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AI Judges and the Future Revolution of the Judicial Profession in Indonesia

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Abstract

The implementation of AI in the criminal justice system can enhance efficiency, transparency, and fairness in legal decision-making by efficiently managing information and providing legal considerations based on objective data. In Indonesia, although the Supreme Court has initiated technology-based innovations such as e-Court and Smart Majelis and is considering the concept of AI Judges, technical, legal, and ethical challenges must still be carefully addressed. The application of AI must take into account the specific aspects of Indonesia's legal system, ensure algorithmic transparency, and protect human rights. This research employs a doctrinal (normative) legal approach, utilizing legal materials including primary, secondary, and tertiary sources. The approaches used are the conceptual approach, comparative approach, and

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futuristic approach. The nature of the research is descriptive-prescriptive, and the data analysis method employed is content analysis. The results of the research indicate that the application of AI in Indonesia's judiciary has significant potential to improve efficiency and justice, but must be done cautiously and wisely. AI should be used as a supportive tool for human judges, rather than fully replacing them. The concept of AI Judges, where AI plays a role in legal decision-making, must be accompanied by regulations that ensure transparency, accountability, and the protection of human rights. With a careful and ethical approach, AI can be a significant innovation in the judicial system, helping to achieve faster, simpler, and more efficient justice in line with the fundamental legal principles of Indonesia and the values of Pancasila.

Keywords

AI Judges; Artificial Intelligence in Law; Revolutionizing the Legal Profession; Digital Justice; New Era of Law.

I. Introduction

The development of technology, particularly Artificial Intelligence (AI), has brought significant changes in various aspects of human life. AI is not only used in the industrial and business sectors but is also utilized in criminal justice systems in various countries.[1] The application of AI in the legal system aims to enhance efficiency, accuracy, and objectivity in legal decision-making. One real-world example is the use of the

[1] Madhav Sharma and David Biros, "AI and Its Implications for Organisations," *Information Technology in Organisations and Societies: Multidisciplinary Perspectives from AI to Technostress*, June 11, 2021, 1–24, https://doi.org/10.1108/978-1-83909-812-320211001.

COMPAS system in the United States.[2] COMPAS, or the Correctional Offender Management Profiling for Alternative Sanctions, is an algorithm-based system designed to predict the risk of recidivism or the likelihood that an individual will commit another crime after being released.[3] The system collects and analyzes data related to the background and behavior of offenders, which is then used as one of the considerations by judges in making pre-trial rulings remotely. The application of AI in the criminal justice system raises important questions about the extent to which technology can be used to assist or even replace the role of humans in legal decision-making.[4] In Indonesia, this issue is becoming increasingly relevant with the growing need for judicial reform that is more transparent, efficient, and free from bias. However, the use of AI in Indonesia's criminal justice system still faces various challenges, both from technical, legal, and ethical perspectives. Aspects such as algorithm transparency, fairness in assessment, the protection of fraud victims' rights, and the uniqueness of the Indonesian legal system are important factors that must be carefully considered.[5]

The application of AI in the criminal justice system raises important questions about the extent to which technology can be used to assist or even replace the role of humans in legal decision-making.[6] In Indonesia, this issue is becoming increasingly relevant with the growing need for judicial reforms that are more transparent, efficient,

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[2] Theo Araujo et al., "In AI We Trust? Perceptions about Automated Decision-Making by Artificial Intelligence," *AI and Society* 35, no. 3 (September 1, 2020): 611–23, https://doi.org/10.1007/S00146-019-00931-W.

[3] John-Stewart Gordon, "AI and Law: Ethical, Legal, and Socio-Political Implications," *AI & SOCIETY* 36, no. 2 (2021): 403–4, https://doi.org/10.1007/s00146-021-01194-0.

[4] 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): 489–528, https://doi.org/10.15294/LESREV.V7I2.69423.

[5] Panca Sarjana Putra et al., "Judicial Transformation: Integration of AI Judges in Innovating Indonesia's Criminal Justice System," *Kosmik Hukum* 23, no. 3 (2023): 233–47, https://doi.org/10.30595/kosmikhukum.v23i3.18711.

[6] 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, https://doi.org/10.54873/jolets.v3i2.124.

and free from bias. However, the use of AI in Indonesia's criminal justice system still faces various challenges, including technical, legal, and ethical aspects. Factors such as algorithm transparency, fairness in assessment, protection of victims' rights, and the uniqueness of Indonesia's legal system are important considerations that must be addressed. Essentially, the goal of criminal procedure law is to seek material truth, or the actual truth.[7] Material truth is the actual truth of what has occurred, which can be proven and accepted by all parties involved in the judicial process. In achieving this goal, the Panel of Judges holds a significant responsibility to seek and uncover the true facts, while upholding the principle of "Justice based on belief in the Almighty God." This emphasizes the importance of fairness and moral integrity in the judicial process, ensuring that justice is not only administered but done so with a deep ethical foundation.[8] This principle emphasizes that every decision made by a judge must be based on justice and morality and must be accountable not only to fellow humans but also to God Almighty.[9]

In Indonesia, the system of evidence used is the negative evidence system (negatief wettelijk bewijstheorie), where the basis of proof is founded on the judge's conviction arising from legally recognized evidence that has been proven negatively, as stipulated in Article 183 of the Indonesian Criminal Procedure Code (KUHAP).[10] This system requires judges not only to base their conviction on personal belief but also to be supported by legally valid evidence. Therefore, the application of AI in the criminal justice system must be integrated with the

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[7] Novaldy Franklin Makapuas, "Pencarian Kebenaran Material Dalam Perkara Pidana Melalui Alat-Alat Bukti Yang Sah Menurut Hukum Acara Pidana Indonesia," *Lex Crimen* 8, no. 8 (2019): 106–15.

[8] Nur Fitra Annisa, "Peranan Hakim Sebagai Penegak Hukum Berdasarkan Undang-Undang Nomor 48 Tahun 2009 Tentang Kekuasaan Kehakiman," *LEX ET SOCIETATIS* 5, no. 3 (April 21, 2017): 157–66, https://doi.org/10.35796/LES.V5I3.15588.

[9] Aunur Rohim Faqih, "Kode Etik Dan Pedoman Perilaku Hakim," *In Right: Jurnal Agama Dan Hak Azazi Manusia* 3, no. 1 (2013): 215–17.

