ARTIFICIAL INTELLIGENCE IN JUDICIAL SYSTEMS: A COMPARATIVE ANALYSIS OF REGULATORY READINESS AND ACCOUNTABILITY IN INDONESIA, SINGAPORE AND UGANDA

Collins Ekpenisi[*], Muwaffiq Jufril[**], Yasein Hassan M. Osman[***], Amos Godfrey Atim[****]
School of Law, Kampala International University, Uganda
Ggaba Road, Kansanga, Kampala, Uganda
Universitas Trunojoyo, Indonesia
Jalan Raya Telang, Kamal, Bangkalan, Jawa Timur
University of Nyala, Sudan
Jalan Bandara, Nyala, Sudan
Anglia Ruskin University, United Kingdom
East Road, Cambridge, Cambridgeshire, CB1 1PT, United Kingdom
Email: collins.ekpenisi@kiu.ac.ug**[*]**, muwaffiq.jufri@trunojoyo.ac.id**[**]**, yasseinhassan@yahoo.com**[***]**,
AA3554@student.aru.ac.uk**[****]**

Article

Article History:
Submitted: August 2026
Reviewed: October 2026
Accepted: October 2026
Published: October 2026

Keywords:
Artificial Intelligence; Digital Justice; Judicial Accountability; Judicial Systems; Regulatory Readiness.

Abstract

Increasingly, Artificial Intelligence (AI) is influencing the way courts operate. However, there are significant differences regarding the integration and regulation of the use of AI in various jurisdictions. While most studies have thus far concentrated mainly on issues related to ethics and country-specific national AI strategies, existing literature has paid relatively little attention to what regulatory conditions must exist prior to and subsequent to the introduction of AI technology within the court system. This article examines regulatory preparedness and accountability in a comparative analysis of Indonesia, Singapore and Uganda. These three countries are at significantly varying levels of digitalization in their judicial processes. Using both a doctrine-based and comparative method, this article assesses legislative and policy frameworks, institutional capabilities, digital infrastructure, judicial oversight, transparency, explanations and procedural protections. The study contributes to judicial AI governance scholarship by showing, through a comparative analysis, that judicial digitalisation alone does not establish regulatory readiness for AI and that regulatory readiness and accountability must develop together rather than in sequence. An effective AI-enabled justice governance system requires appropriate legal and institutional frameworks that protect judicial independence, procedural fairness, and meaningful human oversight, while also allowing for technologically innovative solutions that are consistent with the rule of law.

A. Introduction

Artificial intelligence (AI) is beginning to reshape the administration of justice. In many jurisdictions, courts are increasingly using digital technologies like AI to handle allocation of cases, automate routine administrative work, assist with legal research and improve access

judicial information.[1] Recent progress in machine learning and generative AI extends these functions beyond routine management to include document analysis, drafting assistance, predictive analytics and tools that support decision-making.[2] According to Rajesh, adoption of these developments offers opportunities to improve administration of courts, but they also raise legal questions about independence of judges, accountability of institutions, procedural fairness, as well as the limits appropriate for decisions made by algorithms[3]. The central question is therefore not whether AI will influence judicial systems in Indonesia, Singapore and Uganda, but how its effective adoption should be regulated in such a way that it does not undermine the principles of judicial independence, procedural fairness and the rule of law.

A substantial body of research has examined the adoption of AI in judicial systems, concentrating on algorithmic bias, transparency, explainability, data protection and governance ethics. Existing research addresses the bias, transparency and privacy cluster, but treats these largely as risks to be mitigated once AI has already been integrated, rather than as conditions to be satisfied before deployment.[4] Other studies draw the CEPEJ Ethical Charter, the EU AI Act and the OECD and UNESCO principles into a single framework of legitimacy, transparency, accountability and human oversight.[5] The synthesis is valuable, though it is pitched at the level of principle rather than the institutional and technical groundwork a given judiciary must lay. On the regulatory side, some studies have analysed how jurisdictions have responded through national AI strategies,[6] while further studies have examined those strategies across a hybrid-governance frame.[7] Both studies illuminate policy at the national level, yet neither of them addresses the court

