the procedure

digitally and decides the type of litigation.²⁰ Both solutions use artificial intelligence, which has helped make their solutions more efficient and competitive. With the help of artificial intelligence, it is possible to automate some processes to make going to court much easier and cheaper. For example, 19-year-old Joshua Browder has developed the DoNotPay app, which helps people challenge parking fines quickly and easily. The AI uses a simple user interface to ask the contestant's questions and then make recommendations. In just over a year, DoNotPay has received 250,000 matters, of which 160,000 have been cancelled (and four million dollar parking fines have not been received).²¹ Now, DoNotPay has grown into a smart artificial lawyer that allows you to sue people in several areas at the touch of a button.

In England and Wales, parking fines and other fees can be appealed online²²: The LawGeex project also shows the undeniable potential of AI. They had an AI competing with 20 professional lawyers. The task was to review five secret contracts in four hours and identify threats to the client. The AI solution did not see confidentiality agreements but was trained to identify threats using Machine learning and tens of thousands of other confidentiality agreements. The lawyers took 92 minutes to work through the five decades and identified an average of 85 percent of threats (their best result was 94 percent). AI worked through the five decades in 26 seconds and identified 94 percent of threats.²³ Against the background of the global practice described above, it is useful to continue to reflect on whether, under certain and limited circumstances, an AI judge can make independent decisions.

Secondly :How will justice be in the presence of the judge robot in the courtroom?! And what is the role of human beings in the field of law in the future?!

Currently, the use of robotics and artificial intelligence in justice is still only a vision for the future, and despite the development of technology in this direction, the use of robotics and artificial intelligence in justice is expected to take some time.

If a system in which the judge and lawyer use the robot is adopted, this will lead to radical changes in the shape and functioning of the courts, for example, the court can include huge display screens and modern equipment to manage a particular case, and there is a need to develop smart software and systems to enable these robots to understand the court and deal with many complex legal situations.

Of course, humans have to continue to play an important role in the processes of investigating and disseminating justice, as a lawyer may be appointed to preside over the arbitrator or a bailiff, and they may be responsible for reviewing and monitoring the robot system. Human beings can deal with upcoming problems of law, such as negotiations, negotiation, pleading, severance of proceedings and debates, making them partners in important human functions in the field of justice.

1. The Future of Predictive Justice

Justice and law are among the most important aspects of community life, and current technology is developing many systems and software capable of supporting this field, therefore, it can be considered the foundations for the future of predictive justice and robot lawyer.

The future of predictive justice depends on the effective use of artificial intelligence (AI), graphical analysis techniques and big data. For example, modern systems and software can be used to predict the impact of legal situations and guide the most appropriate and effective decisions. In addition, graphical analysis can be used to identify possible curves of legal events and discuss them with victims, experts and court judges. The use of big data technologies may help improve understanding of the law and control Developments related to specific issues.

For courts and other judicial sources, the development of means of improving communication between court judges and users (lawyers and private lawyers) will have a positive impact on the predictive justice process and the more effective management of legal cases.

Conclusion

The use of predictive justice helps to improve the performance of justice and the provision of advanced, more effective and efficient legal services, and this development requires several factors, including the provision of information and support for the required technology, showing more attention to training programs related to technological capabilities, and ensuring that the quality, reliability, financial or cultural credit of justice and law issues are not affected. Therefore, any attempt to develop a robot lawyer and predictive justice should be comfortable for humans and easy to adapt to his ideas.

The development and use of AI are limited in terms of data, algorithms and implementation, but the development and use of AI algorithms is constrained by a lack of easily accessible data and analysis. Data sets may be deliberately manipulated or corrupted to obtain unfair analytics, and significant concerns may also arise about data privacy²⁴ and cybersecurity²⁵ with the use of vast amounts of data by AI systems.²⁶

Artificial intelligence "is not a completely new phenomenon, and the legal industry has been using artificial intelligence in the litigation discovery process for nearly 10 years", and artificial intelligence has already made its way into the legal profession through legal research, contract review, management, document review, forecasting legal outcomes, and more. The use of artificial intelligence in the legal profession with everything organized in digital form, and artificial intelligence allows litigants to organize, interconnect, and search for relevant information in much more effective ways than manual review of paper documents allows..

