# Artificial Intelligence (AI) in Judiciary Processes: Between Wild Solutions in the Digital Age and the Irony of Justice Opportunities

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**ABSTRACT:** Artificial intelligence (AI) is increasingly being integrated into various areas of law and justice that reflecting technological advances. This research is a literature study taken from books and articles covering the period 2000 to 2023, to answer crucial problems related to the application of AI in the judiciary and its influence on the meaning of justice. The paper also combines current field observations and future predictions regarding AI on the trials system. In practical terms, AI has the potential to influence the trial process, starting from pre-trial administrative tasks, the trial process, and post-trial, namely rehabilitation efforts for all parties involved. Additionally, AI may introduce alternative testing approaches, aimed at ensuring fair and unbiased decisions. However, the application of AI is controversial, especially due to the lack of understanding among stakeholders regarding its potential implications in legal processes. It is important to establish guidelines to regulate the use of AI, explaining its limitations within the justice system. Continued research is essential to understand and effectively address this issue. In summary, AI does not completely replace human involvement but rather complements it, intending to provide mutual convenience and practicality in achieving cost-effective, efficient, and fair justice for all parties involved in legal conflicts.

**KEYWORDS:** Artificial Intelligence; judiciary; justice; digital age; technological developments.

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## I.   INTRODUCTION

When talked about technology and informatics (IT), the significant developments are dominated by AI (Artificial Intelligence). AI is about a system that is programmed to think and behave like a human. This system also functioned as an organizer and processor of data or information. The AI domain has potentially assist humans to completing their tasks in accordance with the fields that humans interests. The application of AI that is known today is simply AI that plays chess with Tesla cars controlled by AI. Basically, AI is instructed by humans to manage in certain fields according to deep learning and natural language processing. By using this technology, computers can process data and recognize patterns to be trained to complete certain tasks.[1]

The application of AI in all parts of the world is inevitable. In the medical field, image classification and object recognition are used to find cancer on MRI (Magnetic Resonance Imaging)[2] with the accuracy of experienced radiologists. In daily life, many people also use AI to manage systems in their homes. Several control devices in residential homes can "communicate" with smartwatches, currently still a smart home concept. Even so, several smart home-supporting products such as vacuum cleaners, doorbells, lightning protection systems, and others can be found on the market. According to the International Data Corporation (IDC), the smart home device market is increasing by more than 10% per year, and in 2021 a total of 895 million devices will be sold.[3]

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[1] P H Winston, Artificial Intelligence (London: Addison-Wesley Longman Publishing Co., 1992).

[2] M A (Ed) Boden, Artificial intelligence (Elsevier, 1996).

[3] IDC TRACKERS, "Worldwide Smart Home Devices Market Grew 11.7% in 2021 with Double-Digit Growth Forecast Through 2026, According to IDC", (2022).

Indeed, The integration of AI into homes that are already considered "smart" presents both challenges and opportunities that researchers and the smart home industry are currently facing. Artificial intelligence means greater automation in smart homes. Since the whole idea of connected objects is to make life easier, more automation sounds great. Additionally, AI can make life in a smart home more enjoyable.[4] The AI system can "learn" your moods and preferences, as well as analyze your interactions with home objects. With such knowledge, he can adjust the temperature for heating and cooling, adjust the lighting, play the music you like, and close or open the windows depending on the weather. This technology can also carry out machine learning which can water plants when the sensor says the soil is dry and start the vacuum cleaner on certain days and at certain times.

In the field of marketing, AI plays an important role in the process of direct marketing to enthusiasts of a particular item. They are designed with a fast, accurate, and tireless system in marketing certain goods.[5] Of course, this is an advantage for businessmen in running their businesses to reap much greater profits and minimize conflict, especially with the recruitment of employees in the process of marketing their products. In fact, even in the industrial sector, thanks to the integration of AI, this system can transform industry into mass reform. This is due to the role of AI in revolutionizing the way things work in various industrial sectors. AI techniques and methods that include machine learning, deep learning, inferential logic, natural language processing, pattern recognition, and robotics are able to accelerate productions.[6] Because AI is a system developed by humans, specifically designed with very thorough supervision and testing, therefore AI can be considered reliable, including in the legal sector.

