

Robot Prosecutors and the Future of Criminal Justice in Indonesia: Innovation, Ethics, and Legal Implications

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Abstract

Robot prosecutors represent the integration of robotic technology and artificial intelligence (AI) into the traditional role of a prosecutor, reflecting the global trend towards automation and the application of technology within the legal system. This concept is no longer merely a theoretical; it has begun to materialize in certain jurisdictions. For instance, China has emerged as a pioneer in this field by successfully developing an innovative AI program capable of not only of identifying crimes through detailed data analysis but also of filing appropriate lawsuits. This progress underscores the immense potential of this technology to enhance efficiency and accuracy in judicial processes, while simultaneously raising significant questions about ethics, transparency, and justice. This study employed normative methods and utilizing several approaches, including comparative, conceptual, and futuristic approaches. Qualitative analysis was applied to the collected materials; and content analysis was used to classify legal materials. The findings emphasize that while robot prosecutors can improve efficiency in handling routine and data-driven cases, their role should not replace human judgment in more complex and ethically sensitive cases. The legal system must ensure a balance between technological advancements and fundamental principles of justice. Collaboration between AI and human prosecutors, guided by clear protocols, is essential to maintain fairness and ethical integrity, particularly in cases involving moral and social considerations. Thus, Indonesia's approach to integrating robot prosecutors should focus on establishing transparent oversight mechanisms and protecting the rights of defendants, particularly the right to appeal, to ensure that technological advancements support rather than compromise justice. The adoption of robot prosecutors in Indonesia has the potential to revolutionize the legal landscape. However, it must be pursued cautiously, taking into account both the technological benefits and the human values that underpin justice.

Keywords: artificial intelligence, criminal justice reform, robot prosecutors

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A. Introduction

China has gained an impressive reputation as a leader in the development of artificial intelligence (AI) technology over the past few years.¹ This achievement is the result of massive investment and support from the government, which has positioned AI as one of the key pillars of its technological growth strategy. Chinese research centers and companies have made significant progress in various aspects of AI, including machine learning, pattern recognition, and data analysis.² In addition, China is focusing on the application of AI in industries such as healthcare, education, security, and automotive.³ These ambitions are realized through collaboration between universities, private companies, and government initiatives. The combination of abundant resources, scientific talent, and an environment conducive to innovation has established China as one of the major players on the global AI stage.⁴ Recently, China generated a buzz in the legal technology sector by introducing "AI," a robot prosecutor powered by artificial intelligence and machine learning. This development exemplifies the result of the advanced integration of AI and machine learning technologies, marking a significant step in the evolution of legal process automation. The AI is designed to understand and analyze legal documents with a speed and thoroughness that far surpasses human capabilities. Its capabilities include identifying potential legal violations, drafting indictments, and even providing recommendations for legal decisions.⁵ Not only demonstrates technological progress in China, this achievement also shifts the paradigm in the justice system, paving the way for the wider use of AI in the law and justice sectors. The use of robot prosecutors reflects China's endeavor to innovate to integrate AI into various aspects of social life and governance, taking the world by storm with its rapid and focused technological advancements.

The advanced robot prosecutor named "The AI" is the product of a five-year ongoing development, which began in 2015. During the development process, The AI was trained using data from 17,000 different criminal cases, establishing its broad and deep knowledge base.⁶ The inspiration for The AI comes from an earlier AI technology known as *System 206*. Unlike its predecessor, The AI has a highly advanced ability to determine the type of crime and the corresponding charges by simply listening to the verbal description of the suspect. The accuracy achieved by

¹ Huey-Meei Chang William C. Hannas, *Chinese Power and Artificial Intelligence* (London: Routledge, 2022), 1-30, DOI: 10.4324/9781003212980.

² Jinghan Zeng, *Artificial Intelligence with Chinese Characteristics: National Strategy, Security and Authoritarian Governance* (Singapore: Palgrave Macmillan Singapore, 2022), 1-135, DOI: 10.1007/978-981-19-0722-7.

³ Christina Larson, "China's AI Imperative," *Science* 359, no. 6376 (February 9, 2018): 628-30, DOI: 10.1126/SCIENCE.359.6376.628/ASSET/809F57D1-4F55-4763-B739 81F34CE30224/ASSETS/GRAPHIC/359_628_F3.JPEG.

⁴ Kai-Fu Lee, *AI Superpowers—China, Silicon Valley and the New World Order* (New York: Houghton Mifflin Harcourt, 2018).

⁵ Kamil Mamak, *Robotics, AI and Criminal Law* (London: Routledge, 2023), 1-114, DOI: 10.4324/9781003331100.

⁶ Josina, "China Ciptakan Robot Jaksa Dengan Kecerdasan Buatan," *inet.detik.com*, 2021, <https://inet.detik.com/cyberlife/d-5879191/china-ciptakan-robot-jaksa-dengan-kecerdasan-buatan>.

The AI impressively reaches 97 percent. This innovation represents major progress in the application of AI in the justice system, where robots can perform complex legal analysis based on verbal narratives. Not only a significant technological advancement, it also represents the potential to revolutionize the way the legal system operates, increasing efficiency and accuracy in legal proceedings.⁷

Currently, The AI as a revolutionary robot prosecutor, has been designed to handle eight types of common criminal cases that frequently occur in Shanghai. These cases include fraud, credit card fraud, theft, gambling, willful damage, reckless driving, obstructing officers, and provoking trouble.⁸ The development and implementation of AI in the legal system represent an effort to optimize the process of managing legal cases. With its ability to handle these common cases, The AI is expected to ease the workload of human prosecutors, allowing them to focus more on cases that are more complex and require more in-depth legal considerations. The emergence of AI as a robot prosecutor marks a new era in legal process automation, where routine and repetitive tasks can be performed by AI with high efficiency while human prosecutors can allocate their time and resources to deal with more critical and nuanced aspects of law enforcement. While it is true that this initiative demonstrates significant technological innovation, it is also worth noting that it has the potential to improve the quality and effectiveness of the justice system.

