

How Artificial Intelligence Can be Useful for Criminal Courts in Indonesia

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Abstract. The development of science has given rise to the idea of an artificial intelligence (AI) judge, who knows everything, without bias or emotion, and is able to decide cases based on the applicable rules. There are many practices of using AI by criminal courts in various countries, this can be a benchmark for Indonesia in developing AI to assist the work of judges. The main objective of this research is to determine the role of AI in assisting criminal court tasks in Indonesia and the challenges that must be considered. This research is normative legal research with statutory and comparative approach as its methodology. The results of this research show that there are many capabilities of AI that can be utilized to make it easier to handle criminal cases in court. However, there are still several issues in AI learning that need attention. This research concludes that the current capabilities of AI are still limited, but the capabilities it currently has are very applicable in several aspects of work in Indonesian criminal courts. The readiness of human resources and the establishment of adequate regulations are important in using AI to assist the work of the courts.

Keywords: Artificial Intelligence, AI Judge, Criminal Court.

1. Introduction

In recent years, academics, practitioners, and policymakers have realized that Artificial Intelligence (AI) is believed to be able to bring a major positive impact on the functioning of courts and especially judicial decision-making. In the judicial domain, technology is often approached as a tool and consequently analyzed within a functional paradigm, focusing on its instrumental nature. However, as Lanzara emphasized, technology is not just a tool, and more nuanced approaches are needed to analyze the impact of ICT applications in judicial institutions.[1]

The development of Artificial Intelligence (AI) has had an impact on the world's criminal justice system. One example of its application is that criminal courts in the United States have used a system called COMPAS, which works using an algorithm to predict the risk of recidivism which then becomes the basis for the judge's consideration in handing down pre-trial detention decisions.[2] On the other hand, China has been aggressively exploring ways to bring AI into the judicial process.[3]

In Indonesia itself, AI has not been widely used to assist judicial work. It is important to elaborate on the opportunities for AI to be used in any field, considering increasingly advanced technological developments. There are several AI capabilities that can be considered for use in criminal courts in Indonesia. First, AI can organize and accommodate information and

documents related to cases, such as the "eDiscovery" system used in criminal courts in the United States, this system is able to filter relevant information. Second, it provides legal considerations to the judge in deciding a criminal case which contains predictions of the final outcome of the case and answers the legal questions given.[4] An example of the "COMPAS" system in criminal courts in the United States previously.[5] Third, become a court assistant as implemented by the criminal court in Shanghai which is called the "206 System". This system can receive verbal commands to display relevant information which then creates trial minutes and identifies the speaker, ascertains a trial fact, identifies evidence, and provides legal considerations.[6]

Therefore, it is necessary to carry out further research regarding how criminal courts in Indonesia have implemented AI in their work system, and whether there are other tasks that can be helped through the application of AI in the criminal court environment in Indonesia. This research also explores the challenges faced in implementing AI in Indonesian criminal courts.

2. Research Method

This research is normative legal research with statutory and comparative approaches as its methodology. Normative research is carried out through analysis of secondary data, namely: statutory regulations, books, journals, and research articles. While the analysis employs a descriptive-analytic approach, the author describes or explains the research subject and object. After the data is acquired, it will be analyzed using qualitative methods.

3. Discussions

3.1. Judge AI in Indonesian Criminal Court

AI is a breakthrough in technology that has an important role today and future. AI has developed very rapidly in the last 20 years, along with the growing need for intelligent devices in industry and households. The use of AI is very widespread in various fields of human life. From learning or perception to playing chess, writing poetry, driving cars, and diagnosing diseases.[7]

The word intelligence comes from the Latin *intellegio* which means "I understand", so the basis of intelligence is the ability to understand and take action.[8] There are several levels of evolution of AI, as described by Nick Bostrom, namely:[9] first, what is called artificial narrow intelligence (ANI) or weak AI, which is designed to complete tasks that are not too complex, for example, Weak AI can be seen in artificial intelligence chess game or on Weak AI car driver. Second, Artificial General Intelligence (AGI) or strong AI can also be called human-level AI, namely living creatures that have abilities equivalent to those of humans; therefore the machine can learn and perform according to human procedures so that it cannot be distinguished from humans. Third, Artificial Super Intelligence (ASI), namely artificial intelligence technology was deliberately created to surpass human abilities. ASI can be defined as any intelligence that exceeds human cognitive performance and occurs in almost all areas of interest.

