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Optimizing The Role Of Artificial Intelligence Technology In The Prevention And Enforcement Of Criminal Law: An Indonesian Legal Perspective

Ramadhany Nasution
Universitas Pembinaan Masyarakat Indonesia

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ABSTRACT
The development of Artificial Intelligence (AI) has brought significant changes to the Indonesian criminal law system. This research aims to examine the implementation of AI in the prevention and enforcement of criminal law, with a focus on normative juridical analysis of the integration of advanced technology in the justice system. The research method uses a normative juridical approach through literature study. Data were collected from primary and secondary legal sources and literature related to the implementation of AI in criminal law. Data analysis was conducted qualitatively to explore the potential and challenges of using AI. The results showed that AI has significant potential to increase the effectiveness of crime prevention through predictive analysis and law enforcement through digital evidence processing. This technology can help identify criminal patterns, track criminals, and support judicial administrative processes. However, its implementation requires a comprehensive regulatory framework to address ethical issues, privacy, and potential algorithm bias. The research identified the need for human resource development and adaptation to the local cultural context. Conclusions emphasize AI as a support tool, not a replacement for the justice system. It has the potential to improve efficiency, but cannot replace moral considerations and human conscience in upholding justice.

Corresponding Author:
Ramadhany Nasution
Universitas Pembinaan Masyarakat Indonesia
dhanynasution19@gmail.com

INTRODUCTION

The era of the industrial revolution 4.0 has brought significant changes in various aspects of life, including in the criminal law enforcement system. The rapid development of Artificial Intelligence (AI) technology provides new opportunities for more effective and efficient prevention and law enforcement efforts. In various developed countries, the implementation of AI in the criminal justice system has shown promising results, ranging from crime prediction to complex digital evidence analysis (Prima, 2018).

The acceleration of technological development in the contemporary era has reached unprecedented levels, reflecting the culmination of innovation and scientific research conducted by the modern generation. The existence of technology has become an integral part of the dynamics of people's lives, providing convenience and efficiency in various aspects

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of human activity, from the fulfillment of basic needs to the completion of complex tasks. This digital transformation has revolutionized the way humans interact, work and live their daily lives (Disemadi, 2021). While technology has proven to make a significant contribution in improving the quality of life and human productivity, it is important to realize that every technological advancement brings a double consequence. On the one hand, technology offers various conveniences and innovative solutions, but on the other hand it also presents challenges and potential risks that need to be anticipated and managed wisely (Yudoprakoso, 2019).

Indonesia, as a country with a dynamic and complex crime rate, needs to optimize the use of AI technology in its criminal law enforcement system. However, the application of AI in the Indonesian legal context is still relatively limited and faces various challenges, both in terms of infrastructure, human resources, and a legal framework that is not yet comprehensive. This creates a gap between the potential of available technology and its implementation in law enforcement practice.

In the development of modern technology, artificial intelligence (AI) has emerged as one of the most revolutionary innovations that has changed the landscape of digital technology. It represents the culmination of the complexity of computer programming based on a series of sophisticated algorithms, designed to perform specific functions and tasks based on pre-programmed instructions. At its fundamental level, artificial intelligence operates through a complex set of codes that form its operational base, allowing the system to process and respond to inputs according to predefined parameters (Fahrudin, 2018).

While it is often compared to conventional robotic systems that rely on direct instructions from human operators, modern artificial intelligence has evolved far beyond that limitation. Contemporary AI systems have reached a level of sophistication that allows them to perform machine learning, analyze complex data patterns, and even make decisions based on previous experience. These adaptive capabilities distinguish modern AI from traditional robotic systems, although both still require a certain degree of human input and supervision. These developments have opened up a wide range of possible applications in sectors ranging from industrial automation to complex decision-making systems in various professional fields.

The evolution of artificial intelligence technology has undergone a significant transformation through various stages of increasingly sophisticated development. In the course of its evolution, artificial intelligence is divided into three fundamental levels that reflect its increasing capabilities and complexity. At the basic level, Artificial Narrow Intelligence (ANI) comes as a form of artificial intelligence with limited capabilities that still requires human intervention in carrying out its tasks. The next development brought Artificial General Intelligence (AGI), which marked a major leap in AI capabilities with capabilities equivalent to human cognition, enabling autonomous operation without significant dependence on human input. The highest level is represented by Artificial Super Intelligence (ASI), which is specially designed with superior capabilities beyond those of humans, potentially taking over various functions that previously could only be performed by humans (Haris & Tantimin, 2022).

Artificial Intelligence, with its ability to analyze large amounts of data, pattern recognition, and machine learning, offers significant potential to improve effectiveness and

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efficiency in criminal law prevention and enforcement. This technology can help law enforcement officers in various aspects, from predictive policing, digital forensic analysis, to data-driven decision-making in the judicial process.