Moreover, AI "helps legal researchers discover documents they could not previously find and more easily identify similarities between court opinions. This is in addition to the ability to analyze millions of legal data points, efficiently all at the

push of a button. AI can also provide you with information you didn't even know to search for..

As for the legal applications of AI ²¹ that will become popular in the short term, it seems that the most famous benefit of AI tools in legal practice is to improve efficiency, as the AI program uses algorithms that speed up document processing while detecting errors and proposing many solutions to them.

Results:

After we presented the justice of algorithms in terms of the benefits of artificial intelligence and its importance for the legal profession and the beginnings of the emergence of the judge robot, and the lawyer robot, this resulted in a number of results that we have already referred to, as well as a number of recommendations, the most important of which will be presented as follows:

1. The field of law is not immune to developments in artificial intelligence We may be about to make a big leap forward as artificial intelligence deals with most of the ordinary aspects of legal work at a faster and more accurate rate .

2. It seems that the most famous benefit of artificial intelligence tools in legal practice is to improve efficiency as the AI program uses algorithms that speed up document processing while detecting errors and other problems. .

3. AI is now starting to make its mark in other legal fields. Chatbots are able to screen potential customers, learn about their requirements and even provide basic legal advice – a great help for those who can't afford it.

4. For some legal matters, there may be no choice but to benefit from human expertise, but other processes and services will be greatly enhanced by AI.

Recommendations:

1. Ensure that the design and implementation of AI services and tools in the field of law are compatible with fundamental rights such as privacy, equal treatment and fair trial.

2. When processing judicial decisions and data, certified sources and data that cannot be changed, with interdisciplinary models in design, must be used in a secure technological environment.

3. Data processing methods should be transparent and understandable and external audits should be allowed.

4. The user of the algorithm must announce the choices made, the data and assumptions used, in a complete and timely manner so that these choices, statements and assumptions are accessible to third parties to ensure effective legal protection from decisions based on those choices, data, inferences and assumptions, with the possibility of judicial review by the courts.

Margins:

¹ <https://www.documentcrunch.com/ai-news-artificial-intelligence-and-the-future-of-legal-practice.html>

² <https://legal.thomsonreuters.com/en/insights/articles/ai-and-its-impact-on-legal-technology>

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⁴ <https://www.forbes.com/sites/bernardmarr/2020/01/17/the-future-of-lawyers-legal-tech-ai-big-data-and-online-courts/?sh=6fb83bb9f8c4>

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⁸ See Artificial Intelligence: How Algorithms Make Systems Smart, *Wired* (last updated May 25, 2018) <https://www.wired.com/insights/2014/09/artificial-intelligence-algorithms-2/> ("Instead of just following explicitly programmed instructions, some computer algorithms are designed to allow computers to learn on their own (i.e., facilitate machine learning)."); AI algorithms: everything you need His knowledge, *Eureka* (November 25, 2020) <https://www.edureka.co/blog/artificial-intelligence-algorithms> ("In general, the algorithm takes some input and uses mathematics and logic to produce output. In stark contrast, the AI algorithm takes a combination of the two – inputs and outputs simultaneously in order to "learn" data and produce output when new inputs are given.

⁹ [https://www.elyamnelaraby.com/483020/%D8%A7%D9%84%D8%B0%D9%83%D8%A7%D8%A1-](https://www.elyamnelaraby.com/483020/%D8%A7%D9%84%D8%B0%D9%83%D8%A7%D8%A1-%D8%A7%D9%84%D8%A7%D8%B5%D8%B7%D9%86%D8%A7%D8%B9%D9%8A-)

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¹³ <https://medium.com/legal-design-and-innovation/ai-goes-to-court-the-growing-landscape-of-ai-for-access-to-justice-3f58aca4306f>.

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¹⁶ Can AI replace a court judge?:

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¹⁸ (op. cit.: 3).

¹⁹ See also: <https://www.bluejlegal.com/>.

²⁰ Technology Outlook 2020 – Impact of AI in the Legal Sector::<https://www.itproportal.com/features/technology-predictions-for-2020-the-impact-of-ai-in-the-legal-sector/>.

²¹ <https://www.theguardian.com/technology/2016/jun/28/chatbot-ai-lawyer-donotpay-parking-tickets-london-new-york>.

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