[10] Wika Hawasara, Ramlani Lina Sinaulan, and Tofik Yanuar Candra, "Penerapan Dan Kecenderungan Sistem Pembuktian Yang Dianut Dalam KUHAP," *Aksara: Jurnal Ilmu Pendidikan Nonformal* 8, no. 1 (2022): 587–94, https://doi.org/10.37905/aksara.8.1.587-594.2022.

fundamental principles of Indonesia's criminal procedure law to ensure that material truth remains the primary objective in every prosecution. In fact, the Supreme Court (MA) has introduced various technological innovations to provide optimal services in accordance with the principles of a fast, simple, and low-cost judiciary for justice seekers. Some innovations implemented by the MA include e-Court, Electronic Mediation, and the latest one, "Smart Majelis." Smart Majelis is an AI-based application used to automatically select a panel of judges based on several factors, such as jury experience, competence, and workload. The type of case to be tried is also considered to ensure that the chosen judges' expertise aligns with the case at hand.[11] With these factors in place, the process of appointing judges becomes more efficient and accurate. However, this raises an interesting question: if the Supreme Court (MA) has already developed an AI-based application for appointing judges, could AI fully replace the role of judges in the future? This question becomes relevant due to the rapid development of technology.

The use of AI applications such as Smart Majelis demonstrates significant progress in utilizing technology to support the judicial process. This application not only takes into account the judge's experience, competence, and workload but also the type of case to be adjudicated. In this way, the most suitable and competent judge can be automatically selected to handle a specific case, enhancing efficiency and fairness in the judicial process. The use of technology in judicial institutions is driven by the high number of cases compared to the limited number of judges, creating a significant imbalance. The Supreme Court (MA) has taken the initiative to introduce technological assistance through various innovations within the court system. These innovations include e-Court, e-Litigation, electronic mediation, and others. All of these are maximized to support the performance of judges

[11] Ferinda K Fachri, "Kembangkan Aplikasi Penunjukan Majelis, MA Gunakan Artificial Intelligence," https://www.hukumonline.com/, 2023, https://www.hukumonline.com/berita/a/kembangkan-aplikasi-penunjukan-majelis--ma-gunakan-artificial-intelligence-lt63f4542d35bf3/. (Diakses 14 Juni 2024)

and improve efficiency and fairness in the judicial process.[12] This reflects that the idea of a research project titled "AI Judges and the Future Revolution of the Judicial Profession in Indonesia" is not something impossible in the future. The application of technologies like AI in the judicial system shows great potential to address current challenges, such as the imbalance between the number of cases and the number of judges. With continuous technological advancements, a new era of digital justice, with AI becoming an integral part of the judicial process, is increasingly becoming a reality.

II. Method

This research uses a normative legal research method or also known as library research or doctrinal legal research. In this research, various materials are collected and analyzed, including primary, secondary, and tertiary legal materialsTo find answers or solutions to the existing issues, a conceptual approach, a philosophical approach, and a comparative approach are used. The nature of this research is descriptive-prescriptive, with a content analysis of the data or materials used. This research aims to explore how AI can be utilized within Indonesia's judicial system to support the duties and functions of judges. AI can assist in analyzing legal data, provide recommendations based on precedents, and enhance the efficiency of judicial processes. Thus, AI has the potential to revolutionize the legal profession in Indonesia, creating a new era of digital justice that is faster, simpler, and more accessible. The study also compares the application of AI in the judiciary of other countries and evaluates its potential impact on Indonesia's judicial system, while carefully considering ethical aspects, regulations, and data protection.

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[12] Uji Sukma Medianti, "Permudah Penanganan Perkara, MA Rilis Aplikasi Berbasis AI," katadata.co.id, 2023, https://katadata.co.id/berita/nasional/64e2fbd5c54f5/permudah-penanganan-perkara-ma-rilis-aplikasi-berbasis-ai/.

III. The Role of AI in Indonesia's Criminal Justice System: Learning from Other Countries' Experiences

Although there are still doubts regarding the use of AI as a complete replacement for judges, AI has significant potential to be utilized in various aspects of the criminal justice system in Indonesia. The following are some roles that AI can assume based on reflections from its use in other contexts.

1. Information and Document Management

One of the main roles of AI in criminal courts is in organizing and protecting information and documents related to a case. The 'eDiscovery' system used in criminal courts in America is a good example. This system is able to filter relevant information from large amounts of available data, making it easier for lawyers and judges to find the necessary evidence.[13] The 'eDiscovery' (Electronic Discovery) system is a good example of how technology can assist in the judicial process. eDiscovery uses AI technology to filter and analyze information from a vast amount of available data, including emails, digital documents, and other electronic data. This allows lawyers and judges to find relevant evidence more efficiently. With the enormous volume of data in many modern cases, the manual process of sorting and analyzing information can take a long time and require significant resources. eDiscovery accelerates this process and improves efficiency. Furthermore, AI in eDiscovery can identify patterns, keywords, and contexts in the data that might be missed by humans, increasing accuracy and consistency in finding relevant information. In Indonesia, the implementation of a similar system could help reduce the administrative burden of courts, which often consumes time and effort. By automating the process of document search and filtering, courts can

[13] Biodoumoye George Bokolo and Nurettin Selcuk Senol, "The Digital Forensic Approach to EDiscovery BT - Breakthroughs in Digital Biometrics and Forensics," in *The Digital Forensic Approach to EDiscovery*, ed. Kevin Daimi, Guillermo Francia III, and Luis Hernández Encinas (Cham: Springer International Publishing, 2022), 129–46, https://doi.org/10.1007/978-3-031-10706-1_6.

handle case backlogs more efficiently. In legal theory, this efficiency supports the principle of due process of law, where everyone is entitled to a fair and swift legal process.

2. Providing Legal Considerations

AI can also provide legal considerations to judges in deciding criminal cases. Systems like 'COMPAS' in the United States, which predicts the risk of recidivism, can be adapted to predict the outcome of a case and answer legal questions presented.[14] For example, AI can be used to analyze patterns from previous cases and provide recommendations based on that data. In the context of Indonesian criminal law, this can assist judges in making decisions based on data and minimizing bias. According to the predictability theory in law, the use of AI can enhance the consistency of judicial decisions because it is based on systematic and objective data analysis.