It cannot be denied that the use of AI in various fields shows a very satisfactory level of success, but it is also worth considering the implications raised by AI. Physicist Stephen Hawking et al. stated that the implications of AI in the short term really depend on who controls it, while in the long term, it depends on whether AI can be controlled or not.[10]

In the world of justice and law, the capabilities of AI give rise to the idea that there will be AI judges in criminal justice in the future. Estonia is one of the countries reported to have developed the use of technology in courts. The Estonian High Court is an institution that preceded the practice of using digital storage and processing of documents for proceedings, they incorporated several technological tools, such as the e-file system and the Court Information System.[11] Estonian innovation in the digitalization of courts attracted world attention when the media reported on plans to develop robot judges in Estonia to handle small claims.[12] However, this news was later denied by the Republic of Estonia Ministry of Justice which stated that there were no plans or projects to develop an AI robot judge for small claims. The two projects currently under development are the transcription project for the court hearings and the anonymization of the court decision.[13]

Other practices of using AI in courts can be found in China. The court in Hangzhou City, located in southern Shanghai, started using AI in 2019. Xiao Zhi 3.0, or “little wisdom”, is a judge assistant program, which for the first time assisted in the trial of 10 people who failed to pay bank debts. Before using Little Wisdom, 10 separate trials were required to resolve the issue, but after using this program, these cases can be resolved through one trial with one judge and the decision can be resolved within 30 minutes.[14]

Based on the practice of applying AI in court work, to date, no one has actually implemented an AI judge in fully adjudicating a case. The closest implementation is the use of AI as an assistant judge or assisting a judge in adjudicating a case as implemented in China. The potential for AI judges to replace human judges has become a widespread discussion among legal experts, some positive things can be opportunities but there are also several challenges in implementing AI judges in criminal courts. AI judges are considered more objective and comprehensive in assessing a case. The resulting decision is believed to be independent of subjective thoughts because it is based on a certain algorithm that has been set by the program maker. Algorithms can increase efficiency, reduce bias, and produce better results in decision-making. Nevertheless, algorithms raise important ethical and legal questions. In particular, algorithmic decision-making has the potential to undermine accountability, transparency, and fairness. Moreover, when algorithms are unclear, difficult to understand, or poorly designed, they may perpetuate or even reinforce bias and discrimination.[15]

The Indonesian Supreme Court does not turn a blind eye to the use of technology to assist judges' work. One of the technological leaps made by the Indonesian Supreme Court was through the launch of the Case Tracking Information System (SIPP) application in 2017.[16] This web-based application covers almost all court tasks including but not limited to case tracing and tracking, electronic documents (indictment, minutes of trials, decisions), templates for administrative documents as well as decisions, and so on. Various developments and innovations in the use of technology to assist court work are always being carried out, but up to

now, there has been no discourse regarding the use of AI Judges or the use of AI in assisting criminal court judges in Indonesia in judging and deciding criminal cases.

If classified, there are two main concepts of AI technology today. First, the rule-based approach, which involves an “if A then B” type of command. Once an event or fact has been characterized, the software will apply the specified rules. Problems with this model arise when the required decision tree becomes too complex. Second, a data-based approach. This approach, which involves some machine learning, looks for patterns in large data sets. It finds relationships and correlations, from which it can draw conclusions and provide services. This is the type of AI that underlies products such as translation software, natural language processing, autonomous vehicles, and some document review software.[17]