The robot prosecutor, known as The AI, has become a hot topic of conversation in the legal world, primarily due to its impressive ability to file charges with an accuracy rate exceeding 97%. This percentage is based on the analysis made by the robot on the descriptions of suspected criminal cases. With its advanced analytic capabilities powered by artificial intelligence and machine learning, The AI can process and evaluate information with speed and efficiency that outshine human capabilities.⁹ This evolution allows the robot to identify criminal patterns, understand the legal context, and even make predictions about case outcomes with a very high degree of accuracy. As a result, The AI is claimed to be able to replace the role of human prosecutors in the legal decision-making process to a certain extent, especially in simple and routine cases. This marks a paradigm shift in the judicial system, where AI technology not only acts as a tool but also as a competent decision-maker in some aspects. Despite its significant potential, the use of robots such as The AI in the legal system raises important questions regarding their reliability, transparency, and accountability in AI-based decision-making.

⁷ Choirul Arifin, "Canggih, China Kini Punya Robot Jaksa The AI, Sang Pembasmi Kejahatan," *TribunNews.com*, 2022, <https://www.tribunnews.com/techno/2022/01/04/canggih-china-kini-punya-robot-jaksa-the-ai-sang-pembasmi-kejahatan>.

⁸ Naufal Mamduh, "RoboCop Is Real! China Kerahkan Robot Untuk Tumpas Kejahatan," *Telset.id*, 2022, <https://telset.id/news/science-tech/cina-ciptakan-robot-jaksa/>.

⁹ Nicholas Ryder Alison Lui, *FinTech, Artificial Intelligence and the Law* (London: Routledge, 2021), 1-302, DOI: 10.4324/9781003020998.

In Indonesia, law enforcement is often faced with complex challenges, including case backlogs, limited resources, and transparency issues. In this context, the adoption of artificial intelligence (AI) technology, as is being done with the AI robot prosecutor in China, could be a strategic move. The use of AI has the potential to improve the efficiency of the legal process by accelerating data analysis and decision-making. AI can reduce case backlogs by processing data more quickly and accurately than humans, identifying patterns in criminal cases, and possibly even reducing the risk of human error or bias in decision-making. In addition, by enabling experts to review and comprehend the AI algorithms used, increased transparency in Indonesia's legal system can be achieved. However, the application of this technology must also be balanced with ethical and prudential considerations to ensure that justice and individual rights are preserved. With the right steps, Indonesia can utilize AI to address some of the biggest challenges in law enforcement while paving the way for a more modern and efficient justice system.

Based on records released by Indonesia Corruption Watch (ICW), from 2015 to 2020, there were at least 22 prosecutors in Indonesia who were named as suspects in corruption cases.¹⁰ From January to June 2021, the Attorney General of the Republic of Indonesia, ST Burhanuddin, highlighted the serious efforts made by the supervision sector in enforcing discipline among prosecutors. Within six months, a total of 101 prosecutors have received disciplinary punishment for various offenses.¹¹ These findings illustrate the serious challenges faced in tackling corruption in the law enforcement sector, where law enforcers themselves are involved in corrupt practices. Throughout 2022, the Attorney General's Office of the Republic of Indonesia, through the Deputy Attorney General for Intelligence (Jamintel), has taken significant steps in upholding its integrity and good governance within the organization. From January to December 2022, the Attorney General's Office's Team of Security for Organizational Resources managed to arrest 25 prosecutors and employees who were suspected of abusing their authority.¹² Corruption among prosecutors undermines the integrity of the prosecution process. Prosecutors, who are tasked with upholding justice, may abuse their power by accepting bribes or manipulating cases to benefit certain parties. This allows suspects with political or financial influence to evade punishment. Corruption also lowers the quality of prosecutions, as evidence can be tampered with and charges may lack objectivity, leading to flawed legal proceedings. Additionally, corruption

¹⁰ Axel Joshua Harianja, "ICW: Ada 22 Jaksa Tersandung Kasus Korupsi Sejak 2015," *idntimes.com*, 2020, <https://www.idntimes.com/news/indonesia/axel-harianja/icw-ada-22-jaksa-tersandung-kasus-korupsi-sejak>.

¹¹ Tribunbatam.id, "Sebanyak 101 JAKSA Bermasalah, Begini Penjelasan Jaksa Agung ST Burhanuddin," *Tribunbatam.id*, 2021, <https://batam.tribunnews.com/2021/07/22/sebanyak-101-jaksa-bermasalah-begini-penjelasan-jaksa-agung-st-burhanuddin>.

¹² Novianti Setuningsih Rahel Narda Chaterine, "Kejagung Amankan 25 Jaksa 'Nakal' Yang Salah Gunakan Wewenang Sepanjang 2022," *Kompas.com*, 2023, <https://nasional.kompas.com/read/2023/01/02/12365021/kejagung-amankan-25-jaksa-nakal-yang-salah-gunakan-wewenang-sepanjang-2022>.

often causes delays, creating legal uncertainty for victims and the public. The failure to address major cases involving powerful individuals is often due to weak ethics and poor internal oversight. A lack of accountability and insufficient external supervision further exacerbates the issue, hindering fair law enforcement.

More than merely raising concerns about the integrity of the criminal justice system, this situation further demonstrates the urgent need for reform and increased accountability within the prosecutorial institution. The presence of prosecutors involved in corruption erodes public trust in the justice system and hampers the efforts made to eradicate corruption in Indonesia. These cases highlight the importance of implementing stronger preventive measures and more effective oversight, and strengthening internal and external oversight institutions.

Furthermore, this issue has sparked discussions on the potential role of technology, particularly artificial intelligence (AI), in assisting law enforcement. Beyond merely raising concerns about the integrity of the criminal justice system, this situation further underscores the urgent need for reform and greater accountability within the prosecutorial institution. The presence of prosecutors involved in corruption erodes public trust in the justice system and hampers efforts made to eradicate corruption in Indonesia. These cases highlight the importance of implementing stronger preventive measures and more effective oversight, as well as strengthening both internal and external oversight institutions. Additionally, this situation has prompted discussions about the importance of implementing technologies such as artificial intelligence (AI) to aid law enforcement, potentially reducing the scope of corruption and increasing transparency in the legal process. The application of robot prosecutors could serve as one solution to enhance transparency and accountability within Indonesia's legal system. By leveraging artificial intelligence, robot prosecutors can analyze data and evidence more efficiently, reducing the likelihood of human error and bias in decision-making. This system can act as a safeguard against corrupt practices by providing objective and consistent assessments of the cases handled.