3. Assistance in trials

In addition, AI can function as a court assistant. Criminal courts in Shanghai have implemented the '206 System,' which can accept verbal commands to display relevant information, record minutes of hearings, identify speakers, verify conference facts, identify evidence, and provide legal considerations.[15] The implementation of a similar system in Indonesia could enhance efficiency and accuracy in the synchronization process. AI that can understand and respond to verbal commands and manage trial data in real-time can help judges and prosecutors focus on the substantive aspects of the case, rather than administrative ones. In procedural justice theory, the use of AI as a court assistant supports the principles of transparency and accountability, as all steps in the conference are well-documented and can be reviewed.

4. Analysis and Reflection

The implementation of AI in Indonesia's criminal justice system must consider several important aspects. First, algorithmic transparency is crucial to ensure that all parties involved can understand how AI

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[14] Jeff Larson et al, "How We Analyzed the COMPAS Recidivism Algorithm," https://www.propublica.org/, 2023, https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm.

[15] Yadong Cui, Cao Yan, and Liu Yan, "Artificial Intelligence and Judicial Modernization," *Artificial Intelligence and Judicial Modernization*, January 1, 2019, 1–224, https://doi.org/10.1007/978-981-32-9880-4.

works and the basis of each recommendation it provides. This transparency includes explanations of how the algorithm takes in data, processes it, and generates output. For example, in the eDiscovery system in courts, transparency means that lawyers and judges can know what criteria the algorithm uses to filter and assess the relevance of evidence. If the algorithm uses certain factors like keywords, term frequency, or communication patterns, this information should be available and understandable to users. This transparency not only builds trust in the AI system but also allows for the detection and correction of bias or errors in the algorithm. Second, protecting the rights of litigants must remain a top priority. AI systems should be designed in a way that avoids bias and provides equal protection to all parties. Third, the integration of AI into the judicial system must be carried out gradually and be guided by legal and technological experts to ensure compliance with the legal principles applicable in Indonesia.

Estonia is one of the pioneering countries that has developed an e-Justice system using AI to assist in case management and data analysis, thereby reducing case resolution times and improving operational efficiency.[16] In March 2019, the Estonian Ministry of Justice announced its decision to develop AI Judges that will handle the resolution of small claims involving amounts less than €7,000.[17] The trial will be conducted exclusively online, where the parties will upload their elements to the platform, and the case will be triggered by the artificial intelligence tool. This project focuses on contract cases, particularly litigation related to contract termination arrangements and

[16] V R Vatsa and P Chhaparwal, "Estonia's e-Governance and Digital Public Service Delivery Solutions," in *2021 Fourth International Conference on Computational Intelligence and Communication Technologies (CCICT)*, 2021, 135–38, https://doi.org/10.1109/CCICT53244.2021.00036.

[17] Fernando Esteban De La Rosa and John Zeleznikow, "Making Intelligent Online Dispute Resolution Tools Available to Self-Represented Litigants in the Public Justice System: Towards and Ethical Use of the AI Technology in the Administration of Justice," in *Proceedings of the 18th International Conference on Artificial Intelligence and Law, ICAIL 2021* (Association for Computing Machinery, Inc, 2021), 195–99, https://doi.org/10.1145/3462757.3466077.

unpaid claims.[18] In China, AI is used in the form of the robot 'Xiao Fa,' which can provide legal information, assist in drafting legal documents, predict case outcomes, and analyze videos and other digital evidence in judicial processes. Since 2017, China has established three 'Internet Courts' in Beijing, Guangzhou, and Hangzhou to primarily adjudicate cases related to e-commerce, product liability for online sales, and copyright. These fully digital courts are the most advanced of the 'smart courts' established by Chinese authorities nationwide since 2016, as part of a proactive and effective strategy to digitize judicial processes.[19] The court proceedings in the 'Internet Courts' are conducted entirely remotely. The litigating parties can submit and follow the process directly through an application, which is typically available on the popular WeChat platform.[20] Facial recognition is mostly used to identify parties during the process. AI tools assist court officials and judges in most tasks: analyzing documents, searching for precedents, gathering evidence, transcribing trials, drafting legal documents, and more. In the Beijing court, which is among the most advanced, AI is used to automatically generate procedural documents, such as summons.[21] Some courts even use AI Judges, which are actually virtual agents with voices and facial expressions, that can greet parties in the virtual courtroom and assist them, especially in drafting their petitions. They can also assist judges with basic and repetitive tasks, such as answering calls and scheduling appointments. AI is also involved in decision-making, intended to help Chinese judges consistently apply the new principle of 'similar judgments for similar cases,' which has

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[18] Cristina Poncibo and Joseph Weizenbaum, "AI Judges," in *The Cambridge Handbook of Artificial Intelligence, Global Perspectives on Law and Ethics*, 2021, 1–17, https://ssrn.com/abstract=4172472.

[19] Junlin Peng and Wen Xiang, "The Rise of Smart Courts in China: Opportunities and Challenges to the Judiciary in a Digital Age," *Naveiñ Reet: Nordic Journal of Law and Social Research (NNJLSR)*, no. 9 (2019): 345–72, https://supremepeoplescourtmonitor.

[20] Huang-Chih Sung, "Can Online Courts Promote Access to Justice? A Case Study of the Internet Courts in China," *Computer Law & Security Review* 39 (2020): 1–10, https://doi.org/https://doi.org/10.1016/j.clsr.2020.105461.

[21] Caixia Zou, "Application of Artificial Intelligence in Judicial Proceeding in China," in *2020 International Conference on Robots & Intelligent System (ICRIS)*, 2020, 557–60, https://doi.org/10.1109/ICRIS52159.2020.00142.

been implemented by the Supreme People's Court of China (SPC) since the latest round of judicial reforms (from 2014 to 2017).[22] This software provides recommendations by referring to similar previous cases, taking into account the facts, nature of the resolution, and applicable law. In some courts, it is even possible to use applications that automatically draw conclusions. In other courts, such as the Shanghai High People's Court, AI is used not to generate decisions but to correct inconsistencies and ensure that judges fulfill their obligations.

