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Research Article

Artificial Intelligence and Judicial Values: A Review of Indonesia's Supreme Court in Light of the U.S. Experience

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ABSTRACT: This study examines the transformative potential of artificial intelligence (AI) in the Indonesian judiciary, focusing on how its integration can enhance the efficiency and accessibility of the legal system. As the Indonesian Supreme Court begins incorporating AI into its case management and litigation processes, this research investigates how such advancements can streamline legal procedures, improve case handling, and promote equitable access to justice for all citizens, including vulnerable groups. To review AI adoption through several core judicial values, this article draws on the U.S. experience to identify risks and advantages. Ultimately, this research contributes to the discourse on AI and judicial values, particularly in jurisdictions seeking to balance technological innovation with accountability, equality, fairness, and access to justice.

KEYWORDS: Artificial Intelligence, Effective judiciary, Indonesia, United States.

I. INTRODUCTION

AI refers to a computer system that can learn, reason, and act in ways comparable to human intelligence.[1] With advances in technology, AI is not only supporting human roles but also being employed to replace them across various sectors.[2] In the legal field, AI systems have been developed to support legal professionals across many areas of their work, including legal research and analysis, contract drafting, predictive analytics, and document automation. Traditionally, legal research involved manually sifting through extensive volumes of case law, statutes, and legal opinions to find relevant information and precedents. Nonetheless, AI-

1 Muhammad Pasha Nur Fauzan et al, "Wandering with Artificial Intelligence and Its Obscure Legal Liability" (2021) 11:2 Indonesia Law Review at 170.
2 Rio Christiawan, *Aspek Hukum Startup* (Jakarta: Sinar Grafika, 2022) at 21.

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powered tools can now swiftly and accurately analyze and interpret vast amounts of legal data, significantly cutting down the time and effort required for legal research.[3]

Many countries have incorporated groundbreaking advancements in intelligent technology into their judicial systems. Smart software now assists judges by retrieving legal data, guiding comprehensive evidence collection and review according to established standards, and even predicting verdicts and drafting judgments. The use of artificial intelligence in the judiciary aligns with the expectations of legal professionals and the public for more efficient and informed justice. Judicial AI tools enhance trial efficiency and assist in legal drafting.[4]

In China, smart courts represent a third phase of judicial transformation, reflecting a shift toward more advanced integration of technology. They emphasize the use of information technology to develop a judicial system that is open, dynamic, transparent, and accessible, to enable the public to better understand, trust, and oversee the administration of justice.[5] In addition, Australia and the United States have also built AI systems that have been tested and deployed in litigation.[6]

The Indonesian Supreme Court reported that a total of 30.763 cases were resolved in 2024. This performance is further evidenced by the Court's ability to maintain an on-time archiving rate above 90 percent since 2023.[7] This indicates improvements in judicial administration. Nevertheless, it also presents challenges, particularly in maintaining transparency in case management. Transparency is a crucial principle in the justice system, ensuring that all parties involved receive accurate, timely, and reliable information. To address this challenge, the Supreme Court has initiated the development of an Artificial Intelligence (AI)-based application to assist in assigning Justices for cassation and judicial review cases.[8]

In addition, the Supreme Court is currently developing a system for appointing judicial panels using technology, specifically by leveraging AI to match cases with the types and qualifications of cases and the workload of the Supreme Court judges. In the future, it is hoped that case distribution can be done randomly, while still being proportional to the workload of the Supreme Court judges. According to the Chief Justice of the Supreme Court, the use of this artificial intelligence system will continue to be developed, including in first-

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3 Sheeba N, "Artificial Intelligences Effects on the Legal Sector Transforming Legal Practice" (2023) 2:7 International Journal for Legal Research & Analysis at 4-5.

4 Gulimila Aini, "A Summary of the Research on the Judicial Application of Artificial Intelligence" (2020) 9:1 Chinese Studies at 15.

5 Changqing Shi, Tania Sourdin & Bin Li, "The Smart Court - A New Pathway to Justice in China?" (2021) 12:1 International Journal for Court Administration at 8.

6 *AI Decision-Making and the Courts: A guide for Judges, Tribunal Members and Court Administrators*, by Felicity Bell et al (Australia: The Australasian Institute of Judicial Administration Incorporated, 2022) at 16.

7 Arianti Widya, "Indonesian Supreme Court Resolves Over 30,000 Cases in 2024" (2024), online: *Viva News & Insights* <https://www.viva.co.id/english/1784784-indonesian-supreme-court-resolves-over-30-000-cases-in-2024>.

8 Ferinda K Fachri, "Kembangkan Aplikasi Penunjukan Majelis, MA Gunakan Artificial Intelligence" (2023), online: *hukumonline.com* <https://www.hukumonline.com/berita/a/kembangkan-aplikasi-penunjukan-majelis--ma-gunakan-artificial-intelligence-lt63f4542d35bf3/>.

instance and appellate courts, to assist with case management while not disregarding the role of human judgment.[9]

This study investigates the transformative potential of AI within the Indonesian litigation landscape, particularly in the context of the Indonesian Supreme Court's initiative to incorporate AI into its case management system and legal research. This move aims to manifest a more effective judiciary that delivers justice more efficiently and equitably. In Indonesia, with its vast cultural and ethnic diversity, the use of AI in the judicial system presents unique challenges. Ensuring that AI-based litigation respects and recognizes this diversity while delivering justice fairly and impartially to all citizens requires careful deliberation and thoughtful planning. This objective aligns with the Supreme Court's position that the use of AI in the Indonesian judiciary will be limited. The judicial system in Indonesia will continue to rely on human roles, as AI merely aids in facilitating the execution of tasks and duties. AI can only operate according to the commands programmed into the system we create, whereas humans possess the creativity and intelligence to continuously drive innovation and change.[10]