B. Integrating AI in the Criminal Justice System: Opportunities and Challenges

1. AI-Powered Transformation: Toward a More Efficient and Accurate Digital Justice Era

The development of AI technology in the judicial system in China, particularly exemplified by the implementation of robot prosecutors capable of indicting suspects based on 1,000 different traits, represents a major step forward in the application of artificial intelligence in the legal field.¹³ This capability, derived from human-performed case documentation, reflects a significant improvement in

¹³ Chen Mingsung and Li Shuling, "Research on the Application of Artificial Intelligence Technology in the Field of Justice," *Journal of Physics: Conference Series* 1570, no. 1 (2020): 1–8, DOI: 10.1088/1742-6596/1570/1/012047.

efficiency and analytical skills in handling legal cases. These Robot prosecutors, which can indict a number of common crimes in Shanghai, such as fraud, credit card fraud, theft, intentional damage, reckless driving, illegal gambling, and provoking trouble, open up new potential in the justice system to handle cases more quickly and accurately.¹⁴

The integration of robot prosecutors into China's judicial system, operating in conjunction with System 206, demonstrates a notable step forward in the evolution of legal technology in the country.¹⁵ These robot prosecutors are expected to complement System 206 by taking over more complex tasks such as filing charges and suggesting appropriate sentences for individual crimes.¹⁶ Not only showing an increase in AI's analytical and data processing capacity, this development also provides the justice system with more sophisticated tools to tackle crime. With the ability to handle more detailed and specific aspects of the law, these robot prosecutors will reduce the workload of human prosecutors. It enables them to shift focus and resources to cases that are more challenging and require more in-depth human judgment, such as cases involving complex ethical or legal nuances.¹⁷

The ultimate goal of this initiative is to enhance the efficiency and effectiveness of the justice system, ensuring that cases are processed quickly and fairly, while allowing human prosecutors to dedicate greater attention to cases that demand more detailed analysis and deliberation. This development marks an important step toward a future where technology and human expertise work side by side to improve the justice system, ensuring that justice is served more effectively and efficiently.

From China's experience in implementing robot prosecutors based on AI, Indonesia has a valuable opportunity to learn important lessons for integrating similar technology into its justice system. First and foremost, Indonesia can recognize the significance of proper AI development and validation. This involves utilizing an extensive and diverse case database for AI training, as well as a rigorous testing process to ensure accuracy and reliability. This ensures that the AI used is beyond advanced; it is also reliable and accurate in judicial practice.

Furthermore, training and capacity-building for legal professionals are crucial. Indonesia must prepare prosecutors and other legal professionals to work effectively with AI. This includes not only learning how to use AI but also understanding its

¹⁴ Yadong Cui, Cao Yan, and Liu Yan, *Artificial Intelligence and Judicial Modernization, Artificial Intelligence and Judicial Modernization* (Springer Singapore, 2019), 1-224, DOI: 10.1007/978-981-32-9880-4/COVER.

¹⁵ Ekaterina Rusakova, "Integration of 'Smart' Technologies in the Civil Proceedings of the People's Republic of China," *RUDN Journal of Law* 25, no. 3 (August 23, 2021): 622-33, DOI: 10.22363/2313-2337-2021-25-3-622-633.

¹⁶ Antony Ashkenaz, "China Creates Robot 'Prosecutor' to Charge Public with Crimes, Including Political Dissent," *Express.co.uk*, 2021, <https://www.express.co.uk/news/science/1542035/china-news-robot-prosecutor-public-crimes-robot-police-dissent>.

¹⁷ Ugo Pagallo, *The Laws of Robots - Crimes, Contracts, and Torts, Law, Governance and Technology Series* (Springer Netherlands, 2013), 1-200, DOI: 10.1007/978-94-007-6564-1.

limitations, emphasizing the role of technology as a supportive tool rather than a replacement for legal expertise.

Another essential aspect is to establish protocols for collaboration between AI and human prosecutors. Lessons from China reveal the importance of establishing clear working protocols where AI and human prosecutors can collaborate effectively, with appropriate tasks and responsibilities for each party. This ensures that both entities can work as a synergistic team, resulting in better and faster legal decisions. Transparency and accountability also act as the key to AI utilization in the justice system. Indonesia can learn from China about the importance of maintaining transparency in the use of AI and establishing accountability mechanisms, especially to address errors or bias in decisions made by AI. This is important to build public trust and maintain the upholding of the justice system.

Moreover, ethical considerations and human rights must be prioritized.¹⁸ China's experience shows the importance of paying attention to ethics and human rights in AI implementation, including mitigating biases and ensuring fairness in judicial proceedings. This consideration will further ensure that AI implementation is not only efficient but also fair and ethical. Finally, it is also crucial to note the development of appropriate policies and regulations. Indonesia can draw insights from China on how to develop policies and regulations that support AI implementation in the legal field, ensuring the compliance of its use with local legal and ethical norms. In addition, continuous evaluation and updating of AI systems are essential to make sure that the technology used remains relevant and effective despite legal and social dynamics change. By studying and adjusting these aspects according to the legal context and national needs, Indonesia can utilize AI technology in the justice system to improve efficiency and justice. This approach is not merely about adopting advanced technologies but about ensuring its responsible and contextually appropriate application within Indonesia's unique legal landscape.

The implementation of robot prosecutors in Indonesia has the potential to significantly benefit the legal system, particularly in terms of efficiency and objectivity. One of the primary advantages of adopting AI in law enforcement can be seen as a positive step is that AI can help reduce human error and bias that often occur in the decision-making process. With AI's ability to analyze data quickly and accurately, robot prosecutors can expedite the review of evidence and assist human prosecutors in building arguments based on more comprehensive facts. This is especially important in Indonesia, where a heavy caseload frequently causes delays in handling legal matters.

AI can also enhance transparency in the legal process because the decisions made by AI can be traced back to the algorithms used, thereby reducing the

¹⁸ Tomasz Braun Dominika Harasimiuk, *Regulating Artificial Intelligence* (London: Routledge, 2021), 1-196, DOI: 10.4324/9781003134725.

likelihood of unfair or subjective judgments. While AI cannot fully replace human prosecutors, its role as a supportive tool for prosecutors in legal processes can help create a more efficient, objective, and transparent system, ultimately increasing public trust in Indonesia's judiciary.