When a decision is issued, the 'abnormal decision warning' program analyzes it and issues a warning if the proposed decision is not sufficiently consistent with previous decisions. This warning is communicated to the judge's superiors. This tool is primarily used in criminal cases to determine whether the sentence proposed or imposed by the judge is in line with previous sentences. The algorithmic decision-making policy applied by Chinese authorities is unique and has been criticized in China. The AI tools used are said to be ineffective and often make mistakes. The software does not always succeed in finding cases that are sufficiently similar to the one being examined. Automatically written decisions are sometimes difficult to understand. In many cases, automatically generated decisions have to be manually completed by judges in the Beijing courts, with some decisions being made by machines while others are made by human judges.

Meanwhile, by the end of 2022, the Crown Courts in England and Wales were handling nearly record-breaking case numbers, with more than 60,000 unresolved cases.[23] AI can dramatically improve court efficiency and reduce case backlogs by providing standardized results more quickly and at lower costs. After all, AI juries don't need breaks. At the same time, AI-driven judicial decision-making can make justice more accessible to much of the population that cannot afford human lawyers. Advocates also argue that algorithms can improve justice

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[22] Cláudia Toledo and Daniel Pessoa, "The Use of Artificial Intelligence in Judicial Decision Making," *Revista de Investigacoes Constitucionais* 10, no. 1 (2023): 1–20, https://doi.org/10.5380/rinc.v10i1.86319.

[23] Adrian Zuckerman, "Artificial Intelligence – Implications for the Legal Profession, Adversarial Process and the Rule of Law," UK Constitutional Law Association, 2020, https://ukconstitutionallaw.org/2020/03/10/artificial-intelligence-implications-for-the-legal-profession-adversarial-process-and-the-rule-of-law/.

because 'AI judges strictly follow precedent, limit undue judicial discretion, prevent individual judge bias and personal preferences, handle large amounts of information, solve complex calculative balances, and find statistical representations of fact patterns and legal factors.' Moreover, when AI tools assist human judges, they can prompt relevant legal provisions through comprehensive data searches. This can improve judges' understanding of the case, helping them avoid one-sided access to data and information.

At this point, it is important to explain the various ways AI is implemented in courtrooms. At a basic level, AI can be used for additional administrative functions. This includes communication among judicial personnel, resource and case allocation, and ensuring anonymization of judgments, documents, or court data. These activities may seem separate from the core of judicial decision-making, but they carry subtle nuances. For instance, assigning cases to specific judges, considering their unique expertise or biases, can indirectly influence the final outcome. Nevertheless, the primary goal of these AI-driven tasks remains administrative, aimed at streamlining judicial processes rather than directly determining case outcomes.

In a philosophical context, the use of AI in the system raises fundamental questions about the nature of justice, legal authority, and the role of humans in legal decision-making. One central concept in legal philosophy is distributive justice, which emphasizes the fair distribution of rights and responsibilities. AI, with its ability to analyze data objectively and reduce bias, can contribute to a fairer distribution of justice. However, AI also presents ethical challenges related to accountability and transparency. In legal philosophy, moral responsibility in decision-making is a crucial element that may be difficult for AI systems to fulfill, given that AI lacks consciousness or moral understanding.

Furthermore, legal philosophy also considers the concept of retributive justice, which focuses on delivering fair punishment for legal violations. AI can help ensure more consistent sentences based on precedent, but this also raises concerns about AI's ability to understand context and unravel complex cases. The philosophical approach to law also explores procedural justice, which emphasizes the importance of fair and transparent processes in the legal system. The gradual

implementation of AI must ensure that legal processes remain transparent and auditable, and that AI-driven decisions are accountable. Overall, the use of AI in Indonesia's judicial system not only offers great potential to improve efficiency and justice but also provides profound philosophical reflections on the nature of justice and the role of humans in law. A careful and ethical approach is needed to ensure that AI is used as a supportive tool, not a replacement, for human judges in upholding justice.

IV. AI Judges: Breakers and Transformers of Law Enforcement Reform Based on Pancasila Values

The rapid development of Artificial Intelligence (AI) technology has triggered various significant changes in many aspects of human life, including in the field of law. One interesting phenomenon is how some countries have begun to treat AI as a legal subject. A notable example of this is Saudi Arabia's 2017 announcement granting citizenship to a robot named Sophia.[24] This action not only set a new precedent in international law but also opened discussions about the legal status and rights of non-human entities. Saudi Arabia granted citizenship to Sophia, a humanoid robot, in a move seen as a symbol of the country's commitment to innovation and technology. Sophia, created by Hanson Robotics, became the first robot to be recognized as a citizen. This action raised various legal and ethical questions, particularly regarding the rights and obligations attached to the status of citizenship for non-human entities.[25]

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[24] Ugo Pagallo, "Vital, Sophia, and Co.—The Quest for the Legal Personhood of Robots," *Information 2018, Vol. 9, Page 230* 9, no. 9 (September 10, 2018): 1–11, https://doi.org/10.3390/INFO9090230.

[25] Tyler L Jaynes, "Legal Personhood for Artificial Intelligence: Citizenship as the Exception to the Rule," *AI & SOCIETY* 35, no. 2 (2020): 343–54, https://doi.org/10.1007/s00146-019-00897-9.

In legal theory, a legal subject is an entity that has rights and obligations within the legal order. Traditionally, legal subjects consist of individuals (natural persons) and legal entities (corporations, organizations).[26] However, as AI develops, the question arises as to whether AI can or should be considered a legal subject. Some legal figures and important theories in this context support the recognition of AI as a legal subject. Hans Kelsen, with his pure theory of law, asserts that law is a system of norms consisting of interrelated rules. In this framework, a legal subject is an entity that can have rights and obligations regulated by these norms. If AI is recognized as a legal subject, then AI must comply with applicable legal norms. John Searle, in his philosophy of law and artificial intelligence, through the 'Chinese Room Argument,' states that machines, including AI, do not possess understanding or consciousness, but merely process symbols based on pre-programmed rules.[27] However, from a functional perspective, AI can be considered to have a role similar to that of a legal subject due to its ability to perform tasks governed by law. The theory of Legal Personhood also supports the recognition of AI as a legal subject. This theory discusses the legal status of non-human entities, such as corporations, which have been recognized as legal subjects with certain rights and obligations.[28] Granting citizenship to Sophia can be seen as a step toward recognizing AI as an entity with legal rights and obligations, similar to legal entities. This reflects the view that entities capable of performing relevant functions within the legal system can be recognized as legal subjects.