As expressed by Herclicticus, nothing endures but change, which means that in this world nothing remains unchanged except change itself. Likewise the need for court services, along with the times, the judiciary should continue to evolve to adapt to changing times. Absolutely with the goal of the common good; achieving enforcement of justice based on time

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[4] Yajing Zhang Guo, Xiao, Zhenjiang Shen, "Review on the application of artificial intelligence in smart homes" (2019) 2:3 Smart Cities 402–420.

[5] Hang Su Bo Zhang , Jun Zhu, "Toward the third generation artificial intelligence" (2023) 66:2 Science China Information Sciences 121101.

[6] John McCarthy, "From here to human-level AI" (2007) 171:18 Artificial Intelligence 1174–1182.

efficiency.[7] In the trial system, the international judiciary has evaluated and attempted to reform judiciary system through the International Framework for Court Excellence, which is a quality management system designed to help courts improve their performance. This system is a comprehensive approach to achieving superior courts. This framework is a continuous improvement methodology that guides the court's journey towards becoming a court of excellence by ensuring the court actively and continuously reviews its performance as well as seeks ways to improve its performance.

Actually, the utilization of the International Framework for Court Excellence in judicial reform primarily focuses on enhancing services for individuals involved in legal conflicts. This system seeks only to focus on certain aspects of court governance, management, or operations. This indeed helps the public in dealing with disputes, and cases, or assisting them in facing the law. Even in some country, such as in Indonesia, changes have been made in the service section of case information, reflecting efforts to improve the overall judicial system. The public can easily find the case information through the website the Directory of Supreme Court Decisions by their own. Undoubtedly, AI continues to play a pivotal role in updating and enhancing such sectors.

Departing from the portrait of renewal of the Supreme Court, the direction of digitalization-based reform by the Supreme Court is focused on the following areas: Case Management Update, Technical Function Update, Research and Development Function Update, Human Resource Management Update, Education and Training System Update, Budget Management Update, Asset Management Update, Information Technology Update, Oversight System Update, and Information Disclosure System Update.[8] From this, it can be seen that the intended updates have departed from previously the public had to go directly to the field in the pre-trial process until it was finished, currently some have been modified digitally based on the role of AI.

This phenomenon is one of the major breakthroughs for the community in the field of justice so that the process of achieving justice

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[7] Dariusz Świetlik Ossowska, Agata, Aida Kusiak, "Artificial intelligence in dentistry—Narrative review" (2022) 19:6 International journal of environmental research and public health 3449.

[8] J H Fetzer J H Fetzer, What is Artificial Intelligence? (Netherlands: Springer, 1990).

becomes easier. The emergence of AI-based technology is very controversial among mankind. This is marked by more than 1,000 researchers and technology experts who are grappling around the world of AI or Artificial Intelligence who have signed an Open Letter stating that the presence of increasingly sophisticated AI developments will also present major risks for humans.[9]

First, AI, which has the characteristics of a tireless, accurate, and efficient system in its work, has made several sectors, especially in the industrial world, have chosen AI to be a substitute for human work. In fact, complex algorithms created from within AI can produce extraordinary masterpieces. Of course, the Intellectual Property Rights of a work that was born from AI are perfectly legal to be taken or recognized by humans. Ironically, it is predicted that 14 million workers in the world will be unemployed because of the sophistication of AI.

Additionally, AI can become human replicas—actually exact replicas, in terms of faces, facial expressions, voices, and more. This has been proven and caused an uproar because of the viral sound of the President of Indonesia singing the song Asmalibrasi. This of course will invite hoaxes or slander that are widely circulated.[10] The last, in the long term, there is possibility that AI may be able to develop its own capabilities or exhibit desires. This means that it is impossible for AI to act of its own free will which has the potential to threaten or conflict with the interests of humanity. In the long term, AI can work alone outside of the commands or algorithms of its creator. Predictions are far away, perhaps from this, AI will threaten human existence.