The implementation of AI technology in the criminal justice system, particularly through the deployment of AI prosecutors, can be analyzed using several relevant theories of criminal justice, such as Retributive Justice Theory, Restorative Justice Theory, and Utilitarian Justice Theory. Retributive Justice Theory emphasizes that punishment should be proportional to the wrongdoing committed by the offender, serving as retribution and corresponding to the severity of the violation. In the context of AI prosecutors, this theory may take a skeptical stance, as AI operates by analyzing data without considering the moral dimensions or intentions of the offender, potentially leading to a lack of in-depth moral judgment.

Conversely, Restorative Justice Theory focuses on repairing harm and reconciling relationships between the offender, the victim, and the community. The application of AI in prosecution may face challenges because AI lacks the ability to facilitate dialogue and mediation, which could result in decisions that overlook the essential human aspects inherent in restorative justice. For the time being, Utilitarian Justice Theory centers on achieving outcomes that provide the greatest benefit to society as a whole, and in this context, the application of AI aligns with this theory. AI can expedite the prosecution process and reduce the workload of human prosecutors, thereby enhancing the efficiency of the justice system and yielding more objective decisions.

Among the three theories, the Utilitarian Justice Theory tends to support the AI implementation, while Retributive Justice Theory and Restorative Justice Theory offer critical perspectives on AI's ability to address moral and humanistic aspects of legal cases. Therefore, in Indonesia, AI should serve as a supportive tool for human prosecutors rather than a complete replacement, ensuring that the justice system remains efficient, fair, and humane.

2. Ethical and Justice Issues in Robot Prosecutors Implementation: Navigating the Moral Dilemmas in Advanced Technology

A robot prosecutor, known as "The AI", has been developed and tested by the Shanghai Pudong People's Procuratorate. It has attracted attention as a significant innovation in the justice system in Shanghai. The robot is designed to assist authorities in assessing evidence and making decisions about whether a criminal suspect poses a threat to society.¹⁹ Despite its impressive 97% accuracy, The AI, which is often compared to the fictional character RoboCop for its role in law enforcement, also received criticism. A prosecutor from Guangzhou, China, raised

¹⁹ Novina Putri Bestari, "China Bikin Jaksa Anti-Sogok Berteknologi AI, RI Minat?," [cnbcindonesia.com](https://www.cnbcindonesia.com/tech/20211231050812-37-303427/china-bikin-jaksa-anti-sogok-berteknologi-ai-ri-minat), 2021, <https://www.cnbcindonesia.com/tech/20211231050812-37-303427/china-bikin-jaksa-anti-sogok-berteknologi-ai-ri-minat>.

concerns about the robot's ability to make accurate decisions.²⁰ These concerns center on the issue of errors that may occur despite the high level of accuracy of the technology.

A crucial question that arises pertains to accountability. Who will be responsible when errors occur? Should it be the prosecutor using the system, the machine, or the designer of the algorithm behind the technology? These questions do not only highlight the issue of the reliability of AI technology in the legal system but also demand an in-depth consideration of the structure of responsibility and accountability in an era of law enforcement that increasingly relies on advanced technological solutions.

The integration of AI in the legal system, as exemplified by robot prosecutors like "The AI", raises significant legal and ethical questions regarding accountability and responsibility. In China, these concerns are addressed through several regulations and legal frameworks. First, the Civil Code of the People's Republic of China (2020), Article 1195, establishes liability for damages caused by defects in products, which could extend to AI technologies if they malfunction or cause harm. This implies that designers or manufacturers may be held accountable for errors leading to wrongful decisions made by AI systems.

The General Principles of Civil Law (1986) also discusses liability in tort cases, potentially applicable to situations where AI technology impacts individuals' rights. Moreover, various Artificial Intelligence Ethics Guidelines proposed by the Chinese government emphasize the necessity of accountability in AI systems, advocating for a transparent approach to AI development and defining accountability structures for AI's actions. The Criminal Procedure Law of the People's Republic of China provides a framework for prosecutorial conduct and decision-making, mandating that the use of AI tools like The AI in assessing evidence aligns with principles prioritizing human rights protection and fair trial standards.

Lastly, the proposed Regulation on the Safety of Artificial Intelligence aims to govern the deployment of AI technologies, addressing issues such as data protection, algorithmic accountability, and the need for human oversight. These regulations are likely to focus on ensuring the reliability of AI systems and establishing clear lines of accountability when issues arise.

These concerns highlight the importance of considering the ethical and responsible use of AI in the legal field. While AI offers impressive efficiency and analytical capabilities, it is not infallible and carries the possibility of error.²¹ This raises a broader debate on how legal systems should manage and address errors that may occur when AI assists in or makes legal decisions. The question of who

²⁰ Hannah Sparks, "China's AI Attorney Prosecutes Crimes 'With 97% Accuracy,'" *nypost.com*, 2021, <https://nypost.com/2021/12/27/chinas-ai-attorney-prosecutes-crimes-with-97-accuracy/>.

²¹ Nithesh Naik et al., "Legal and Ethical Consideration in Artificial Intelligence in Healthcare: Who Takes Responsibility?," *Frontiers in Surgery* 9, no. March (2022): 1–6, DOI: 10.3389/fsurg.2022.862322.

should be held accountable, whether it is the human operator, the machine builder, or the algorithm developer, becomes the key in understanding how these technologies should be integrated into the existing justice system.

In addition, these concerns underscore the need for robust oversight mechanisms and transparency in using AI. To build public trust and ensure fairness, it is important for legal systems using AI to have clear protocols on how decisions are made and reviewed. This includes the establishment of adequate legal and ethical frameworks that act beyond regulating AI utilization but also set guidelines for liability when mistakes occur. Finally, this challenge shows that while AI can be a valuable tool in the legal system, complete reliance on the technology for critical decision-making must be followed by careful consideration of its limitations and potential weaknesses.²²

Despite the fact that the application of AI technologies, such as AI in the justice system leads to a new era characterized by efficiency and innovation, it also brings new complexities related to accountability and justice.²³ On the one hand, the use of AI can increase objectivity and reduce human bias in legal decision-making.²⁴ In contrast, technology presents challenges in determining how legal and ethical responsibilities should be allocated, especially when mistakes occur. The concerns expressed by prosecutors in Guangzhou make it clear that AI technology cannot completely replace human judgment in the legal system. Any mistake, however small, in a legal case, can have significant consequences for the lives of the individuals involved.