AI can significantly impact court litigation not only through automated document management and intelligent legal research, but also through various applications such as predictive analytics, virtual assistants, evidence analysis, sentiment and tone analysis, judicial decision support, automated legal drafting, and bias detection and mitigation. AI technologies have the potential to either strengthen or undermine the core values of justice. It is known for its wide-ranging impacts on human rights. AI has a significant impact on privacy through surveillance technologies such as facial recognition.[11]

Consequently, it is important to establish clear ethical guidelines and standards. These guidelines should address issues like bias, data privacy, transparency, accountability, and fairness. Set standards for AI system development and deployment, ensuring that AI tools align with the principles of justice and do not infringe on the rights of individuals. The Supreme Court of Indonesia can collaborate with relevant ministries to develop a clear and comprehensive regulatory framework for the use of AI in the judicial system.[12]

Because the appropriateness and ethical compliance of other uses of AI in court litigation remain debatable, this research focuses exclusively on automated document management and intelligent legal research. Automated document management streamlines the handling and

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9 Azizah, "Mahkamah Agung akan Gunakan AI dalam Penentuan Majelis Hakim" (2023), online: *mahkamahagung.go.id* <https://mahkamahagung.go.id/id/berita/5811/mahkamah-agung-akan-gunakan-ai-dalam-penentuan-majelis-hakim>.

10 *Ibid.*

11 Woodrow Barfield & Ugo Pagallo, *Advanced Introduction to Law and Artificial Intelligence* (Cheltenham, UK: Edward Elgar Publishing, 2020) at 18.

12 Radityo M Harseno, "Hakim di Era AI: Menuju Badan Peradilan Yang Agung dan Modern Indonesia" (2025), online: *www.dandapala.com* <https://dandapala.com/opini/detail/hakim-di-era-ai-menuju-badan-peradilan-yang-agung-dan-modern-indonesia>.

processing of legal documents, while intelligent legal research enhances the ability to retrieve and analyze legal information efficiently. These applications have the potential to improve the functionality and responsiveness of the legal system significantly.

This research aims to identify the risks and advantages of the Supreme Court's development of automated document management and intelligent legal research, with an emphasis on several core judicial values: accountability, equality before the law, procedural fairness, and access to justice. Given that the United States integrated AI earlier than Indonesia, its established framework highlights critical risks and benefits regarding fundamental judicial values. Benefiting from these insights is essential to ensuring a secure and ethical implementation of AI in Indonesia's judiciary.

II. METHODOLOGY

This research uses qualitative methodology. It focuses on the Indonesian Supreme Court's efforts to incorporate AI into case management and litigation while providing a comparative analysis of AI use in U.S. litigation. The methodology captures both technical and socio-legal aspects of AI integration in the judiciary. The study combines exploratory and comparative research designs. The exploratory part assesses the current state of AI in the Indonesian judiciary, its specific applications, and its impact on legal processes. The comparative aspect analyzes the U.S. experience with AI in the legal system to derive lessons for Indonesia.

Data are collected through semi-structured interviews conducted with legal practitioners, AI experts, and litigants to understand the use of AI, the challenges faced, and its potential to enhance efficiency and justice. In addition, data are also obtained through a thorough review of legal documents, policies, reports, and publications related to AI integration in Indonesia and the U.S., helping to understand regulatory frameworks and identify gaps. Data triangulation ensures reliability and validity by cross-verifying information from interviews and documents.

III. CURRENT ADOPTION IN THE INDONESIAN SUPREME COURT

Soerjono Sukanto, as cited by Doly D, states that the facilities used by the court in law enforcement play a crucial role in the delivery of justice.[13] In this context, AI should be positioned to support and enhance the role of judges and the legal system, not to replace them entirely.[14] Sobandi, Head of the Legal and Public Relations Bureau of the Supreme Court,

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[13] *Pemanfaatan Artificial Intelligence dalam Penegakan Hukum di Indonesia*, by Denico Doly (Dewan Perwakilan Rakyat Republik Indonesia (DPR RI), 2023) at 3.

[14] *Keadilan Robot dan Masa Depan Peradilan dengan Artificial Intelligence (AI)*, by Daniel Julianto Simanjuntak (Pengadilan Tata Usaha Negara Ambon, 2025) at 6.

stated that the Indonesian Supreme Court needs to keep up with the times by incorporating AI into its judicial processes.[15] AI in litigation offers substantial advantages by enhancing the judicial process.[16] Sobandi highlights the necessity for the Indonesian Supreme Court to employ AI to aid judges by analyzing data with algorithms that account for their workload, expertise, previous cases they've managed, and any prior involvement with similar cases.[17]

The Supreme Court of Indonesia began incorporating AI with the launch of its E-Court application. In 2023, the Court introduced five additional AI-powered applications: Smart Majelis, Court Live Streaming, Satu Jari, Lentera 2.0, and e-IPLANS.[18] Through the E-Court system, the Supreme Court aims to advance digital transformation by streamlining work processes and services for justice seekers, particularly by enabling electronic trials for cases involving witnesses located in remote areas.[19] The E-Court system represents the Supreme Court's significant innovation and commitment toward achieving judicial reform in Indonesia. By integrating information technology with procedural law, E-Court aims to deliver a justice system that is simple, swift, and cost-effective. The application, accessible from anywhere, allows legal processes to proceed without physical court appearances, adapting to the rapid advancements in information technology.[20] The E-Court system in Indonesia faces several challenges, including issues with facilities and infrastructure. Inadequate internet connectivity in remote areas affects the effectiveness of the Supreme Court's procedural processes and innovations. Additionally, there are human resource challenges; not everyone is proficient in using the technology, and many advocates lack a clear understanding of electronic court applications.[21]