Some ordinary people circulating in Twitter tweets and several TikTok videos say that AI is even that terrible, even more terrible than nuclear. Their speculation is grounded in the increasing sophistication of AI technology, although it may seem somewhat speculative or irrational at present. AI can work effectively on paper as humans. Predictably, humans and AI will be competing in the future. Furthermore, even though humans are capable of carrying out writing tasks, they are prone to making mistakes. In contrast, AI has the potential to perform these tasks perfectly. Finally,

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[9] Luke Butler Yigitcanlar, Tan, Kevin C Desouza, "Contributions and risks of artificial intelligence (AI) in building smarter cities: Insights from a systematic review of the literature" (2020) 13:6 Energies 1473.

[10] W Ertel, Introduction to artificial intelligence (2018).

humans will rely on AI in all job sectors. The next very extraordinary impact that can occur is that human intelligence will lose to AI intelligence.

## II.  METHODS

The author aims to find out how far AI is currently working and the contributions and controversies brought by AI in the realm of law. The method chosen by the author which is specifically devoted to explaining and answering questions related to the opportunities and challenges of AI in the judiciary is a descriptive method based on several literature sources (library research).[11] The author describes facts on the ground at this time to future predictions related to AI. Next, the author describes important points in the subject matter,[12] namely related to AI opportunities in the world of justice and challenges that will be faced by humans, in the realm of justice.

## III.  DISCUSSION
### A.  AI Replaces the Role of Humans in the Judiciary Table

Within the scope of justice, it will then be discussed about important figures in the course of justice. If many countries have implemented administrative systems related to pre-trial and post-trial in court,[13] then this is different, this time the discussion regarding the replacement of 'human' with 'AI' in the 'process of trying' a case. Of course, this is closely related to Judges, Lawyers, Public Prosecutors, and others.

First, it should be noted that in court, there are important points that are a goal that must be achieved: examining, adjudicating, and deciding a dispute or case. So, it is important for a justice system to be within the state; later will determine the extent to which the quality of a country's 'fair'. Discussing the sophistication of AI, this system works based on techniques and methods applied by humans. Therefore, the more thorough and frequent, this will increase the accuracy of the AI itself. For example, by using a camera, with the role of AI, we can catch things that are not known then AI

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[11] Sholahuddin Al-Fatih, Perkembangan Metode Penelitian Hukum di Indonesia, 1st ed (Malang: UMM Press, 2023).

[12] Sholahuddin Al-Fatih & Ahmad Siboy, Menulis Artikel Karya Ilmiah Hukum di Jurnal Nasional dan Internasional Bereputasi (Malang: Inteligensia Media, 2021).

[13] JR KEARL, "After eBay: Valid Patents and the Economics of Post-Trial Judicial Options" (2023) 4 Utah Law Review 7.

will explain that accurately and then explain the explanation. Similar to cameras and search engines as forms of AI, other and similar types of AI are predicted to have an effect on the progress of justice.[14]

If a judge were to be replaced by an AI system, this might seem odd. However, Raaikmakers says that this is good enough to replace judges with AI instead of humans whose nature has the potential to choose subjective options in their decisions. Technically, AI has many advantages, such as, because it is a machine, AI will not tire easily; because it is a system, AI will be fair and just in practice; because it is tested and monitored by humans too, the algorithm that is formed will be much more perfect. This will bring accuracy and keep away error or falseness in thinking.[15]

Lawyers replaced by AI will also be very helpful because a system might be able to find loopholes even if the one being defended is wrong. Robots will also think more creatively in imposing punishments or offering something more solutive. Again, this is because AI is a system where when the algorithm is stacked, the system will look for the best thing that can be used as an option. In this case, we can refer to Google Maps as a reflection of AI,[16] where they can direct us to the nearest, fastest direction, and even, they can tell us which road is currently congested with different coloring indicators.