Therefore, it is important to develop a robust legal and ethical framework that not only regulates the use of AI but also ensures that there are fair and transparent mechanisms to address and correct mistakes that AI may make.²⁵ This includes procedures for effective human control, independent assessment of decisions made by AI, and clear pathways for accountability in the case of errors or system failures. In addition, an ongoing dialog between technicians, legal experts, and the public is essential to ensure a shared understanding of AI's capabilities and limitations. It will further help in forming a consensus on how these technologies should be integrated into the existing legal system while ensuring that human rights and the need for justice remain central. Therefore, while AI has the potential to bring about significant positive changes in the justice system, its approach requires vigilance and in-depth consideration of ethical, legal, and human aspects.

²² Maxi Scherer, "Artificial Intelligence and Legal Decision-Making: The Wide Open?," *Journal of International Arbitration*, 2019, 539–73, <http://www.kluwerlawonline.com/api/Product/CitationPDFURL?file=Journals%5CJOIA%5CJOIA2019028.pdf>.

²³ Paul H. Robinson Dennis J. Baker, *Artificial Intelligence and the Law (Cybercrime and Criminal Liability)* (London: Routledge, 2020), 1-280, DOI: 10.4324/9780429344015.

²⁴ Tara Prasad Sapkota et al., "Artificial Intelligence That Are Beneficial for Law," *US-China Law Review* 17, no. 5 (May 28, 2020): 217–23, DOI: 10.17265/1548-6605/2020.05.004.

²⁵ Chris Reed, "How Should We Regulate Artificial Intelligence?" *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 376, no. 2128 (2018): 1–12, DOI: 10.1098/RSTA.2017.0360.

Another important aspect to note is the need for widespread education and awareness regarding AI in the legal context. Legal professionals are not the only ones required to understand the dynamics and implications of this technology. The general public needs to do the same as they are key stakeholders in the justice system. Comprehensive education and open dialog about AI and its role in the legal system can help prevent misconceptions and unfounded fears as the public has realistic expectations about the capabilities and knowledge on this technology's limitations.²⁶

There should also be continuous research to monitor the advancement and use of AI in the legal system. This research needs to focus on collecting data and analyzing how AI affects the legal process, as well as its impact on fairness and efficiency. Through continuous research, insights can be gained on ways to improve the system, identify areas that require adjustment or improvement, and ensure that AI effectively serves the ends of justice. Finally, in the face of these challenges, it is also important to consider the establishment of an independent oversight organ or body tasked with monitoring, evaluating, and regulating the use of AI in the justice system. This organ should have the authority to conduct periodic audits, evaluate whether AI utilization complies with legal and ethical standards, and provide recommendations for improvement. With a balanced approach between technology utilization and strict oversight, AI can be integrated into the justice system in a way that strengthens justice and public trust.

AI clearly has an incredible capacity to detect errors and process information with great speed and accuracy. It does not mean that it is able to replace the role of humans in decision-making completely, especially in the context of the justice system.²⁷ Artificial intelligence can analyze large amounts of data, identify patterns, and even propose recommendations based on algorithmic logic.²⁸ However, AI lacks the in-depth contextual understanding, empathy, and moral judgment that are often crucial in the legal decision-making process. Legal decisions often require an understanding of human nuances, flexible interpretation of the law, and consideration of broader societal implications, something that is currently beyond the reach of AI. Therefore, despite it is true that AI is valuable as an aid in detecting errors and improving efficiency, the role of humans remains irreplaceable in assessing, interpreting, and making the final decision.

²⁶ Kevin D. Ashley, *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age*, *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age* (Cambridge: Cambridge University Press, 2017), 1-426, DOI: 10.1017/9781316761380.

²⁷ Corinne Cath, "Governing Artificial Intelligence: Ethical, Legal and Technical Opportunities and Challenges," *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 376, no. 2133 (November 28, 2018): 1–8, DOI: 10.1098/RSTA.2018.0080.

²⁸ Faye Rona Mitchell, *An Overview of Artificial Intelligence Based Pattern Matching in a Security and Digital Forensic Context*, *Cyberpatterns: Unifying Design Patterns with Security and Attack Patterns*, vol. 9783319044 (Springer International Publishing, 2014), 215-222, DOI: 10.1007/978-3-319-04447-7_17/COVER.

The interaction between AI and human wisdom should be seen as a partnership, where each has an important and complementary role to ensure a fair and effective justice system. The importance of the balance between AI and human intervention in the justice system becomes even more apparent when we consider the complexity of legal cases that often involve subjective factors such as motivation, intent, and mitigating circumstances. Notwithstanding AI's capability for providing careful and detailed data analysis, its competence to understand and evaluate these subjective aspects is very limited.²⁹ It is motivated by the fact that AI operates on the basis of algorithms and historical data which are not always able to capture the complexities and unique human dynamics in each case. Moreover, in the legal system, decisions are often based not only on facts but also on legal interpretations and principles of justice. These decisions require critical thinking, ethical considerations, and a deep understanding of the social, cultural, and individual context.