Although AI technology has shown impressive success in various fields, as evidenced by Google Translate in transforming the world of translation with its multilingual capabilities that almost match human translators, its application in the context of Indonesian criminal law presents its own complexities that require in-depth study. Indonesia's civil law system, with its unique characteristics, requires a very careful and structured approach in integrating AI technology into the applicable legal framework. Moreover, optimizing the role of AI in the criminal justice system must always consider fundamental aspects such as the protection of human rights, personal data security, and the principle of due process of law, while recognizing that this technology, as in the case of Google Translate, has transformative potential as well as limitations that need to be anticipated, especially in the context of legal nuances and local cultural interpretations.

Regulation on artificial intelligence (AI) in Indonesia is still in its early stages of development and continues to evolve over time. Although Indonesia has the Electronic Information and Transaction Law (UU ITE) and several other information technology-related regulations, these regulations have not been able to fully accommodate the complex aspects that arise from the use of AI in the criminal justice system. This situation creates a significant urgency to conduct an in-depth study and formulate a more comprehensive legal framework, especially in regulating the implementation of AI technology in the context of criminal law in Indonesia.

This study aims to analyze the potential and optimization of the role of AI in the Indonesian criminal justice system, by considering legal, technical, and ethical aspects. This study will also discuss various challenges and opportunities in the implementation of AI, as well as formulate recommendations for the development of a legal framework that can accommodate the development of AI technology in the context of criminal law enforcement in Indonesia.

METHOD

Referring to the focus and scope of the research, the author chose to use a normative juridical research approach. This method is a legal research strategy that relies on literature studies, where data collection is carried out through a systematic review of various literature sources and secondary data. In this approach, researchers do not conduct field research, but rely entirely on documentary materials and legal literature available to analyze the problems studied (Soekanto & Mahmudji, 2003).

This research uses two main approaches that complement each other in examining legal issues related to Artificial Intelligence, namely, the statute approach, which is a legal research method that requires researchers to conduct a thorough study of various laws and regulations that have a direct relationship with the problem being studied. In essence, this approach focuses on analyzing applicable legislation and regulations, with the aim of exploring the legal framework that regulates a particular issue. In the context of normative legal research, the

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statutory approach becomes a very fundamental methodological instrument. This is because normative research basically relies on a critical study of various legal rules that are the center of research attention. This paper focuses on a comprehensive analysis of various applicable regulations and legal instruments, with the aim of identifying legal gaps, consistency, and harmony of regulations relating to the development of AI technology in the context of criminal law (Achmad & Yulianto, 2010). The next approach is a conceptual approach that allows researchers to explore and develop legal frameworks based on theoretical constructs, doctrines, and legal principles that are already established in the legal literature.

This research methodically relies on secondary data organized into three layers of legal sources. The first layer is primary legal material, which includes official laws and regulations that are directly related to AI regulation and the criminal law system, both at the national and international levels. The second layer consists of secondary legal materials, which include in-depth studies from legal experts, reputable scientific journals, and academic research results that provide an analytical perspective on the implementation of AI in the criminal justice system. The third layer is tertiary legal materials, which serve as supporting and defining instruments, such as specialized legal dictionaries and encyclopedias that can help clarify complex legal terminology and concepts. Data analysis was conducted qualitatively using the descriptive analytical method, in which the collected data was processed and analyzed to produce a comprehensive picture of the optimization of the role of AI in criminal law prevention and enforcement from an Indonesian legal perspective. This analysis process also involves systematic interpretation of various laws and regulations relating to the use of AI technology in the context of criminal law enforcement (Fajar & Achmad, 2010).

RESULTS AND DISCCUSION

Potential Implementation of AI in Indonesia's Criminal Law System

The rapid advancement of information technology has brought major changes with the entry of artificial intelligence or AI into various facets of our lives, including in the field of criminal justice. In Indonesia, as the digital transformation continues to accelerate, the conversation about the use of AI in court proceedings is becoming an increasingly important topic that needs to be discussed in depth. This change shows how our justice system is starting to turn to technology-based solutions to make the legal process more effective and efficient. The application of AI in Indonesia's criminal justice system can provide many benefits, from speeding up the process of analyzing legal documents, helping judges and legal practitioners make decisions based on previous cases, to making it easier for the public to access legal services through a more automated system.

In the global context, the application of AI in the criminal justice system has shown significant development, with various developed countries pioneering innovations in this field. The United States, as one of the pioneers in the implementation of AI in the legal field, has developed several revolutionary systems. One of them is COMPAS (Correctional Offender Management Profiling for Alternative Sanctions), an algorithm-based system capable of analyzing and predicting a convict's likelihood of reoffending. This system has become a valuable tool for judges in the decision-making process regarding the determination of

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appropriate criminal sanctions. The United States has also implemented PredPol, a predictive system that uses sophisticated algorithms to identify areas with a high potential for crime. This innovation allows the police to optimize resource allocation and improve patrol effectiveness based on data and predictive analysis (Egbert & Krasmann, 2020).