In court, the series of processes are quite long, and a judge holds the final decision that is most decisive. In the end, all parties involved in a case or dispute will end up being determined by the Judge. Of course, in this case, it is hoped that a person can provide justice in his decision. The sender himself must be an authoritative person in conveying his decision, logically and considering the impact of the decision. Therefore, not everyone can be a Judge. Becoming a judge must have its own criteria. However, this also varies from country to country.[17]

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[14] Harry Surden, "Artificial Intelligence and Law: An Overview" (2019) 35:4 Georgia State University Law Review 25–34, online: <https://readingroom.law.gsu.edu/gsulr/vol35/iss4/8>.

[15] S Raaijmakers, "Artificial intelligence for law enforcement: challenges and opportunities" (2019) 15:5 IEEE security & privacy 74–77.

[16] AI knowledge map: How to classify AI technologies, by Francesco Corea (2019).

[17] et al Floris Bex, "Introduction to the special issue on Artificial Intelligence for Justice (AI4J)" (2017) 25 Artificial Intelligence and Law 1–3.

When viewed from the American principle in selecting judges,[18] the public participates in the election. Their regulations assume that judges elected by the people can prioritize a sense of justice in society. In elections, the US public in several states usually not only elect the president but also elect judges directly. There are at least several ways in America other than elections to determine which judges are appointed. Judges are appointed by the State Governor or local legislature. In addition, there is a commission of jurists who recommends several judges to be elected by the governor or parliament. This election system by the people creates a stereotype for judges to make more and more decisions that lead to mutual justice for the community. So that if at any time they make a wrong decision that is far from justice for the people, then they will not be re-elected. This is a step so that judges make decisions that are responsive to the concern, sensitivity, and sympathy of the community so that whatever decision they make will be carefully considered for each case.[19]

Therefore, if you look at the role of society and its implications or correlation with judges, when we apply AI as a full substitute for judges, of course, this will invite more disorder. Society is no longer needed to uphold justice. Society is also no longer a reference for normative consideration of justice, but an algorithm formed by humans or groups of humans who may have an interest in legal coffers. Those behind the AI they have created themselves have the potential to become controllers of justice. This potential will lead to the supreme oligarchy, where regulations are governed, managed, and created by them alone. This is also because they make decisions for every case or dispute they judge through the AI.[20]

Another controversy is that it is impossible for AI to completely replace a profession. This is because there is an ambiguous thought from many people that maybe AI can steal human jobs. So, from this, AI can just steal justice for humans.[21] Meanwhile, justice is the soul of humans in social

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[18] Miriam Seifter Jessica Bulman-Pozen, "Countering the New Election Subversion: The Democracy Principle and the Role of State Courts" (2022) Wis L Rev 1337.

[19] A Završnik, "Criminal justice, artificial intelligence systems, and human rights" (2020) 20:4 In ERA forum 567–583.

[20] C Rigano, "Using artificial intelligence to address criminal justice needs" (2019) 280:17 National Institute of Justice Journal 1–10.

[21] Garry Kasparov De Cremer, David, "AI should augment human intelligence, not replace it" (2021) 18 Harvard Business Review 1.

life. Justice is also part of human nature: Human Rights. In the medical world, there is AI that plays a role in the process of diagnosing diseases which will then affect the efficiency or speed of a patient's recovery from an illness. Of course, from this, it is impossible for us to say that AI will serve as a substitute for the Doctor. The existence of AI actually functions as a human helper so that human work is simpler, faster, and more efficient.[22]

## B. AI Opportunity: A Wild Thought

We need to know that at this time cybercrime is rife. Criminal crimes through cyberspace are often shocking because the losses made by cases like this are not half-hearted. By 2022, cyberattacks increased by 38% according to Check Point research, further adding to the 300% growth seen in 2020, with i-Gaming and e-commerce businesses being the main targets. Another thought makes AI has a place in law. AI can play a role as important as the Police, Judges, and maybe even lawyers.[23]

Cybercrime is a form of exploitation of AI where AI will help cybercriminals in carrying out their actions for their own interests, instead, AI should also be used as a means of upholding justice for cybercrime. That is, AI should be the answer to the anxiety caused by cybercrime. For example, by making it specifically for cyber police so that cyber police do not contain humans but also AI which can later detect who the perpetrators are from identities that tend to be anonymous from cybercriminals. In this case, AI will be very useful for uncovering the mastermind behind a cybercrime case.