AI has not been able to replace this complex human judgment. Legal decisions often require empathy and moral judgment, something that algorithms cannot represent. Therefore, even though AI brings significant advances in efficiency and accuracy, its role in the justice system should be regarded as a support tool instead of a substitute for human expertise and judgment. AI can assist in sorting through data, predicting potential outcomes, and even identifying details that humans might miss.³⁰ However, the final decision should remain in the hands of legal professionals, who have the ability to consider all aspects of the case, including human nuances and ethical considerations, to ensure that justice is served. This approach ensures that, while utilizing technological advancement, we also maintain the integrity and human values that underpin the justice system. There are several important suggestions worth implementing to ensure that collaboration between robot prosecutors and human prosecutors is effective and ethical:

a. Joint Training and Education

The integration of AI-powered robot prosecutors into the justice system requires synergistic collaboration through comprehensive joint training and education. Human prosecutors must gain a deep understanding of AI principles and algorithms to utilize it effectively, recognize its limitations, and critically assess AI-generated recommendations, such as in evidence evaluation. Simultaneously, AI developers must collaborate attentively with legal professionals to adapt AI technology to the justice system's unique complexities, incorporating legal insights to enhance sensitivity to legal nuances. This co-education fosters a partnership where technology and human expertise complement each other, ensuring AI serves as both an efficient tool and a reliable ally in upholding justice.

b. Oversight and Collaboration

²⁹ Hasan Kadir Yilmaztekin, *Artificial Intelligence, Design Law and Fashion* (London: Routledge, 2022), 1-204, <https://doi.org/https://doi.org/10.4324/9781003355922>.

³⁰ Yadong Cui, *Blue Book on AI and Rule of Law in the World* (Singapore: Springer, 2022), 1-367, <https://doi.org/https://doi.org/10.1007/978-981-19-3586-2>.

Oversight and collaboration between AI and human prosecutors are essential for the ethical integration of AI-based robot prosecutors into the justice system. AI should act as an assistant, providing data-driven recommendations, while human prosecutors serve as supervisors, critically evaluating these suggestions by considering social context, ethical concerns, and legal nuances beyond AI's scope. This collaboration balances technological efficiency with human wisdom. It ensures decisions are fair and contextually informed. Furthermore, it fosters mutual learning, where AI improves its relevance through human input, and prosecutors gain a deeper understanding of AI's capabilities and limitations, enhancing legal practices overall.

c. Setting Clear Boundaries

To ensure the responsible integration of AI in the justice system, authorities must set clear boundaries on its role and function. AI can effectively assist in routine, data-intensive cases like traffic violations, copyright infringement, or financial crimes, where laws are clear and structured. However, for complex cases requiring deep ethical and moral considerations such as murder, crimes against humanity, or human rights issues the role of AI should be limited. These decisions require human judgment to address nuanced social, cultural, and ethical contexts. Defining these boundaries ensures AI is used efficiently while preserving the justice system's integrity and ethical standards.

d. Transparency and Accountability

Transparency and accountability are vital in the integration of AI into the justice system to ensure AI-assisted decisions are accurate, understandable, and fair. Transparency requires that AI recommendations, such as sentencing suggestions, clearly explain the data, criteria, and factors used in its analysis. Accountability ensures prosecutors critically review AI outputs and take responsibility for final decisions, with clear mechanisms to address errors or controversies. Maintaining public trust demands that these processes remain unbiased and equitable, as seen in cases like the biased COMPAS algorithm in the U.S., Amazon's gender-biased hiring tool, and healthcare algorithms that underestimated Black patients' needs. These examples highlight the importance of representative data, oversight, and transparency to mitigate AI bias and uphold justice.

e. Periodic Update and Evaluation

Regular updates and evaluations are fundamental to maintain the effectiveness and relevance of AI in the justice system. AI systems must be consistently updated to reflect changes in legislation, legal precedents, and judicial practices, ensuring their recommendations align with current legal contexts. Periodic evaluations are crucial for detecting and correcting biases or flaws that may arise from the data used to train the AI. This process includes reviewing AI-assisted decisions and datasets to ensure fairness and objectivity. In addition, these evaluations provide insights for

targeted improvements, enhancing the accuracy, reliability, and fairness of AI in judicial applications.

f. Protection of Human Rights

The protection of human rights is a firm foundation for the use of AI in the justice system.³¹ In all aspects of its application, AI must be regulated and managed with the overriding principle of respecting and protecting human rights.³² This means that decisions made or assisted by AI must be consistent with the principles of justice and must be free from any form of discrimination or rights violations.³³ One of the biggest challenges in implementing AI in the legal field is ensuring that these systems are free from bias that might lead to discrimination. Such bias may arise from the data used to train the AI itself which may not fairly represent all groups of society.³⁴ Therefore, it is critical to make sure that training datasets for AI are inclusive and cover a broad range of perspectives, avoiding prejudice against certain groups based on race, gender, religion, or other factors. Understanding that AI should serve as a tool to assist instead of replace human judgment is as important, especially when it comes to decisions with significant impact on human rights.³⁵ In cases involving important decisions such as a person's liberty, privacy, or other civil rights, the final decision should remain in the hands of human prosecutors, who can consider all legal, moral, and ethical aspects in a way that AI cannot. Strict regulation and oversight are also needed to ensure that the use of AI is in line with international human rights standards.

C. Reorganizing the Rules of the Game: Building a Legal and Regulatory Framework for Robot Prosecutors in the Justice System

The discussion regarding the use of robot prosecutors in the judicial system is a new topic in legal discourse in Indonesia. This innovation comes amid the rapid advancements in AI technology, which are beginning to impact various aspects of life, including criminal justice. The greater efficiency and potential objectivity offered by the use of robot prosecutors undeniably present significant opportunities to enhance the performance of the judicial system.

Greater efficiency and potential objectivity brought by the use of robot prosecutors in the justice system does not hide the fact that there are a number of

³¹ Mohamed Gamil Zakaria, "AI Applications in the Criminal Justice System: The Next Logical Step or Violation of Human Rights," *Journal of Law and Emerging Technologies* 3, no. 2 SE-Conference Research (October 4, 2023): 233–57, DOI: 10.54873/jolets.v3i2.124.

³² Jesús Salgado-Criado et al., "A Wide Human-Rights Approach to Artificial Intelligence Regulation in Europe," *IEEE Technology and Society Magazine* 40, no. 2 (2021): 55–65, DOI: 10.1109/MTS.2021.3056284.

³³ Iason Gabriel, "Toward a Theory of Justice for Artificial Intelligence," *Daedalus* 151, no. 2 (May 1, 2022): 218–31, DOI: 10.1162/daed_a_01911.

³⁴ Eirini Ntoutsi et al., "Bias in Data-Driven Artificial Intelligence Systems—An Introductory Survey," *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery* 10, no. 3 (May 1, 2020): 1–14, DOI: 10.1002/WIDM.1356.