The next AI application introduced is Smart Majelis. This AI-based robotics tool automatically selects a panel of judges by evaluating factors such as their experience, competence, and workload.[22] This application also considers the type of case being tried, ensuring that the selected judges possess expertise relevant to the case at hand. Doing so can enhance case-handling efficiency, effectiveness, and objectivity. Additionally, it aims to improve service quality and public trust in judicial institutions by fostering greater

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15 Mochamad Azhar, "Mahkamah Agung Menguji Coba AI untuk Sistem Peradilan Efisien dan Transparan" (2023), online: *govinsider.asia* <https://govinsider.asia/indo-en/article/mahkamah-agung-menguji-coba-ai-untuk-sistem-peradilan-efisien-dan-transparan>.

16 Yaohui Jin & Hao He, "An Artificial-Intelligence-Based Semantic Assist Framework for Judicial Trials" (2020) 7:3 Asian Journal of Law and Society at 531.

17 Azhar, *supra* note 15.

18 Ekinia Karolin Sebayang, Mahmud Mulyadi & Mohammad Ekaputra, "Potensi Pemanfaatan Teknologi Artificial Intelligence Sebagai Produk Lembaga Peradilan Pidana di Indonesia" (2024) 3:4 Locus Journal of Academic Literature Review at 318.

19 Azhar, *supra* note 15.

20 Mahkamah Agung Republik Indonesia, "e-Court Mahkamah Agung RI", online: <https://ecourt.mahkamahagung.go.id/>.

21 Ummi Maskanah, "Tantangan dalam Pembaharuan Sistem Peradilan melalui Perkembangan Teknologi: e-Court dan e-Litigasi sebagai Sarana menuju Peradilan Moderen di Indonesia" (2023) 9:2 Jurnal Hukum Mimbar Justitia at 252.

22 *Laporan Tahunan 2023: Integritas Kuat, Peradilan Bermartabat*, by Mahkamah Agung Republik Indonesia (Mahkamah Agung RI, 2023) at 64.

transparency and accountability in the judicial process.[23] According to the Chief Justice of the Supreme Court, Smart Majelis is currently only being used at the Supreme Court level. The District Courts and High Courts have not yet implemented this AI system.[24]

Court Live Streaming is another application utilized by the Indonesian Supreme Court. It allows the public to watch live broadcasts of cassation and judicial review decisions, and review previously broadcast decisions.[25] This policy is expected to provide legal services transparently and accountably to litigants. By broadcasting the reading of cassation and judicial review decisions live, individuals will no longer need to seek information from other sources to find out the verdict on their cases, thereby minimizing fraudulent actions that impersonate Supreme Court officials.[26] This application is accessible to the public via the website, enhancing transparency and accountability by allowing broader access to observe the trial process directly. Public access to judicial proceedings and decisions promotes a more transparent and accountable judicial process. It enables public scrutiny and helps ensure that" justice is not only done but also seen to be done."[27] Furthermore, AI tools streamline case management by automating routine tasks such as identifying similar cases, organizing documents, and conducting legal research. This case management feature reduces the time and resources required for case processing, thereby addressing common issues like court backlogs and delayed decisions, which are prevalent in many judicial systems, including Indonesia.[28]

The Supreme Court also utilizes the Integrated Court Performance Monitoring System Application (Satu Jari), which allows for the real-time and integrated monitoring of court performance across the general judicial environment. This application helps ensure that case handling—including legal remedies, mediation, case classification, execution, service surveys, and information on high-profile cases in the High Court and District Court—is conducted in a timely and procedural manner.[29] Real-time monitoring provides policymakers with up-to-date data, enabling faster and more informed decisions.

AI is also used to prevent conflicting court decisions for similar cases. The AI technology will serve as a decision support system that provides early information about potential similarities between cases, aiming to ensure legal certainty. This AI application is currently being tested in various courts: general courts, religious courts, military courts, environmental

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23 *Ibid.*

24 Pepy Nofriandi, "Pembinaan di Ambon, KMA: Aplikasi SMART Majelis Kedepannya akan Digunakan di Pengadilan Tingkat Banding dan Pertama" (2023), online: *mahkamahagung.go.id* <https://www.mahkamahagung.go.id/id/berita/6080/pembinaan-di-ambon-kma-aplikasi-smart-majelis-kedepannya-akan-digunakan-dipengadilan-tingkat-banding-dan-pertama%20accessed%2020/8/2024>.

25 Mahkamah Agung Republik Indonesia, *supra* note 20.

26 Azizah, *supra* note 9.

27 *Open Justice: Court Reporting in the Digital Age*, by Justice Committee, Fifth Report of Session 2022–23 (House of Commons, 2022) at 7.