The controversy that occurs when AI enters the world of law means that AI can also be the answer to anxiety in cybercrime. A large organization, like a reputable company that is related or will be related to a lot of people, also needs to prioritize cyber security training for employees, because human errors and compromised credentials are common causes of cyberattacks. It can be seen from Verizon's 2022 Data Breach Investigation Report, that

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[22] et al Yalcin Acikgoz, "Justice perceptions of artificial intelligence in selection" (2020) 28:4 International Journal of Selection and Assessment 399–416.

[23] C Velasco, "Cybercrime and Artificial Intelligence. An overview of the work of international organizations on criminal justice and the international applicable instruments" (2022) 23:1 In ERA Forum 109–126.

human error is responsible for a massive 82% of data breaches.[24] Therefore, large organizations, including governments need to include training on how to identify phishing emails[25], create strong passwords, and effectively use security software.

However, cybercriminals will always be more sophisticated than ever more sophisticated cyber solutions they will exploit any means to make profits for themselves through the cyber world. If AI has been designed in such a way but cybercriminals are still able to carry out their actions, then in the realm of law, space can be made for cyberspace justice. The space for AI in this law is of course a specialty in criminal law in the future. This space briefly consists of AI Judges[26], cyber police, and other required systems. Thus cybercrime cases will be resolved soon. Moreover, we know for ourselves that cybercriminals are anonymous. Moreover, every case they handle is international in nature. This is based on cyberspace not being limited by space and time, and its reach will be very broad. Cyber police[27] will continue to receive reports or patrol until they find the mastermind of a case. Then the Judge decides what punishment can be imposed by the cyber offender. It could be said, in this sense, that AI is courting other AI.

Answering the AI problem that threatens the judiciary, namely regarding Deep Fake[28], of course, there is an opportunity for AI to participate in the world of justice. If evidence is found that indicates an engineering from Deep Fake, then of course the judiciary should be able to overcome this by creating a detection AI. AI detects this accuracy not only for one piece of

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[24] et al M Z Siddiqui, "Application of artificial intelligence in fighting against cyber crimes: a review" (2018) 9:2 Int J Adv Res Comput Sci 118–122.

[25] Phishing is a criminal activity using social engineering techniques. Phishers (the term for phishing criminals) attempt to fraudulently obtain sensitive information, such as usernames, passwords, and credit card details, by posing as trusted entities in electronic communications. See Agata McCormac Parsons, Kathryn, "The design of phishing studies: Challenges for researchers" (2015) 52 Computers & Security 194–206.

[26] Zichun Xu, "Human Judges in the era of artificial intelligence: challenges and opportunities" (2022) 36:1 Applied Artificial Intelligence 2013652.

[27] David S Wall, "Policing cybercrimes: Situating the public police in networks of security within cyberspace" (2007) 8:2 Police practice and research 183–205.

[28] Deepfakes is a generative adversarial network technology that relies on neural networks by analyzing large data samples to imitate human facial expressions, behavior, voice, and tone of voice. The term deepfake is taken from a combination of the words deep learning, which means deeply designed machine technology, and the word fake, which means fake. The use of facial recognition algorithms and deep learning computer networks is called a variational auto-encoder. See Jianwei Fei Yu, Peipeng, Zhihua Xia, "A survey on deepfake video detection" (2021) 10:6 Iet Biometrics 607–624.

evidence but for all evidence related to a case so that the truth of the evidence can be claimed more. This proof can be considered more accurate because it is not only proven by the judge but also by AI.