Granting citizenship to AI like Sophia presents both strengths and challenges. Legally, a clear framework is needed regarding the rights and obligations attached to the legal status of AI, including legal

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[26] E. Fernando M. Manullang, "Subjek Hukum Menurut Hans Kelsen Dan Teori Tradisional: Antara Manipulasi Dan Fiksi," *Jurnal Hukum Dan Peradilan* 10, no. 1 (2021): 139–54, https://doi.org/10.25216/jhp.10.1.2021.139-154.

[27] John Mark Bishop, Slawomir J Nasuto, and Bob Coecke, "'Quantum Linguistics' and Searle's Chinese Room Argument BT," in *Philosophy and Theory of Artificial Intelligence*, ed. Vincent C Müller (Berlin, Heidelberg: Springer Berlin Heidelberg, 2013), 17–28, https://doi.org/10.1007/978-3-642-31674-6_2.

[28] Roman Dremliuga, Pavel Kuznetcov, and Alexey Mamychev, "Criteria for Recognition of AI as a Legal Person," *Journal of Politics and Law* 12, no. 3 (2019): 105–12, https://doi.org/10.5539/jpl.v12n3p105.

responsibility if AI makes mistakes or causes harm. From an ethical standpoint, there are questions about the morality and responsibility of granting rights to an entity that lacks human consciousness or morality. The prospect of AI Judges brings both excitement and concern. Some argue that only humans possess the reasoning, intuition, and empathy necessary to analyze or adjudicate a case. Since 1976, Joseph Weizenbaum, creator of Eliza a computer program designed by Joseph Weizenbaum in the mid-1960s at the Massachusetts Institute of Technology (MIT) has raised similar concerns.[29] ELIZA was one of the first artificial intelligence programs capable of interacting with users in the form of text-based conversations. The program used a technique called 'natural language processing' to simulate conversation between humans. Joseph Weizenbaum, its creator, firmly stated that important decisions should not be left to machines, which are severely lacking in human qualities such as compassion and wisdom.[30]

On the other hand, it can be argued that courts would be mistaken to ignore the possibilities opened by artificial intelligence tools, whose capabilities are expected to increase rapidly in the future. In reality, the question of using AI in the judicial system should be posed in a more nuanced manner, without considering dystopian scenarios like the highly unlikely AI Judges depicted by Trevor Noah in a famous episode of The Daily Show.

Instead, the question is how courts can benefit from increasingly sophisticated machines. To what extent can these tools assist them in upholding justice? What is their contribution in terms of decision support? Can humans seriously consider delegating the entire power of judicial decision-making to a machine? These questions are highly relevant and demand thoughtful consideration. While AI technology can provide greater efficiency and consistency in some aspects of administration and data analysis, certain aspects of the judicial process, such as empathy and moral judgment, remain the domain of humans.[31]

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[29] Joseph Weizenbaum, "ELIZA-A Computer Program for the Study of Natural Language Communication Between Man and Machine," *Communications of the ACM* 9, no. 1 (1966): 36–45, https://doi.org/10.1145/365153.365168.

[30] Poncibo and Weizenbaum, "AI Judges."

[31] Tania Sourdin and Richard Cornes, "Do Judges Need to Be Human? The Implications of Technology for Responsive Judging BT," in *The Responsive Judge:*

Therefore, the use of AI in the judiciary must be done carefully and wisely, ensuring that the technology supports and enhances, rather than replaces, the crucial role played by human judges in upholding justice.[32]

The courts must consider how increasingly sophisticated AI tools can be used to support judicial decisions without replacing human judges. Thus, AI can help improve efficiency and fairness in the judicial system, while human judges continue to play the primary role in evaluating cases with the empathy and wisdom that machines do not possess.[33] The implementation of artificial intelligence (AI) in the judicial system raises fundamental questions related to technical, legal, and desirability aspects. As algorithms become more sophisticated, the likelihood of them generating recommendations that judges may follow increases. This brings the prospect that total automation in judicial decision-making may become an inevitable reality in the future. However, several important factors need to be analyzed before concluding that AI Judges are a desirable solution.

Sophisticated algorithms have the capability to deeply analyze data and provide accurate recommendations. In some jurisdictions, algorithms have been used to assist judges in analyzing precedents, managing documents, and even predicting case outcomes based on previous data patterns. However, this sophistication brings challenges in terms of judicial reliance on algorithmic recommendations. If judges become overly dependent on algorithmic recommendations, there is a risk that they may lose their independence in decision-making and fall into 'judicial conformity,' where decisions are made solely based on algorithms without considering the nuances and context of the case in its entirety.

International Perspectives, ed. Tania Sourdin and Archie Zariski (Singapore: Springer Singapore, 2018), 87–119, https://doi.org/10.1007/978-981-13-1023-2_4.

[32] Changqing Shi, Tania Sourdin, and Bin Li, "The Smart Court – A New Pathway to Justice in China?," *International Journal for Court Administration* 12, no. 1 (2021): 1–19, https://doi.org/10.36745/ijca.367.

[33] Theressa Gracita Anthony, "Peluang AI Menggeser Posisi Hakim Di Pengadilan," https://www.kompasiana.com/, 2023, https://www.kompasiana.com/theressa81907/646a2e7437cb2a6e5a7f0f92/peluang-ai-menggeser-posisi-hakim-di-pengadilan.

In Europe, the use of algorithms in judicial decision-making is strictly regulated by laws such as the GDPR (Article 22) and the Law Enforcement Directive (Article 11). Both regulations prohibit decisions that are 'solely' based on automated processes that may have a significant impact on the individuals involved.[34] However, these regulations still provide room for exceptions and allow national laws to deviate from the rules. These exceptions indicate that despite the prohibition, there is still a possibility that automation in judicial decision-making could be implemented under certain conditions. The desirability aspect of using AI judges is not only related to technical and legal feasibility but also to ethical considerations and social impact. The use of AI in judicial decision-making must take into account justice, transparency, and accountability. Decisions made by AI must be explainable and accountable, and must be free from biases that could harm certain parties.[35] In addition, it must be ensured that the use of AI does not entirely replace the role of humans, but instead supports and enhances the capabilities of judges in upholding justice. Thus, total automation in judicial decision-making using AI seems inevitable as technology advances. However, various aspects need to be considered before reaching that stage. Strict regulations are needed to ensure that the use of AI in the judiciary continues to adhere to the principles of justice and transparency. Moreover, ethical considerations and desirability must be a top priority to ensure that AI is used as a supporting tool that strengthens, rather than replaces, the role of human judges. With a careful and prudent approach, AI can become a significant innovation in the judicial system, improving efficiency and fairness without sacrificing the fundamental values of the legal process.