28 Jin & He, *supra* note 16.

29 Mahkamah Agung Republik Indonesia, *supra* note 20.

courts, and administrative courts in the DKI Jakarta area and its surroundings. The Supreme Court expects that by September 2024, the developed decision support system (DDS) will be available for national use. AI is increasingly being used to support judicial analysis and decision-making in litigation.[30] AI can assist in judicial processes through document processing and data analysis, as well as by supporting judges in evaluating case materials and generating decision recommendations. These capabilities help streamline judicial tasks and improve efficiency, allowing legal professionals to focus on more complex legal reasoning.[31]

The steps taken by the Supreme Court are very appropriate and come at a crucial time. These initiatives are essential for improving the legal system, ensuring efficiency, transparency, and accountability in the judicial process, and enhancing accessibility for justice seekers. AI's role in preventing conflicting court decisions for similar cases is vital for ensuring legal certainty. The AI decision support system (DDS) helps judges make more consistent rulings by identifying potential similarities between cases early on. This consistency is critical in upholding the principle of equality before the law and maintaining public trust in the judiciary.[32] Integrating AI in the judiciary can enhance accessibility, particularly for those facing challenges in navigating the legal system. With AI tools providing early insights and consistent legal information, litigants—especially those without legal representation—can better understand their cases and the potential outcomes.[33]

Nevertheless, those Supreme Court steps are still in the very early stages. Hence, they must be closely monitored and guided to ensure that AI does not create new problems, such as bias, injustice, or partiality. Knowing how AI integration improves efficiency and accessibility in the Indonesian judiciary is vital for ensuring a fair, transparent, and modern legal system that meets the needs of all citizens. To achieve efficiency in the judiciary, using AI in litigation should enable informed decision-making, enhance public trust, and pave the way for a more effective and inclusive judicial process.

IV. THE U.S. JUDICIARY'S APPROACH TO AI

In the United States, AI has been adopted across government agencies, although many tools remain limited in sophistication and present significant accountability challenges, particularly regarding transparency, explainability, and compliance with legal norms.[34] The use of AI in the U.S. and Indonesian court systems reflects different approaches and depths of integration,

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30 Rida Ista Sitepu & Nuchraha Alhuda Hasnda, "Analysis of the Implementation of E-Litigation with Artificial Intelligence Approach in Procedural Justice and Access to Justice in Pretrial Proceedings" (2024) 24:1 Perspektif Hukum at 53-54.

31 *Ibid.*

32 Mahkamah Agung Republik Indonesia, *supra* note 20.

33 Axel Walz & Kay Firth-Butterfield, "Implementing Ethics into Artificial Intelligence: A Contribution, From a Legal Perspective, to the Development of an AI Governance Regime" (2019) 18:1 Duke Law & Technology Review at 184-185.

34 *Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies*, by David Freeman et al (Administrative Conference of the United States, 2020) at 7.

which stem from varying needs, levels of technological advancement, and judicial priorities. In the U.S., AI is deeply integrated into substantive legal processes, such as the use of predictive algorithms in bail determinations.[35] Indonesia must learn to learn from the U.S. about its experience integrating AI in litigation. The U.S. has a more mature and diverse range of AI applications in the legal field, offering valuable insights into best practices and effective implementation strategies. Recent developments indicate that a significant portion of progress in addressing legal gaps in AI governance is emerging from the United States.[36] The U.S. has developed various legal and regulatory frameworks for AI in the judiciary. Studying these frameworks can guide Indonesia in creating its own regulations to ensure the ethical and effective use of AI. Thus, by studying the U.S. experience, Indonesia can leverage proven strategies, avoid common pitfalls, and create a more robust and effective AI integration plan for its legal system.

Rule 1 of the Federal Rules of Civil Procedure mandates that cases be resolved in a "just, speedy, and inexpensive" manner. Many AI applications undeniably contribute to achieving these goals by enhancing efficiency and reducing costs. As AI technology continues to evolve, it is essential for courts to consider how best to integrate it into litigation processes carefully. In federal courts, this involves multiple Judicial Conference committees, including those focused on court administration, case management, cybersecurity, and procedural rules, among others. These committees will play a key role in determining how AI can be appropriately and effectively utilized in the judicial system.[37]

Unlike in Indonesia, where AI is still limited to administrative matters, in the United States, courts and legal professionals have been leveraging AI in the more substantive areas of e-discovery and legal research. The use of AI in the U.S. court system is essential to achieving the principle of providing justice that is "just, speedy, and inexpensive." This principle emphasizes the importance of resolving legal cases fairly, quickly, and without high costs.[38] AI technologies can support more efficient case handling, particularly in the context of online dispute resolution, by facilitating faster and more streamlined resolution processes.[39]

In the context of e-discovery and legal research, AI plays a critical role by efficiently managing and prioritizing large volumes of documents and data. AI can support the handling of electronically stored information by facilitating the processing and analysis of digital documents and evidence in legal proceedings.[40] AI tools use machine learning algorithms and

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35 Benjamin Alarie, Anthony Niblett & Albert H Yoon, "How artificial intelligence will affect the practice of law" (2018) 68:1 University of Toronto Law Journal at 123.

36 Yoon Chae, "U.S. AI regulation guide: Legislative overview and practical considerations" (2020) 3:1 Journal of Robotics, Artificial Intelligence and Law at 17.

37 *2023 Year-End Report on the Federal Judiciary*, by Supreme Court of the United States (US, 2023) at 6.

38 Amy Schmitz, "Expanding Access to Remedies through E-Court Initiatives" (2019) 67:1 Buffalo Law Review at 93.

39 *Ibid.*

40 Vasiliy A Laptev & Daria R Feyzrakhmanova, "Application of Artificial Intelligence in Justice: Current Trends and Future Prospects" (2024) 4:3 Human-Centric Intelligent Systems at 403.

natural language processing (NLP) to analyze large sets of documents, emails, files, and other electronic data. These tools can automatically classify documents based on their content, relevance, and importance to a particular case or legal issue. For example, AI can categorize documents into various types such as contracts, emails, financial records, or legal briefs.[41] AI systems can flag documents that contain potentially relevant data, such as privileged information, sensitive communications, or evidence that could be critical to the case. By doing so, AI ensures that key information is not overlooked and that documents are organized for the next steps in the legal review process.[42] AI is used for legal research by identifying relevant case law, statutes, and legal precedents more efficiently. AI tools can analyze past rulings and legal texts to find relevant case law or suggest legal arguments, helping lawyers build stronger cases.[43]