[1] Francesco Contini, "Artificial Intelligence and the Transformation of Humans, Law and Technology Interactions in Judicial Proceedings," Law Technology and Humans 2, no. 1 (2020): 4–18, https://doi.org/10.5204/lthj.v2i1.1478.
[2] Anu Anu, "The Role of Artificial Intelligence in Transforming Legal Practice and Access to Justice," Indian Journal of Law. 3, no. 4 (2025): 27–30, https://doi.org/10.36676/ijl.v3.i4.113.
[3] Rajesh Ghoshal, "Smart Justice: AI for Fair \& Fast Legal Systems," International Journal of Advanced Research in Education and Technology 11, no. 6 (2024), https://doi.org/10.15680/ijarety.2024.1106113.
[4] Kashif Javed and Jianchun Li, "Bias in Adjudication: Investigating the Impact of Artificial Intelligence, Media, Financial and Legal Institutions in Pursuit of Social Justice," PLoS ONE 20, no. 1 (2025), https://doi.org/10.1371/journal.pone.0315270.
[5] Nikolaos Manos et al., "The Use of Artificial Intelligence in the Administration of Justice: Suggested Framework of Ethical Principles and Reasoning of Judges in the Use of Intelligent Systems," Laws 2026, Vol. 15, Page 20 15, no. 2 (2026): 20, https://doi.org/10.3390/LAWS15020020.
[6] Christian Djeffal et al., "Role of the State and Responsibility in Governing Artificial Intelligence: A Comparative Analysis of AI Strategies," Journal of European Public Policy 29, no. 11 (2022): 1799–821, https://doi.org/10.1080/13501763.2022.2094987.
[7] Roxana Radu, "Steering the Governance of Artificial Intelligence: National Strategies in Perspective," Policy and Society 40, no. 2 (2021): 178–93, https://doi.org/10.1080/14494035.2021.1929728.

specific legal conditions that should precede and accompany AI integration into the justice system. This gap matters because, in many countries, digital courts have advanced faster than the frameworks governing AI-assisted processes.[8] This study addresses that divergence by treating regulatory readiness and accountability not as risks to be managed after adoption, but as interdependent conditions that must develop alongside the technology itself.

This divergence creates three fundamental governance challenges. First, which judicial functions could lawfully be assigned to AI, and who is responsible for assigning or approving such functions? Second, what safeguards are needed to ensure that the data and outputs of AI systems are reliable and, where necessary, contested by users? Third, should these safeguards be established before AI is introduced, or developed after its deployment? These questions are particularly important where AI is introduced into court administration without clear rules governing its use.[9] These questions are pressing because AI is already being integrated into court functions in some jurisdictions without clear rules governing its use. This study therefore evaluates the regulatory readiness and accountability of Indonesia, Singapore, and Uganda toward an AI-enabled justice system, and identifies the transferable principles their differing approaches suggest.

Indonesia, Singapore and Uganda were selected because they represent different stages of judicial transformation through digitalization rather than because they have similar legal traditions or levels of technological development. Singapore stands out as a model that has advanced along with clear guidelines on responsible use of AI in court processes.[10] Indonesia is somewhere in the middle. It has built extensive digital infrastructure for courts and is beginning to use AI tools in administration.[11] Uganda is different too. Progress has been made in electronic case management and digital services for courts, but development of frameworks for a judicial system enabled by AI

[8] O. V. Bessonov, "Foreign Experience in the Use of Artificial Intelligence in the Judiciary," Uzhhorod National University Herald Series Law 3, no. 88 (2025): 375–80, https://doi.org/10.24144/2307-3322.2025.88.3.56.
[9] R. V. Barannik et al., "Artificial InTELLigence As A Tool For Applying Evaluative Concepts In Criminal Proceedings: Legal And Economic Aspects," Baltic Journal of Economic Studies 12, no. 1 (2026): 125–33, https://doi.org/10.30525/2256-0742/2026-12-1-125-133.
[10] Andrii Hachkevych, "Establishing Frameworks for the Responsible Use of Artificial Intelligence in the Ukrainian Judiciary Based on Foreign Experience," Slovo of the National School of Judges of Ukraine, May 2025, 45, https://doi.org/10.37566/2707-6849-2025-1(50)-3; Nydia Remolina Leon, "AI in the Judiciary: The Singapore Case," in Singapore Management University Institutional Knowledge (InK) (Singapore Management University), Singapore Management University, August 2025, https://ink.library.smu.edu.sg/sol_research/4797.
[11] Rafli Hukom and Martinus Martinus, "The Effectiveness of Artificial Intelligence in Judicial Decision-Making in Indonesia," Hakim 3, no. 1 (2025): 1032–51, https://doi.org/10.51903/hakim.v3i1.2298; Hary Abdul Hakim et al., "AI in Law: Urgency of the Implementation of Artificial Intelligence on Law Enforcement in Indonesia," Jurnal Hukum Novelty 14, no. 1 (2023): 122, https://doi.org/10.26555/novelty.v14i1.a25943.