³⁵ Nataliia Martsenko, "Artificial Intelligence and Human Rights: A Scientific Review of Impacts and Interactions," *Studia Prawnoustrojowe*, no. 58 (December 19, 2022): 1–10, DOI: 10.31648/SP.8245.

important questions raised regarding human rights that require serious responses.³⁶ First and foremost is the importance of fairness and accuracy. Human rights, as guaranteed under Article 28D(1) of the 1945 Constitution, ensure that every individual is entitled to a fair trial. This right is in line with the fundamental principle of equality before the law, a core value in Indonesia's legal framework.³⁷ The introduction of AI in the justice system must therefore always prioritize fairness and accuracy in every decision made.

The potential errors or biases in AI training data may lead to incorrect or discriminatory outcomes. They pose significant risks to the realization of these rights. In accordance with the Universal Declaration of Human Rights (UDHR), as well as the Law Number 39 of 1999 on Human Rights, any form of unfair treatment or bias is in violation of basic human rights principles. Thus, ensuring that AI systems used in prosecution are free from bias and error requires rigorous research and close monitoring. Furthermore, the values enshrined in Pancasila, particularly the second principle, "Just and Civilized Humanity," emphasize the importance of humane treatment and justice for all individuals. The implementation of robot prosecutors must not compromise these values, and their use must reflect the spirit of Pancasila by upholding human dignity, fairness, and social justice. In this context, AI must be designed and employed with the utmost care, ensuring that it complements human rights protections and the foundational principles of the Indonesian state, as mandated by the 1945 Constitution and Pancasila.

Second, transparency and accountability in the legal system must not be sacrificed. The risk of a 'black box' in AI, where the decision-making process is not fully transparent, raises serious questions about who should be held responsible for any errors that may occur. When an AI algorithm makes decisions that cannot be clearly explained, there must be unresolved issues of responsibility and accountability. Every decision produced by AI should be able to be traced, documented, and accounted for.

In the context of the legal system, transparency in decision-making is essential to guarantee justice and equal treatment to all parties. If a decision cannot be explained or understood by the defendant, attorneys, judges, or the public, the risk of injustice increases. This is aligned with the principle of fairness guaranteed by Article 28D (1) of the 1945 Constitution, which provides every individual the right to fair legal certainty. Regarding accountability, if an AI decision proves to be wrong or biased, the question arises: who is responsible? Is it the technology developers, the

³⁶ Jasper Ulenaers, "The Impact of Artificial Intelligence on the Right to a Fair Trial: Towards a Robot Judge?," *Asian Journal of Law and Economics* 11, no. 2 (August 1, 2020): 1–10, DOI: 10.1515/AJLE-2020-0008/MACHINEREADABLECITATION/RIS.

³⁷ Zico Junius Fernando et al., "Robot Lawyer in Indonesian Criminal Justice System: Problems and Challenges for Future Law Enforcement," *Lex Scientia Law Review* 7, no. 2 (November 14, 2023): 1–24, DOI: 10.15294/LESREV.V7I2.69423.

institution using it, or the individuals operating it? The lack of transparency complicates the determination of accountability and increases the associated risks. Therefore, clear mechanisms must be put in place to ensure that every step of the AI process is traceable and accountable.

Third, in terms of privacy and data protection, the use of AI often involves the collection and analysis of large amounts of data. Thus, they must prioritize the protection of privacy and personal data in accordance with human rights standards. The implementation of AI in the legal system, particularly in criminal justice, poses significant risks if sensitive personal information is mishandled or exploited. The Law Number 27 of 2022 on the Protection of Personal Data outlines clear provisions for safeguarding personal information, which must be strictly followed to prevent violations of privacy. Additionally, Article 28G(1) of the 1945 Constitution guarantees the right to personal protection, including the protection of privacy, which aligns with international human rights frameworks such as the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR). The use of AI in judicial processes must ensure that personal data is collected, stored, and processed with the highest level of security and confidentiality.

There must be robust regulations governing the handling of such data, and any breaches must be met with strict legal consequences to maintain individuals' rights. Transparency in how AI systems handle data and decisions is essential to preserve public trust and uphold privacy rights. In this regard, the principles of Pancasila, particularly the fifth principle: *Social Justice for All the People of Indonesia*, emphasize the importance of fairness and protection for all citizens. The integration of AI must not compromise these values, and every measure should be taken to ensure that the use of big data complies with legal, ethical, and human rights standards.

Fourth, access to justice must remain open to all individuals, including those without technological skills. The implementation of AI in the legal system offers greater efficiency. However, it also carries the risk of creating gaps for those who lack understanding or access to such technology, potentially becoming a barrier to equitable use of the justice system. It is crucial, therefore, to ensure that the use of AI is accompanied by inclusive and accessible mechanisms for all levels of society. The government and judicial institutions must provide technological training, special support, and maintain non-technological alternatives so that everyone can access legal services without difficulty. This approach will ensure that justice remains within reach for all, as mandated by Article 28D(1) of the 1945 Constitution and the principle of social justice in Pancasila. Without these steps, Robot Prosecutors risks widening the gap in access to justice, rather than improving it.

Fifth, the issue of bias and discrimination in AI must be taken critically. AI must be designed and continuously monitored to prevent discrimination against certain groups, especially considering the potential for hidden biases in the training data. AI

systems often rely on vast amounts of data for decision-making, and if the data contains historical biases or reflects discriminatory practices, the AI may unintentionally perpetuate these biases. In the context of justice, this could lead to unfair treatment of marginalized groups, exacerbating existing inequalities. The development and application of AI must therefore include stringent oversight to identify and address any discriminatory patterns early on. Additionally, AI algorithms should be regularly audited to ensure they align with principles of fairness and equality, as guaranteed by Article 28I(2) of the 1945 Constitution, which emphasizes the right to be free from discriminatory treatment.