AI-powered tools, such as chatbots and virtual kiosks, are being increasingly used by courts to assist self-represented litigants—individuals who do not have legal representation—in navigating the legal system.[44] For example, some courts in Alaska have implemented virtual kiosks to improve access to court services and facilitate electronic interactions with the court. AI chatbots are interactive virtual assistants that use natural language processing (NLP) to communicate with users.[45] In the context of courts, these chatbots can answer common legal questions, provide explanations about legal procedures, and offer step-by-step guidance on how to file various legal documents. For self-represented litigants who may lack legal knowledge, virtual kiosks serve as a helpful resource to better understand the legal process and their rights.[46] Virtual kiosks are physical or digital stations equipped with AI-driven software that provide self-help resources for court users. These kiosks are often set up in courthouses or public areas and offer user-friendly interfaces that guide self-represented litigants through tasks such as completing forms, accessing legal information, and understanding court procedures. Virtual kiosks can provide users with remote access to court services and facilitate the electronic submission of documents.[47] AI chatbots and virtual kiosks reduce the burden on court staff by handling routine queries and guiding self-represented litigants, allowing human resources to focus on more complex tasks. This

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41 Lauri Donahue, "A Primer on Using Artificial Intelligence in the Legal Profession" (2018), online: *Harvard Journal of Law & Technology* <https://jolt.law.harvard.edu/digest/a-primer-on-using-artificial-intelligence-in-the-legal-profession>.

42 *Ibid.*

43 Laptev & Feyzrakhmanova, "Application of Artificial Intelligence in Justice", *supra* note 40.

44 Sabine Gless, "AI in the Courtroom: A Comparative Analysis of Machine Evidence in Criminal Trials" Georgetown Journal of International Law at 205.

45 Mike Hondel, "ANJC Court Kiosk Provides Virtual Access to Justice System | Alaska Native Justice Center" (2021), online: *Alaska Native Justice Center* <https://anjc.org/2021/01/anjc-court-kiosk-provides-virtual-access-to-justice-system/>.

46 *Ibid.*

47 *Ibid.*

streamlining can contribute to more efficient court operations and improved access to judicial services.[48]

V. RECONCILING INNOVATION WITH JUDICIAL CORE VALUES

Virginia Eubanks raises awareness of automated inequality, in which the adoption of predictive models and algorithms has transformed what was once fully human-based decision-making. Using the US as the study focus, she notes that the poor and working-class people have a long history of being discriminated against and having their privacy violated. Automation is needed due to limited public resources; it involves filtering people's varying needs to access the welfare system. In fact, in Indiana, she finds that because of the lack of human review of the data, crucial personal stories that were crucial to determining eligibility for support were not captured, thereby eliminating deserving applicants.[49] Eubanks' findings show that administrative dehumanization risks the loss of fairness and access to justice.

Fairness and accountability are crucial in the judiciary. Our modern legal system currently holds individuals or groups that operate AI responsible for any harm caused by the tools. However, humans' control will reduce as AI develops more autonomy in the future. That might be a question for another day; today, the task is to ensure AI operates within the law.[50]

While algorithmic tools are questioned for the secrecy of their underlying source code, human judges do not always provide comprehensive reasoning or conclusions.[51] A comparison between human and AI judges regarding an abstract model of legitimacy demonstrates that AI is incapable of making moral decisions, as legitimacy is at best provided by humans. Indeed, human judges cannot fully explain their reasoning; thus, machine judges are more consistent than humans. However, the algorithm has a risk of bias in replication and reinforcement. Human judges can communicate efficiently with litigants, whereas AI judges cannot.[52] While AI cannot understand morality, it would not act irrationally like humans who are equipped with emotions such as anger or fear, nor would it act rationally when a real danger arises, because it processes actions based on a database.[53]

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48 *Ibid.*

49 Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York: Macmillan, 2018) at 163.

50 Mark A Chinen, *Law and Autonomous Machines: The Co-evolution of Legal Responsibility and Technology* (Cambridge: Cambridge University Press, 2019) at 14-15.

51 Vincent Chiao, "Transparency at Sentencing: Are Human Judges More Transparent than Algorithms?" in *Sentencing and Artificial Intelligence* Jesper Ryberg & Julian V Roberts (Oxford: Oxford University Press, 2022) at 35.

52 Sigrid van Wingerden & Mojca M Plesničar, "Artificial Intelligence and Sentencing: Humans against Machines" in *Sentencing and Artificial Intelligence* Jesper Ryberg & Julian V Roberts (Oxford: Oxford University Press, 2022) at 247.

53 Dennis J Baker & Paul H Robinson, *Emerging Technologies and the Criminal Law: Artificial Intelligence and the Law, Cybercrime and Criminal Liability* (Cambridge: Cambridge University Press, 2020) at 33.