The criminal proof system in Indonesia itself adopts a system of evidence based on *negatief wettelijk bewijstheori*. Therefore, a judge must consider the evidence regulated in law, and the judge's conviction is obtained from that evidence.[18] The judge's conviction is an intuitive and human thing that AI does not have. An additional challenge for AI technology in the courtroom is its inability to replicate human empathy.[19] Apart from that, the two concepts of AI as explained previously are also very limited in their decision trees or databases. The data that can be compiled by AI creators is limited to past data and data on events that have already occurred, while the cases handled by criminal courts are dynamic and develop over time. The task of a judge is a task that is very close to human nature. Judges have an obligation to explore, follow, and understand the legal values and sense of justice that exist in society.[20] The legal values and sense of justice that exist in society are complex things that are difficult to summarize in digital data or certain algorithms. However, it cannot be denied that AI as an assistant has helped judges in China, even though it is limited to simple cases.

If we look at the Indonesian criminal law system, criminal procedural law in Indonesia recognizes several types of examination proceedings, including ordinary examination proceedings, short examination proceedings, and quick examination proceedings. The simplest type of proof is a quick examination proceeding. Cases examined using the quick examination proceeding are minor criminal offenses which are punishable by imprisonment for a maximum of three months and/or a fine of up to two million five hundred thousand rupiah, and cases of traffic violations. Cases tried using a quick examination proceeding have the easiest nature of proof, because the judge's conviction, supported by just one piece of valid evidence, is sufficient to declare a crime/violation proven. This is different from the conditions for proving a criminal act in general because it requires the judge's conviction supported by at least two valid pieces of evidence.[21] Thus, even the simplest criminal case examination still requires the judge's conviction in determining whether a criminal act is proven or not.

The opportunity to use AI in cases of minor crimes and traffic violations is something that can be considered in Indonesian criminal courts because the nature of the proof is very easy. However, the application of AI should still be limited only as an assistant to human judges, this takes into account the weaknesses of AI that have been explained previously. Apart from that, until now the development of AI learning still faces a weakness called the “black box”. A “black box” is our inability to see how the AI deep learning system concluded a particular decision. Rawashdeh gives an example, an autonomous vehicle hits a pedestrian when we think the

vehicle will apply the brakes, the black box nature of the system means we cannot track the system's thought process and know why the system made that decision. If an accident like this happens, and it turns out the perception system missed the pedestrian, Rawashdeh says we assume it was caused by the system finding something new in the situation.[22] A real example of the full use of technology in a court is in England. There, a relatively simple IT determines the financial capacity of the (former) partner in the maintenance process. The parties fill out a PDF form, and IT calculates the resulting capacity. Due to unnoticed minor errors, incorrect calculations were made in 3,638 cases between April 2011 and January 2012, and between April 2014 and December 2015. Debts, instead of being reduced, were added to assets, resulting in the assets taken into account being too high. In cases that are still pending, this can still be corrected. However, wrong decisions were issued, and possibly upheld, in more than 2,200 cases.[4]

AI must be able to explain how it concluded a result. This can be in the form of an explanation of the processing process, but it can also be a substantive explanation. Research shows that AI should generally be technically capable of providing the kind of explanations we ask of humans, but in practice, humans can explain some aspects more easily than AI.[23] Transparency and accountability are important in assessing whether a judge's decision is fair or not, so if these problems cannot be corrected, the full use of AI judges is still far from being implemented.

3.2. Opportunities and Challenges of Using AI to Assist Indonesian Criminal Court Tasks

Discussing the duties of criminal courts, it is not only limited to the task of adjudicating cases but there are also various supporting administrative tasks related to criminal cases. It has been discussed previously that AI has great potential in helping various human jobs. In public administration, AI has advantages including:[24]

- 1) Improving government performance to be more effective, speeding up bureaucratic processes so that time and costs can be made more efficient;
- 2) Assist the government in meeting community needs in many aspects, especially those related to the provision of public services.

On August 18, 2023, The Indonesian Supreme Court launched the Smart Majelis, which is an artificial intelligence-based robotics application to select a panel of judges automatically, using various factors including experience, competence, and workload of judges. This application also considers the type of case that will be tried, so that the selected judges have expertise appropriate to the type of case they are handling.[25] This is the first time the Supreme Court has applied AI to assist in handling cases at the Supreme Court.