The application of artificial intelligence in the judicial system can be related to the values of Pancasila, which is the philosophical

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[34] Henni Parviainen, "Can Algorithmic Recruitment Systems Lawfully Utilise Automated Decision-Making in the EU?," *European Labour Law Journal* 13, no. 2 (April 25, 2022): 225–48, https://doi.org/10.1177/20319525221093815.

[35] Vincent Chiao, "Fairness, Accountability and Transparency: Notes on Algorithmic Decision-Making in Criminal Justice," *International Journal of Law in Context* 15, no. 2 (2019): 126–39, https://doi.org/DOI: 10.1017/S1744552319000077.

foundation of Indonesia. In this context, there are several relevant connections:

1. Justice (Justitia)
   Social justice is a fundamental principle in Pancasila. The application of AI in the judiciary can play a pivotal role in promoting equal access to justice. AI systems can improve the objectivity and impartiality of legal decisions by reducing biases that often arise from human prejudice or extraneous factors. However, careful implementation is crucial to ensure that AI enhances rather than detracts from fairness, as its algorithms must be transparent and free from discriminatory practices.
2. Democracy (Demokratie)
   The principle of democracy in Pancasila emphasizes the importance of societal participation in governance and decision-making. While AI can assist judges in analyzing vast amounts of data and providing recommendations, the ultimate responsibility for delivering justice must still lie with human judges, who can weigh broader democratic values and the collective wisdom of society. This ensures that AI serves as a tool, not a replacement for human judgment, maintaining the people's voice in judicial processes.
3. A Just and Civilized Humanity (Humanität und Zivilisiertheit)
   AI technology must uphold human dignity and reflect the value of humane treatment central to Pancasila. Algorithms should not solely rely on data-driven patterns but must also consider moral, ethical, and cultural contexts. Ensuring that AI respects human rights and contributes to fair and civilized decision-making processes will prevent mechanistic rulings that ignore the complexities of human experiences.
4. Unity of Indonesia (Einheit)
   The application of AI in the judicial system has the potential to foster unity by delivering consistent, unbiased decisions that apply uniformly across Indonesia's diverse legal and cultural landscape. This consistency can strengthen the public's trust in the judiciary, as decisions based on AI, when properly calibrated, can help eliminate regional or societal disparities, fostering national cohesion through equal legal treatment.

The implementation of artificial intelligence in the judicial system must consider the values of Pancasila to ensure that this technology is used correctly and aligns with the principles upheld by Indonesian society. The successful use of artificial intelligence in the judiciary can bring great benefits in improving efficiency, justice, and legal certainty, provided it is done with balanced attention to ethical, legal, and social aspects.

V. Integration of AI Judges in the Justice System: Opportunities & Challenges

In 1956, the Dartmouth Conference officially introduced the concept of 'artificial intelligence' (AI).[36] In recent years, with the emergence and development of big data and artificial intelligence technology, human society seems to have suddenly entered a new intelligent era, and China's judicial community appears to have closely followed the trend of artificial intelligence. Currently, major projects such as smart courts, smart inspections, and others have been fully launched in China. Examples include the 'smart court navigation system' and the 'intelligent push system' launched by the Supreme People's Court in 2018, the 'Rui Judge' intelligent research system in Beijing, the '206' smart criminal case support system in Shanghai, the 'Smart Trial 1.0' support system in Hebei, and other artificial intelligence products launched by local courts. These initiatives have not only comprehensively improved judicial efficiency but also provided convenient and efficient technical support for judges in performing their duties.[37]

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[36] R Kline, "Cybernetics, Automata Studies, and the Dartmouth Conference on Artificial Intelligence," *IEEE Annals of the History of Computing* 33, no. 4 (2011): 5–16, https://doi.org/10.1109/MAHC.2010.44.

[37] Yifeng Liu and Yuqing Zhong, "On the Application of Artificial Intelligence Technology in the Field of Judicial Adjudication," *ACM International Conference Proceeding Series*, October 23, 2021, 1029–32, https://doi.org/10.1145/3495018.3495327.

In the implementation of these programs, judicial artificial intelligence plays a key role and carries out important missions, but at the same time, it also faces various issues and challenges. Human judges, once considered one of the professions least likely to be replaced by machines, now face the challenge of relinquishing some decision-making power as the application of judicial artificial intelligence becomes more advanced and widespread. Some scholars have suggested that if artificial intelligence can make convincing arguments and surpass human judges in writing judgments, then AI, which is more reliable and cost-effective than humans, should be considered as judges.[38]

Currently, the application of some artificial intelligence in judicial practice has demonstrated better accuracy than human judges' predictive accuracy. For example, an algorithm developed by the Illinois Institute of Technology and the University of South Texas, based on Supreme Court data from 1791 to 2015, predicted the decisions and votes of Supreme Court judges from 1815 to 2015 with an accuracy of 70.2% and 71.9%, surpassing the 66% prediction accuracy of legal experts.[39] However, judicial artificial intelligence also has inherent limitations. It is not easy for algorithm-based decision-making to achieve absolute objectivity and precision. When dealing with complex and difficult cases, artificial intelligence may be able to promote formal justice, but it is challenging to achieve substantive justice. Therefore, it is important to rationally view the challenges brought by judicial artificial intelligence and accept the reality that the era of artificial intelligence is approaching. Active efforts must be made to promote the transformation and enhancement of the role and function of judges to respond to new demands for the judicial role in the era of artificial intelligence.

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[38] Yugo Hayashi and Kosuke Wakabayashi, "Can AI Become Reliable Source to Support Human Decision Making in a Court Scene?," in *CSCW 2017 - Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (Association for Computing Machinery, Inc, 2017), 195–98, https://doi.org/10.1145/3022198.3026338.