So, from AI's opportunities in the world of justice, in short, AI can also become a legal subject. AI can become a legal subject that is held accountable for all its actions. This is based on the consideration that AI can act independently and have a big impact on humans. Even though, when what AI does can create harm to humans, it is still debatable who will be responsible for the loss: AI creators, AI users, or AI itself. Nevertheless, simultaneously the whole world should, in terms of regulation, need to jointly regulate this matter. Back again to the fact, it is not half-hearted, the impact of cybercrime on the strength and sophistication of AI is in the international scope.[29] This challenge is one of several other challenges. Other matters such as Intellectual Property Rights, must also be considered. Later, the Creator of AI must be able to take responsibility for this. For example, if a user abuses AI, then the creator must have a solution to track which user has caused harm to others.

## C. Current AI Challenge Facts

Artificial intelligence is part of technological progress that is impossible to avoid. Various aspects of human life, including the world of justice, are also aspects that are certainly touched by AI. Thus, the judiciary must be able to supervise AI in terms of upholding justice. Even though AI is not a legal subject, there are still many people who tend to think that law enforcement must be replaced by AI. Not without reason, the presence of CHATGPT[30] has shocked the public about self-learning AI, whose sophistication is based on learning by doing. The accuracy of CHATGPT is based on its functionality. The more users who use it, the more accurate and broader its capabilities. This is not a trivial problem; it even indicates that the public is currently experiencing a crisis of trust in law enforcement officials who are touted as the pillars of justice in a country.

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[29] Z Xu, "Human Judges in the era of artificial intelligence: challenges and opportunities" (2022) 36:1 Applied Artificial Intelligence 2013652.

[30] Nigar M Shafiq Surameery and Mohammed Y Shakor, "Use chat gpt to solve programming bugs" (2023) 3:1 International Journal of Information Technology & Computer Engineering (IJITC) 17–22.

The best is to draft legislation in a country; as good as the legislature is at drafting regulations, when law enforcers often work subjectively, the implementation of the law will not be optimal. For example, in Indonesia, the Narcotics Law is well-designed.[31] It includes detailed regulations regarding dealers, users, and so on. However, it is still flawed in practice in the field. Law enforcement also deals with narcotics. Maybe this is only spelled out by individuals, but the implications are long enough to make many people not believe it.

Ironically, people's trust is more in robots or AI, which they think may not have an interest in the world of justice. AI is considered more neutral in acting so it is a suitable means for upholding justice that is not subjective. ai also cannot be bribed because he is also a product that tends not to be greedy in his actions. Nevertheless, adaptation and development of new skills are key in dealing with threats to the human workforce posed by developments in AI. As technology advances and labor market needs change,[32] human workers will need to hone and equip skills that are difficult to replace by AI, such as ongoing education and training, human-AI collaboration, soft skills enhancement, and the creation of new jobs.

## IV.   CONCLUSION

The extraordinary contribution of AI makes all sectors of human life easier and more practical. However, it cannot be denied that the presence of AI brings a lot of controversies, one of which is speculation about the replacement of humans by AI. Moreover, the realm of justice, which is a place for humans to seek justice, must be replaced by the presence of AI or robots. Even so, there are considerable opportunities in the world of justice for the role of AI which makes it easier for humans, especially in checking data, and making correspondence, to public services for people who are in conflict with the law.

In certain contexts, the role of the human being as a whole cannot be replaced but is based on shared convenience and practicality. Thus, the

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[31] Zainab Ompu Jainah, "Law Enforcement Policy Narcotics Crime in Indonesia" (2022) 15:2 Law Enforcement Policy Narcotics Crime in Indonesia 89–99.

[32] Arsyi Manggali Arya Putra, Mohammad Isrok & Nur Putri Hidayah, "Legal Protection of Remote Working Workers in Particular Time Employment Agreements" (2023) 4:1 Audito Comparative Law Journal (ACLJ) 22–30.

challenge for the birth of AI in the world of justice is that its role is maximized to achieve a cost-effective, fast, and practical trial, without reducing the essence of justice for all parties dealing with the law. Another challenge is that the use of AI may even be quite helpful, but keep in mind that normatively, humans are rational beings, produce norms, and refer to norms, so it is important to remember that the realm of justice is not suitable to be completely replaced by human intelligence.

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