Despite global concerns about transparency and privacy, the adoption of AI within the Indonesian Supreme Court is still in its early stages. Notably, several challenges exist in the Supreme Court that prevent the optimal use of AI tools and systems. These challenges can be categorized into several key areas, each affecting the effectiveness and efficiency of AI-driven solutions like Smart Majelis, Satu Jari, and other decision support systems (DSS). Many regions in Indonesia, especially remote and rural areas, suffer from inadequate internet connectivity. This issue significantly hampers the effectiveness of AI-driven procedural processes and innovations within the Supreme Court. AI systems require stable and reliable internet access to function properly, including uploading, accessing, and analyzing large volumes of legal data. Without strong connectivity, courts in these regions struggle to access these AI tools, causing delays in case processing and communication between different courts.[54]

Furthermore, one of the significant hurdles in adopting AI technologies in the judiciary is the lack of technological skills among judges, court staff, and legal professionals. Many are unfamiliar with AI and digital tools, and they often find it challenging to transition from traditional, manual processes to more advanced, technology-driven systems. Many legal advocates also struggle to understand and effectively using electronic court applications. This lack of understanding can lead to errors, missteps, and delays in legal proceedings, further diminishing the potential benefits that AI could bring to the judiciary. Continuous training and awareness programs are needed to enhance digital literacy and ensure that all legal professionals are equipped to use these tools.[55]

Smart Majelis is an AI-based tool used to assist in judicial assignments and decision-making. The effectiveness of this tool is heavily dependent on the accuracy, completeness, and relevance of the data it uses. The data includes data on judges' experience, competence, and workload. If the data is inaccurate, outdated, or incomplete, it could lead to inappropriate judge assignments, affecting the fairness and efficiency of the judicial process. For Smart Majelis to be fully effective, it must seamlessly integrate with existing judicial systems and processes. However, this integration can be both technically and administratively challenging.. The system facilitates the electronic submission and handling of cassation and case review applications, streamlining procedural processes within the judiciary. This development supports more efficient case administration and improves access to judicial services.[56]

Satu Jari, another AI-based tool used by the Indonesian Supreme Court,[57] faces significant challenges in integrating data across different courts. Data integration has been challenging

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54 *Ibid.*

55 Richard Susskind & Daniel Susskind, *The Future of the Professions* (Oxford: Oxford University Press, 2015) at 127.

56 AGI Legal, "Refined Details for Electronic Cassation and Case Review Submissions: Advancing Indonesia's Supreme Court digitalisation", online: *AGI Legal* <https://www.agilegal.id/publication/articles/26952/refined-details-for-electronic-cassation-and-case-review-submissions-advancing-s-supreme-court-digitalisation>.

57 Direktorat Jenderal Badan Peradilan Umum, "Luncurkan dan Uji Coba Aplikasi SATU JARI, Ketua Mahkamah Agung Apresiasi Pemanfaatan Teknologi Informasi Untuk Pantau Kinerja Pengadilan" (2017), online: *Mahkamah*

due to varying standards, formats, and recording methods used by courts in different regions. The lack of uniformity in data management practices complicates the process of consolidating and analyzing data at a national level. This problem affects the accuracy and reliability of the insights generated by the system and hampers decision-making processes. Consequently, to overcome these challenges, there is a need for standardization in data management practices across all courts in Indonesia. This involves establishing consistent data formats, recording methods, and protocols for data sharing. Without such standardization, the potential benefits of Satu Jari and similar AI tools cannot be fully realized.

Decision Support Systems (DSS) developed for the judiciary depend on the availability of vast amounts of accurate and comprehensive data to provide meaningful insights and support judicial decision-making. However, there is often a lack of sufficient data available to these systems. This scarcity can stem from poor data collection practices, incomplete records, or a lack of historical data, all of which limit the effectiveness of DSS. These systems cannot perform at their best without adequate data, leading to suboptimal recommendations or analyses. This can impact the quality of judicial decisions and undermine confidence in AI-assisted decision-making processes. Addressing this issue requires a concerted effort to improve data collection, storage, and management practices across the judiciary.[58]

However, these global concerns regarding AI's impact on judicial values must be addressed proactively. As Indonesia navigates its digital transformation, it is crucial to learn from the U.S. experience in dealing with these risks. In the U.S., AI algorithms are trained using historical data, which can reflect past inequalities and biases present in the judicial system. If the training data includes disproportionately negative outcomes for certain racial or economic groups, the AI can perpetuate and even exacerbate these biases.[59] For example, if historical data shows a pattern of harsher sentencing for Black Americans compared to other racial groups, the AI may inadvertently continue this trend, leading to biased recommendations or decisions.[60] Using AI-biased systems can result in greater inequality within the justice system. When AI tools reinforce existing disparities, they contribute to a cycle of disadvantage for marginalized groups. This is particularly concerning in areas such as sentencing recommendations, parole decisions, and risk assessments, where AI's influence can have significant and long-lasting impacts on individuals' lives.

Ethical concerns surrounding AI in the U.S. justice system include accountability, transparency, and fairness. Specifically, accountability is a major issue, as it can be difficult to

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Agung Republik Indonesia <https://badilum.mahkamahagung.go.id/berita/berita-kegiatan/4053-luncurkan-dan-uji-coba-aplikasi-satu-jari-ketua-mahkamah-agung-apresiasi-pemanfaatan-teknologi-informasi-untuk-pantau-kinerja-pengadilan.html>.

58 Jonah Wu, "AI Goes to Court: The Growing Landscape of AI for Access to Justice" (2019), online: *Stanford Legal Design Lab (Justice Innovation)* <https://justiceinnovation.law.stanford.edu/ai-goes-to-court-the-growing-landscape-of-ai-for-access-to-justice/>.