[39] Zichun Xu, "Human Judges in the Era of Artificial Intelligence: Challenges and Opportunities," *Applied Artificial Intelligence* 36, no. 1 (December 31, 2022): 1–22, https://doi.org/10.1080/08839514.2021.2013652.

In France, the use of assessment tools in judicial decision-making has been prohibited since the French Data Protection Act was adopted in 1978. Article 47, paragraph 1, and Article 95, paragraph 1 of this law state that "no judicial decision involving an assessment of a person's behavior may be based on the automatic processing of personal data intended to evaluate certain aspects of that person's personality."[40] This latest interpretation would be more consistent with Article 4-3 of the Law of 18 November 2016, which states that online conciliation, mediation, or arbitration services "must not be based solely on algorithmic or automatic processing of personal data." In the French legal system, dispute resolution is supposed to be achieved through deductive reasoning from written and general rules, although all French lawyers, including judges, carefully study precedents. In this context, algorithms can provide new insights to French judges regarding their own jurisprudence. These algorithms can offer a better understanding of the practices of first-instance judges, which are rarely known, unlike the decisions of the Court of Cassation, which are published and carefully studied. Algorithms can also make judges aware of their own biases or potential errors and encourage them to make better decisions. Thus, algorithms can contribute to the harmonization of law and help achieve legal certainty, predictability, and equal treatment of citizens.

In 2020, the Ministry of Justice launched the Datajust project for this purpose. The Datajust algorithm processes data extracted from appellate decisions issued between 2017 and 2019.[41] The purpose of the Datajust project is to provide non-binding benchmarks for litigants and judges, and to encourage out-of-court settlements. Some French authors have highlighted the risk that judges might systematically align themselves with algorithm-generated outcomes, falling into "judicial conformity" by endlessly producing the same solutions. However, it can be argued that the most advanced algorithms focus primarily on the reasoning followed by judges in previous decisions and are capable of

[40] Malcolm Langford, "France Criminalises Research on Judges," *Verfassungsblog: On Matters Constitutional*, June 22, 2019, 1–4, https://doi.org/10.17176/20190622-232658-0.

[41] Matthew A Jay et al., "Innovative Use of Administrative Data in Legal Research and Practice," *International Journal of Population Data Science* 5, no. 5 (2020): 1–10, https://doi.org/10.23889/ijpds.v5i5.1504.

recommending innovative solutions. Additionally, the risk of standardizing decisions must be balanced to the extent that large-scale data analysis allows for a high degree of personalization. Nevertheless, there are legitimate concerns about the influence that algorithmic tools may have on judicial decisions and the prospect of judges relinquishing their independence in favor of technology.

Proper regulation is required to ensure the quality and transparency of algorithms within the judicial system. Judges and litigants must be provided with complete information about the methodology and design of the algorithms used. In France, decisions made based on algorithmic recordings must include an explicit statement informing the affected person, enabling them to obtain information regarding the software rules and its key characteristics (Article L311-3-1 of the Code of Relations between the Public and the Administration). In July 2020, French authorities, including the vice president of the Conseil d'État, the President of the National Bar Council, and the President of the Ordre des avocats au Conseil d'État et à la Cour de Cassation, signed a joint declaration agreeing to commit to five principles set out in the "European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their Environment." They also established a system to regulate and control the algorithms used for institutional data, including the creation of a public authority responsible for overseeing this control. Such regulations are expected to come from the implementation of the European Artificial Intelligence Act, which classifies algorithms in the judicial field as high-risk systems.

The use of artificial intelligence (AI) in judicial systems raises fundamental questions related to human rights. The European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their Environment emphasizes the importance of respecting fundamental human rights enshrined in various international conventions. The European Convention on Human Rights (ECHR) guarantees the right to a fair trial and equal treatment before the law, as outlined in Article 6 and Article 14.[42] Therefore, the use of AI in the judiciary must ensure

[42] Alaa Mohamed Ismail Abdrabo, "The Right to a Fair Trial before The European Court of Human Rights," *Economics, Law and Policy* 2, no. 2 (2019): p133, https://doi.org/10.22158/elp.v2n2p133.

that these principles, particularly those related to transparency and accountability of decisions made by AI systems, are upheld. Experts and various human rights conventions have expressed concerns that the use of AI in the judiciary could threaten the right to a fair trial if not properly regulated. The UN Human Rights Committee, in General Comment No. 32, states that judicial decision-making must be carried out by independent and impartial parties. In this context, AI should be seen as an aid, not a replacement, for human judges. This view aligns with the principle that decisions affecting a person's life should remain in human hands to ensure the consideration of complex empathy and morality.

A strict regulatory framework must ensure that the process of developing and implementing AI in judicial systems involves various stakeholders, including legal experts, technologists, and civil society representatives. This is important to maintain accountability and prevent bias that may be embedded in AI algorithms. Additionally, there must be independent oversight mechanisms to continuously assess AI's performance and impact. Algorithm transparency is a crucial aspect that needs attention. Algorithms used in judicial systems must be auditable and explainable, so the decisions they generate can be held accountable. This means AI developers and users must be prepared to disclose how the algorithm works and how decisions are made, including the parameters and data used.

The right to challenge AI decisions is another principle that must be incorporated into regulations. Individuals affected by AI decisions must have access to an effective appeal process, where they can request a human review. This ensures that their fundamental rights are protected and that decisions made by AI can be corrected if found to be wrong or unfair. Therefore, to ethically and responsibly integrate AI into the judicial system, a combination of strict regulation, transparency, accountability, and independent oversight is required. This aims to ensure that the use of AI not only enhances the efficiency and effectiveness of the judiciary but also safeguards human rights as a whole.

The application of AI in judicial systems requires a stringent regulatory framework to ensure that fundamental human rights are protected. This regulation should include oversight of the transparency

and accuracy of algorithms used by AI. Additionally, it is essential for the regulation to grant individuals the right to know and challenge AI-generated decisions. Thus, AI can be used to strengthen, rather than replace, the fundamental principles of justice and human rights in the judicial system.