Furthermore, Pancasila, particularly its second principle: "Just and Civilized Humanity," calls for justice and equal treatment for all individuals. Therefore, AI used in legal systems must reflect these values by ensuring that decisions are impartial and free from bias. This will require ongoing collaboration between technologists, legal experts, and human rights advocates to develop systems that truly uphold the values of fairness and justice. Sixth, conducting human review and oversight of AI decisions, especially those potentially impact human rights, is important to ensure there is a room for reviews and changes by humans if necessary. Finally, increasing legal awareness and education about the use of AI in the legal system is the key to protecting human rights. Both legal professionals and the public must be provided with adequate knowledge about how AI works and its impact on the justice system to ensure that human rights are not merely understood but also protected in this digital era.

Reorganizing the Rules of the Game by establishing a legal and regulatory framework for robot prosecutors in the justice system is a challenge that requires a comprehensive and adaptive legal theoretical approach. From the perspective of positivist legal theory, robot prosecutors must be supported by clear and specific regulations which contain operational boundaries, rights, and obligations, as well as strict accountability mechanisms. These regulations must be codified in law to provide legal certainty and to ensure that the use of this technology is in accordance with existing basic legal and ethical values. In the context of naturalist legal theory, it is important to consider how these robot prosecutors align their actions with broader moral and ethical principles. AI technologies must be designed and operated in a way that respects human dignity, equality, and justice. This requires complex ethical programming and oversight mechanisms that maintain the AI acts in accordance with the values of natural law.

Critical legal theory highlights the necessity to consider the broader social impacts of AI prosecutorial applications. This includes identifying and addressing biases that may exist in AI algorithms, as well as ensuring that the use of this technology does not increase inequality or discrimination in the justice system. In this context, it is essential to have an inclusive dialogue with various stakeholders, including civil society, to confirm that the development and implementation of robot

prosecutors reflect the diversity and needs of society as a whole. Finally, based on pragmatic legal theory, evaluating the effectiveness of robot prosecutors in practical contexts is equally vital. This involves considering how these technologies can effectively integrate with and enhance existing justice systems, and how legal and regulatory frameworks can evolve to respond to technological advances and changing societal needs.

The integration of AI-based robot prosecutors in the Indonesian justice system needs a holistic and dynamic approach to establish the legal and regulatory framework. The first step is to recognize that the integration of AI in the legal field does not only represent a step forward in technology but also a profound paradigm shift that requires the adaptation of legal and ethical norms. The proposed legal framework should explicitly regulate aspects related to the creation, use, and monitoring of AI, with a strong emphasis on protecting human rights, delivering justice, and data security.³⁸ It is important to clearly define the boundaries of responsibility and accountability, especially in the face of potential errors committed by AI, whether in the form of erroneous decisions or data breaches.

This process requires multidisciplinary collaboration that involves experts in law, technology, and ethics who collectively develop a comprehensive and insightful framework. Such framework should be designed with sufficient flexibility, allowing it to adapt to rapid technological advances while providing mechanisms for regular review and revision. This will establish a relevant system, which is responsive and effective in dealing with new developments. Furthermore, the process of integrating AI into the justice system must take into account the applicable basic legal and ethical principles in Indonesia.

The application of these new technologies must reflect technological advances and at the same time, strengthens legal and ethical foundations and enriches the integrity of the justice system. This includes making certain that citizens' rights are protected, that justice is administered fairly and without bias, and that data security and privacy are maintained to the highest standards. This robust and adaptive legal and regulatory framework will be the key to navigating the challenges and exploiting the opportunities offered by AI-based robot prosecutors. Through active collaboration between the government, judiciary, the technology community, and civil society, Indonesia can develop an innovative system yet remain rooted in the values of justice and integrity, leading to a positive evolution in the country's judicial practices.

A concrete example of the application of AI-based robot prosecutors in the Indonesian justice system can be seen in the case review process. AI can be utilized to conduct initial analysis of incoming cases, sort through documents and evidence, and provide initial recommendations based on relevant historical and legal data. In

³⁸ Zarina I. Khisamova, Ildar R. Begishev, and Ramil R. Gaifutdinov, "On Methods to Legal Regulation of Artificial Intelligence in the World," *International Journal of Innovative Technology and Exploring Engineering* 9, no. 1 (2019): 5159–62, DOI: 10.35940/ijitee.A9220.119119.

this case, AI can case resolution by identifying important aspects of a case and presenting a comprehensive summary to human prosecutors. For example, AI can analyze patterns in previous similar cases and suggest possible actions based on legal precedent.

However, the final decision remains in the hands of human prosecutors, who retain ultimate authority in reviewing AI-generated recommendations and making judgments based on legal and ethical considerations. To ensure a robust and adaptive legal framework, the Indonesian government could establish a regulatory body consisting of legal, ethical, and technology experts to regulate the use of AI. This body would be responsible for setting operational standards, monitoring AI performance, and periodically reviewing to ensure that AI is operating in accordance with applicable ethical and legal standards.

As part of ensuring responsibility and accountability, cases handled by AI must be fully auditable. Regulatory bodies must have access to all AI-generated decisions. If errors or violations occur, there must be clear procedures for dealing with them, including the possibility of adjusting or withdrawing the AI from a particular case. This example illustrates how AI technology can be integrated into the Indonesian justice system, enhancing speed and efficiency without compromising fairness and accuracy. Such integration requires a strong and adaptive legal framework with strict oversight to guarantee that this technology is used in a responsible and ethical manner.

D. Conclusion

The implementation of AI in the justice system, as exemplified by robot prosecutors in China, marks a significant innovation in law. These systems, capable of analyzing thousands of variables to file charges, promise enhanced efficiency and accuracy. However, ethical concerns, accountability issues, and human rights considerations must be addressed. If Indonesia decides to adopt similar technology, it should prioritize AI development, legal professional training, the establishment of clear protocols between AI and human operators, and the assurance of transparency. Robot prosecutors, such as “The AI” in Shanghai, highlight the risks of errors and biases, underscoring the necessity for human supervision. Legal decisions require contextual understanding and moral judgment, which remain beyond the current capabilities of AI. Therefore, AI should complement, rather than replace, human prosecutors, focusing primarily on routine and data-intensive tasks. Establishing a robust legal framework is essential to govern AI’s role, ensure accountability, and protect human rights. Transparent oversight mechanisms must be implemented to prevent errors and safeguard defendants’ rights, including the right to appeal. By balancing technological progress with justice and human dignity, AI can enhance efficiency without compromising fairness and individual rights.

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