59 Laptev & Feyzrakhmanova, "Application of Artificial Intelligence in Justice", *supra* note 40.

60 Julia Angwin et al, "Machine Bias" in *Ethics of Data Analytics* (Boca Raton: Auerbach Publications, 2022) at 23.

determine who is responsible for decisions influenced by AI—whether it be the developers, judicial officers, or technology providers.[61] Regarding transparency, many AI systems are not fully explainable, making it difficult for decision-makers to provide clear reasons for outcomes. This lack of explainability poses challenges for accountability and limits meaningful scrutiny of decisions affecting individuals' rights.[62] Ensuring that AI tools do not disproportionately disadvantage certain groups remains a significant challenge. The literature highlights the importance of developing mechanisms to detect, monitor, and address bias in these systems.[63]

Transparency and accountability are significant concerns regarding the use of AI in U.S. courts. To ensure that AI systems are both trusted and effective, the processes for data collection and usage must be transparent. Without clarity on how data is gathered and utilized, it becomes challenging for judges, lawyers, and the public to scrutinize the basis of AI-assisted decisions. This lack of transparency limits meaningful oversight and may undermine the legitimacy of such decisions within the justice system.[64] Lack of transparency also raises concerns about data integrity. Transparent data collection practices are essential to ensure that the data used by AI systems is accurate and representative. Without clear guidelines and oversight, there is a risk of data being misrepresented or selectively used, potentially skewing results and leading to unjust outcomes.[65]

AI tools in the court system can only be trusted if used ethically. Unethical use of AI poses several risks, including misuse of AI tools and lack of accountability. AI systems might be deployed in unintended ways, potentially resulting in unethical outcomes. For example, if AI is used to determine sentencing or bail decisions without proper oversight, it could lead to unfair or biased results. When AI systems operate without clear accountability measures, it becomes difficult to identify who is responsible for errors or biases. This lack of accountability can erode trust in the judicial system and its processes.[66]

For AI systems used in the justice system to be trusted, the methods by which they collect and use data must be transparent and understandable. If these processes are not clear, judges, lawyers, and the public may not be able to evaluate or question how the AI reaches its decisions properly. Without this ability to scrutinize and understand AI decision-making, confidence in the use of AI in the justice system can be significantly weakened. This lack of

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61 Laptev & Feyzrakhmanova, "Application of Artificial Intelligence in Justice", *supra* note 40.

62 Freeman et al, *supra* note 34 at 79.

63 *Ibid.*

64 Simon Chesterman, "Through a Glass, Darkly: Artificial Intelligence and the Problem of Opacity" (2021) 69:2 The American Journal of Comparative Law at 7.

65 *Ibid* at 10.

66 *Ibid* at 10.

transparency can lead to concerns about fairness, bias, and accountability in AI-driven outcomes.[67]

Data integrity has become another challenge in the U.S. Transparent data collection practices are essential to ensure that the data used by AI systems is both accurate and representative. Without clear guidelines and oversight, there is a risk of data being misrepresented or selectively used, which can distort results and lead to unfair outcomes.[68] Transparent data collection ensures that all stakeholders—judges, lawyers, litigants, and the public—can trust the data used by AI systems. Transparency involves clearly outlining where the data comes from, how it is collected, what it represents, and how it is processed. This level of clarity is necessary to prevent biases and inaccuracies from influencing AI-driven decisions in the judicial system.[69]

The U.S. government has established a range of legal and regulatory frameworks to address the challenges associated with AI. AI regulation is characterized by a blend of federal guidelines, sector-specific regulations, state and local laws, and ethical principles. As AI technology continues to advance, there is an increasing need for comprehensive and cohesive regulations to tackle the complex issues related to AI applications. Rather than a single, all-encompassing federal law, AI regulation in the U.S. is managed through a patchwork of existing laws, sector-specific rules, and evolving guidelines. These frameworks often address various aspects of AI use, including data privacy, discrimination, and consumer protection, but they tend to be fragmented.

The Algorithmic Accountability Act is a proposed piece of U.S. legislation introduced in Congress as Senate Bill S. 1108 and House Bill H.R. 2231 on April 10, 2019. The Act aims to address the growing concerns about AI systems producing biased or unfair outcomes.[70] The Act seeks to make companies accountable for the AI tools they develop and use, particularly focusing on their accuracy, fairness, bias, and potential for discrimination. Senator Wyden, one of the bill's sponsors, emphasized the need for companies to regularly assess these aspects. The Act also proposes that, whenever reasonably possible, these impact assessments should be conducted with the involvement of external third parties, such as independent auditors and technology experts. This requirement is meant to ensure a more objective and transparent evaluation process.[71] Following the Federal Algorithmic Accountability Act, New Jersey introduced a similar bill, A.B. 5430, titled "New Jersey Algorithmic Accountability Act" on May 20, 2019.[72] It is then followed by New York City, which enacted a law specifically for holding algorithms accountable. This law, called "A Local Law in relation to automated

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67 Philipp Hacker & Bilyana Petkova, "Reining in the Big Promise of Big Data: Transparency, Inequality, and New Regulatory Frontiers" (2017) 15:1 Northwestern Journal of Technology and Intellectual Property at 16.

68 Chesterman, "Through a Glass, Darkly", *supra* note 64.

69 *Ibid* at 12.

70 Chiao, *supra* note 51.

71 *Ibid.*

72 218th Legislature, *Assembly, No. 5430* [New Jersey, United States] (2019).

decision systems used by agencies" (Int. No. 1696-2017), requires city agencies to be more transparent about the automated systems they use for decision-making.[73] Following New York City's lead, Washington State introduced two bills in January 2019, S.B. 5527 and H.B. 1655, which aimed to prevent algorithmic discrimination. These bills are similar to the General Data Protection Regulation (GDPR) but focus only on how the government buys and uses AI systems.[74] In February 2019, California introduced a bill, S.B. 444, which requires businesses that use AI to provide products or services to government entities to disclose the steps they have taken to minimize bias in their AI systems. This law ensures that AI systems are fair and unbiased when used for public purposes.[75]