On the other hand, China is taking a more aggressive approach in adopting AI technology for its judicial system. The country has experimented with the concept of judgeless courts, where AI is used to handle and decide relatively simple cases, such as small-value contract disputes. Furthermore, China has developed a comprehensive AI-based mass surveillance system, which is used for monitoring and identifying individuals deemed potential threats to national security (Chen & Li, 2020). These developments illustrate the great potential for Indonesia to optimize its criminal justice system through the integration of AI technology.

Artificial Intelligence (AI) offers significant transformation in Indonesia's criminal justice system through several key dimensions. In crime prevention, AI is able to develop advanced predictive systems that analyze criminal patterns and socio-economic variables, helping law enforcement officials identify risk areas and allocate resources optimally. In law enforcement, AI enables more accurate analysis of digital evidence, capable of processing large volumes of data, performing suspect identification through facial recognition technology, and automating administrative processes. The system can be a decision support that provides comprehensive analysis of legal precedents, helping judges make more informed decisions. In forensics, AI improves the accuracy of evidence examination, helping to identify hidden patterns in investigations. The technology also has the potential to increase the transparency of the justice system through traceable and auditable algorithms. However, its implementation requires a strong regulatory framework, considering aspects of privacy, data security, and the development of competent human resources, as well as being adapted to the local Indonesian context.

Law Enforcement Using Artificial Intelligence Self

Law enforcement is a complex process that is influenced by five main factors, namely law, law enforcement, facilities, society, and culture. Each factor has a significant role in creating an effective and equitable legal system (Soekanto, 2004). Legal factors refer to laws and regulations that govern certain issues. In the context of information technology, the Electronic Information and Transaction Law (ITE Law) is one of the important legal products that regulate digital activities and electronic transactions. Meanwhile, law enforcement factors include police, prosecutors, and judges who are required to have integrity and capability in handling legal issues, especially those related to the cyber world. The means factor includes the infrastructure and supporting devices needed in the law enforcement process, including digital technology and information systems that play an increasingly important role in this modern era. Society as a legal subject also plays a crucial role, where public awareness and understanding of the law will affect the effectiveness of law enforcement. This is closely related to cultural factors that reflect the values and norms adopted by society. In this digital era, these five factors face new challenges with the presence of AI technology that can affect the way the justice system works. Law enforcers are required

to adapt to technological developments, while the existing legal framework needs to be updated to accommodate digital innovations. Facilities and infrastructure also need to be improved to support the integration of technology in the justice system.

Community factors are closely related to the need for regulation and law enforcement related to actions in cyberspace. The cultural factor reflects how the culture of society affects the applicable legal system. The facilities and infrastructure factor, which is a crucial element, refers to law enforcement support tools, including Artificial Intelligence (AI) technology that can assist law enforcers. In its development, AI has shown significant potential, such as in the implementation of e-tickets that can reduce corrupt practices. However, it is important to realize that law enforcement by technological devices is different from human law enforcement. A judge has three dimensions of justice: legal justice, moral justice, and social justice - something that is difficult to be fully replaced by technology. Thus, the integration of AI in law enforcement must be done carefully, while still placing humanitarian considerations as the top priority. Technology can be a tool, but it should not replace human nuances in the law enforcement process (Supriyadi et al., 2020).

AI technology is sophisticated, but it cannot replace judges completely. Like smart machines that can process data quickly, AI is missing an important ability that humans have: the ability to understand the true nuances of justice. Sophisticated algorithms cannot replace a judge's intuition. When deciding a case, a judge does not just read the legal facts, but reads the social context, considers the human aspects, and uses conscience.AI can help with technical matters. It can organize legal documents, choose the right judge, or track criminals through data. But to decide a person's fate? That's the job of humans who have feelings and thoughts. In essence, AI is a tool, not a final decision-maker. True justice is born out of complex considerations, something that a smart machine cannot simply calculate.

CONCLUSION

Artificial Intelligence (AI) in Indonesia's criminal justice system is a potential tool, not an absolute substitute. It can read crime patterns faster, assist with investigations, and speed up legal administration, but it cannot replace human moral judgment and intuition. To bring AI into the legal system, we need careful preparation. Starting from making strict rules, training human resources to building a good monitoring system. Indonesia needs to design AI that can read local conditions, not just paste, and has sensitivity to cultural diversity. In essence, AI is just a tool, not a decision maker. No matter how sophisticated technology is, it can never replace the mind and conscience of a judge. Machines can read data, but cannot feel the story behind a case. If developed properly, AI can be a partner that helps speed up the legal process. Not to replace, but to support law enforcers to work smarter and fairer. Technology exists to serve humanity, not the other way around.

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