Before, the United States used AI in the process of adjudicating criminal cases through a tool called COMPAS (Correctional Offender Management Profiling for Alternative Sanctions). This tool is used by US criminal judges in several states when assessing the risk of recidivism of defendants or convicts, in decisions regarding pre-trial detention, sentencing, or early release.[26] This could be adopted by criminal judges in Indonesia. The criminal record of a criminal in Indonesia is currently not well compiled. Efforts to integrate data including all law

enforcement sub-systems have been carried out with the launch of an Information Technology-based Integrated Case Handling System (SPPT-TI).[27] The use of AI can help judges assess the severity of punishment by considering the level of recidivism of the criminal and the potential for repetition of criminal acts. However, it is worth underlining that COMPAS itself still has shortcomings because it is considered to overestimate the recidivism rate among African-American defendants compared to Caucasian Americans.[4]

By looking at AI's ability to process data, AI can speed up legal research for judges. The concept of AI as an assistant judge applied in China can be adopted by Indonesian judges. Indonesia as a rule of law country has many laws and regulations which are spread in various forms and regulate many aspects of human life. If detailed, the number of laws and regulations in Indonesia is 1,745 Laws, 217 Government Regulations in Lieu of Laws, 4,855 Government Regulations, 2,336 Presidential Regulations, 18,158 Ministerial Regulations, 5,799 Agency/Institution Regulations, 18,814 Regional Regulations, and other regulations.[28] This data does not include jurisprudence or doctrine. Thus, the application of AI as an assistant in accelerating legal research for judges who hear criminal cases is an idea that is worthy of being a breakthrough.

In some areas of China, AI robots greet visitors to courthouses in some areas and help guide them to the right location.[29] This can also be adopted in Indonesian courts in providing fast services through the use of AI in directing service users to obtain services that suit their needs.

However, it is worth remembering that there are still many challenges faced in implementing AI in Indonesian criminal courts. The most fundamental challenge is assessing the capabilities and shortcomings of AI itself. Until now, Indonesia does not have regulations regarding the use of AI, starting from the principles and limits of its development and use. Reflecting on the European Union which has developed an ethical framework for AI. In 2018, the Commission established an independent high-level expert group (HLEG) in the field of AI to develop ethical guidelines. This group consists of 52 experts from industry, academia, and civil society who were selected through an open selection process. Ethical guidelines are developed in a participatory manner. An initial draft was published in December 2018. More than 500 organizations and individuals provided comments during stakeholder discussions. "Ethical Guidelines for Trustworthy AI" was published in April 2019. These guidelines emphasize a 'human-centered' approach to AI. According to this approach, "AI is not an end in itself, but is a promising means of improving human well-being, thereby enhancing individual and societal well-being and the common good, as well as bringing progress and innovation".[30]

Another challenge is the readiness of human resources to face innovations in applying AI to assist the work of criminal courts in Indonesia. AI is a high-level technology that requires appropriate competence in its use. Reflecting on France which banned the development of AI-based predictive litigation in 2019. One of the reasons was to avoid the commercialization of judicial decision-making data because courts do not have the capacity to develop AI themselves.[14]

4. Closing

The opportunity to use AI in cases of minor crimes and traffic violations can be considered in Indonesian criminal courts because the nature of the proof is very easy. However, the application of AI should still be limited only as an assistant to human judges, because the development of AI learning still faces a weakness called the "black box", the inability to see how the AI deep learning system concluded a particular decision. On the other hand, AI capabilities are very applicable to help several tasks in Indonesian criminal courts, namely selecting a panel of judges automatically using various factors, helping judges assess the severity of punishment by considering the level of recidivism, accelerating legal research for judges, and directing court service users to obtain services that suit their needs. However, there are still many challenges faced in implementing AI in Indonesian criminal courts. The readiness of human resources and the establishment of adequate regulations are important in using AI to assist the work of the courts.

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