Several federal bills related to AI in the U.S. aims to enhance AI research, development, and governance. The earliest among these is the FUTURE of Artificial Intelligence Act of 2017 (S. 2217 and H.R. 4625), introduced on December 12, 2017. Although it was never passed, this bill proposed that the Department of Commerce establish a new committee to guide on the development and implementation of AI technologies. Additionally, there are more recent bills like the Growing Artificial Intelligence Through Research ("GrAITR") Act (H.R. 2202), introduced on April 10, 2019, and the Artificial Intelligence Initiative Act ("AI-IA") (S. 1558), introduced on May 21, 2019. These bills focus on creating a coordinated federal initiative to accelerate AI research and development. One of the main goals of these initiatives is to address and eliminate biases in AI systems. The proposed bills suggest that the President should establish a National AI Research and Development Initiative. This initiative would focus on enhancing AI research and development by identifying and minimizing biases in data sets, algorithms, and other AI components. The bills also propose establishing an AI research and education program that supports interdisciplinary research on topics like algorithm accountability, minimizing biases in training data and algorithmic selection, and exploring the AI's societal and ethical implications.[76]

Federal Trade Commission (FTC) plays a significant role in overseeing AI-related practices, particularly concerning consumer protection and privacy. The FTC has issued guidelines warning against deceptive practices related to AI and machine learning, emphasizing transparency and fairness in AI applications. Algorithmic Accountability Act: Although not yet enacted, the Algorithmic Accountability Act, introduced in Congress, aims to address the need for greater transparency and accountability in AI systems. It proposes requiring companies to conduct impact assessments for AI systems and mitigate risks of discrimination and bias. National Institute of Standards and Technology (NIST) guides on AI through its AI Risk Management Framework. This framework helps organizations manage the risks

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73 New York City Council, *A Local Law in relation to Automated Decision Systems Used by Agencies* (New York City, United States), Int 1696-2017 (2018).

74 Oregon State Legislature, *SB 5527* [Oregon, United States] (2020).

75 *Ibid.*

76 Chiao, *supra* note 51.

associated with AI by offering guidelines for developing, deploying, and maintaining AI systems in a way that addresses fairness, transparency, and accountability.[77]

At the state level, California Consumer Privacy Act (CCPA) has been which provides broad data privacy protections and impacts AI systems that handle personal data. It requires businesses to be transparent about data collection practices and offers consumers rights related to their data. New York City's Automated Decision Systems Law: This local law mandates transparency and accountability for AI systems used in hiring and promotion decisions. It requires companies to conduct bias audits and disclose the use of automated decision-making systems to employees and job applicants. Furthermore, Illinois has an Illinois Biometric Information Privacy Act (BIPA), a specific regulation regarding the use of biometric data, which impacts AI systems utilizing biometric identifiers such as facial recognition. BIPA requires explicit consent for data collection and provides legal recourse for unauthorized use.[78]

Several adaptation strategies should be developed to effectively adapt and implement AI in the Indonesian legal system while overcoming the issues related to ethical and legal implications, data privacy and security, and technological infrastructure. These strategies would ensure that AI is integrated in a way that is ethical, secure, and supportive of Indonesia's legal framework and infrastructure. Indonesia needs to create comprehensive guidelines and legal frameworks specifically addressing the ethical use of AI in litigation. The guideline would involve defining the roles and responsibilities of AI developers, legal practitioners, and the courts in the use of AI, along with setting standards for fairness, transparency, and accountability.[79]

Strengthen existing data protection laws to cover AI applications in the judiciary. This should include clear policies on collecting, storing, using and sharing data, with stringent measures against unauthorized access and misuse of sensitive information. Employ advanced data security techniques like encryption and anonymization to protect personal and sensitive data within AI systems. This can help prevent data breaches and ensure that the data remains secure and confidential.[80]

Based o the foregoing analysis, the Indonesian Supreme Court has made commendable strides in implementing AI within its legal system through initiatives such as the Court System, Smart Majelis, Court Live Streaming, and the Integrated Court Performance Monitoring System (Satu Jari). These innovations represent significant progress and are crucial for enhancing the efficiency and transparency of the judicial process. However, despite these advancements, the substantive use of AI, as seen in the U.S., remains less explored. While

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77 National Institute of Standards and Technology, "NIST: National Institute of Standards and Technology", online: *US Department of Commerce* <https://www.nist.gov/>.

78 *Biometric Information Privacy Act, 740 ILCS 14* [Illnois, United States], 2008.

79 Chesterman, "Through a Glass, Darkly", *supra* note 64.

80 Laptev & Feyzrakhmanova, "Application of Artificial Intelligence in Justice", *supra* note 40.

these tools have improved administrative functions and procedural efficiency, they have yet to fully engage with AI's potential to transform legal decision-making and case management in the way that more advanced systems in the U.S. have. The substantial use of AI in the U.S. judicial process has had a transformative impact on the efficiency, speed, cost-effectiveness, and overall burden of legal proceedings. Drawing from the U.S.' experience with AI in litigation provides valuable insights for Indonesia as it seeks to integrate AI into its legal system. The U.S. has leveraged AI to enhance case management, streamline legal research, and assist self-represented litigants, all contributing to a "just, speedy, and inexpensive" resolution of cases. These advancements underscore the potential benefits of AI in improving efficiency and reducing costs in the judiciary.

VI. CONCLUSION

Drawing on the analysis above, AI adoption in the Indonesian judiciary is necessary and beneficial. However, its implementation must be done cautiously because it poses several risks, such as racial bias and breach of privacy. In terms of regulatory aspects, like the U.S., Indonesia should consider creating sector-specific regulations tailored to different industries that use AI, such as finance, healthcare, and public services. This approach ensures that regulations are relevant and effective in addressing the AI's unique challenges and risks in various sectors. Indonesia needs to develop a blended regulatory approach, focusing on key aspects such as data privacy, bias, and transparency, and fostering innovation and collaboration.

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COMPETING INTEREST

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