In Indonesia, the potential use of AI as a judge or as an assistive tool in legal processes offers opportunities to enhance efficiency, transparency, and justice within the judicial system.[43] AI has the ability to analyze large amounts of data quickly, allowing it to help accelerate the decision-making process in legal cases, categorize and organize legal documents, predict case outcomes based on legal precedents, and provide recommendations based on the available data.[44] Additionally, the use of AI can enhance transparency by reducing human bias and ensuring that decisions are based on objective data. AI can also help identify patterns and trends that may not be visible to humans, thereby reducing errors and improving accuracy in law enforcement. With AI, access to legal services can improve, particularly for those in remote or underserved areas. AI can provide basic legal services, such as legal advice and mediation, through digital platforms that are easily accessible to the wider public.

To effectively adapt the use of AI in Indonesia's judicial system, several key strategies need to be implemented. First, it is essential to formulate a clear regulatory framework that guarantees transparency, accountability, and non-discrimination. Second, the development and implementation process of AI must involve a wide range of stakeholders, including legal experts, technologists, academics, and civil society representatives. Training and education for judges, prosecutors, and lawyers on the use of AI should also be provided. Additionally, building the necessary technological infrastructure to support AI integration, including strong cybersecurity measures, is crucial. Algorithm and data

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[43] Alfonso Renato Vargas-Murillo et al., "Transforming Justice: Implications of Artificial Intelligence in Legal Systems," *Academic Journal of Interdisciplinary Studies* 13, no. 2 (2024): 433–43, https://doi.org/10.36941/ajis-2024-0059.

[44] Enas Mohamed Ali Quteishat, Ahmed Qtaishat, and Anas Mohammad Ali Quteishat, "Building a Predictive Model for Legal Studies through Ensemble Learning Techniques," *International Journal of Religion* 5, no. 2 (2024): 90–101, https://doi.org/10.61707/497t9n49.

transparency must be ensured by making sure that the algorithms used are auditable and explainable, and that the data used is free from bias. Moreover, there must be complaint and appeal mechanisms allowing individuals to challenge and appeal AI decisions, with human review involved in the appeal process to ensure fairness. To improve public access and understanding, disseminating information and increasing digital literacy is essential, enabling the public to access AI-based legal services. Lastly, Indonesia can learn from other countries that have implemented AI in their judicial systems through international collaboration and the adoption of best practices. By implementing these measures, Indonesia can integrate AI into its judicial system effectively and ethically, ensuring that this technology is used to enhance efficiency, transparency, and justice without compromising human rights.

The use of AI in judicial systems offers numerous opportunities to improve efficiency, transparency, and justice. However, it is important to emphasize that AI cannot replace the role of human judges, but rather functions as a support tool that aids judicial decision-making processes. This perspective aligns with internationally recognized human rights (HR) principles, as set forth in the European Convention on Human Rights (ECHR) and various general comments from the UN Human Rights Committee. AI has the ability to quickly analyze large volumes of data, which can expedite the decision-making process in legal cases. AI can categorize and organize legal documents, predict case outcomes based on legal precedents, and provide recommendations based on available data, thereby improving efficiency and reducing the workload on human judges. Additionally, the use of AI can enhance transparency by reducing human bias and ensuring that decisions are based on objective data. However, the transparency of the algorithm itself must be maintained; algorithms must be auditable and explainable to ensure accountability.

According to General Comment No. 32 from the UN Human Rights Committee, judicial decision-making must be carried out by independent and impartial parties. Human judges bring complex considerations of empathy and morality into the decision-making process, which cannot be fully replicated by AI. Therefore, decisions that affect a person's life should remain in human hands to ensure such

considerations are accounted for. The application of AI in law enforcement must be supported by a strict regulatory framework to ensure that fundamental human rights are protected. This regulation should include oversight of the transparency and accuracy of algorithms, as well as provide individuals with the right to know and challenge decisions made by AI. Complaint and appeal mechanisms must exist, allowing individuals to review AI decisions with human judgment.

AI can also improve access to legal services, particularly for those in remote or underserved areas. Through digital platforms, AI can provide basic legal services, such as legal advice and mediation, that are easily accessible to the public, helping to reduce disparities in access to justice. Theoretically, the application of AI in law should be seen as an effort to strengthen, not replace, the role of human judges. AI should be used as a tool to enhance efficiency and accuracy while respecting the fundamental principles of justice and HR. Human judges must retain final control over judicial decision-making to ensure that complex considerations of empathy, morality, and justice are upheld. Thus, AI can serve as a significant support in judicial systems, while ensuring that fundamental human rights are protected and upheld.

VI. Conclusion

The implementation of Artificial Intelligence (AI) in the judicial system, particularly in criminal justice, has the potential to enhance efficiency, transparency, and fairness in legal decision-making. AI can assist in managing information and documents, provide legal insights based on data analysis, and support trial processes with greater accuracy and efficiency compared to conventional methods. Experiences from countries like the United States, China, and Estonia demonstrate the significant role AI can play in judicial processes, despite challenges related to transparency, fairness, and human rights protection. In Indonesia, the use of AI in the criminal justice system is highly relevant to support judicial reforms aimed at

being more transparent, efficient, and unbiased. The Supreme Court has initiated technology-based innovations such as e-Court and Smart Majelis. However, the full implementation of AI faces technical, legal, and ethical challenges. AI can efficiently manage documents, as demonstrated by the eDiscovery system in the United States, or provide legal insights from case patterns, supporting more consistent decisions. As a court assistant, AI systems like Shanghai's System 206 can manage real-time trial data. However, algorithm transparency and the protection of all parties' rights must be guaranteed. The application of AI in Indonesia must consider the country's unique legal system, including the negative proof system and the principle of justice based on faith in God Almighty. AI must align with the fundamental principles of criminal procedure law to ensure the pursuit of material truth. Human rights protection and fairness in judgment must also remain top priorities. Ethical issues surrounding AI include accountability, transparency, and human rights protection. AI systems must be designed to respect human dignity and produce fair, non-discriminatory decisions. Strict regulations are needed to ensure algorithm transparency and grant individuals the right to know and challenge AI decisions. The use of AI in Indonesia's judiciary holds great potential to improve efficiency and justice but must be implemented carefully and wisely. AI should serve as a supporting tool for judges, not replace them entirely. The concept of AI Judges, where AI takes part in legal decision-making, must be accompanied by regulations ensuring transparency, accountability, and human rights protection. With an ethical approach, AI can be a significant innovation, helping to achieve justice that is faster, simpler, and more accessible in line with Indonesia's legal principles and the values of Pancasila.

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