or judicial AI is very early.[12] Comparing the experiences in the selected jurisdictions makes it possible to examine how regulatory safeguards operate where judicial AI is already being introduced, and what legal and institutional foundations may be needed where its adoption remains limited.

Thus, this study uses doctrinal and comparative legal methods to evaluate legislative frameworks, institutional arrangements, courts' digitalization infrastructure, and accountability mechanisms in three jurisdictions. The study argues that regulatory readiness and accountability are both necessary and interdependent conditions for legitimate integration of AI into judicial systems. At the end, the article identifies comparative lessons that these jurisdictions can learn from each other in the process of regulating AI in judicial systems, while preserving independence of judges and fairness in administration of justice.

B. Method

The primary doctrinal component involves the examination of constitutional provisions, legislative instruments, judicial policy documents, court practice directions and official institutional documentation related to judicial digitalization and the application of AI. Secondary academic literature and materials will be used to describe the applicable legal principles and provide additional context to support the findings of the doctrinal component. Based upon a review of the primary and secondary sources, this study will analyze the legal and institutional requirements necessary to facilitate judicial AI adoption. In addition, it will identify necessary safeguards to protect that can be put in place by the governments to ensure that the development and deployment of judicial AI protects judicial independence, accountability and procedural fairness. A comparative analysis of the countries' legal and policy frameworks, institutional preparedness to adopt technology and data, and their ability to implement procedural safeguards will be conducted. Accountability mechanisms such as human oversight, transparency, explainability, contestability and audibility will also be assessed.

The Comparative component considers Indonesia, Singapore and Uganda. These countries were chosen due to the unique experience each country has had with judicial digitalization and AI

[12] Edgar Kuhimbisa, "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis," International Journal for Court Administration 15, no. 1 (2024), https://doi.org/10.36745/ijca.580.

governance. For Instance, Singapore has created specific guidelines for the use of AI in the judicial system[13], whereas Indonesia has established AI-assisted administrative processes within its rapidly developing digital court structure.[14] Although Uganda has made strides in implementing electronic case management systems,[15] the framework governing AI in the judiciary remains in its infancy. As a result, this research provides the opportunity to compare how regulatory readiness and accountability are approached using different levels of institutional and technological resources. Instead of conducting independent studies of each jurisdiction based on a set of similar criteria, this research evaluates regulatory readiness and accountability across all three jurisdictions according to theme-based criteria. By doing so, this approach enables consideration of the same issues in multiple jurisdictions, thereby highlighting both similarities in the challenges faced by the three jurisdictions, differences in their respective responses and identifying lessons that can inform judicial AI governance.

C. Analysis and Discussion

1. Regulatory Readiness for an AI-enabled Judicial System

Regulatory readiness for an AI-enabled justice system, is concerned with something more than just the existence of digital court infrastructure or systems. A justice system may permit electronic filing, virtual hearings, or online case management without possessing the legal standards required to govern or use AI. Regulatory readiness for judicial AI involves both the legal standards needed to govern AI within courts, as well as the institutional and technical capabilities necessary to support their implementation. An AI-enabled justice system introduces questions that traditional court digitalization does not directly address. It ask questions regarding who will authorize the deployment of AI? What types of data may be used to inform and generate AI? How will systems be validated? Are there opportunities for litigants and judges to question the accuracy of AI generated responses?

[13] Michael Legg et al., "The Promise and the Peril of the Use of Generative Artificial Intelligence in Litigation," University of New South Wales Law Journal 48, no. 4 (2025), https://doi.org/10.53637/cjxx1348.
[14] Hukom and Martinus, "The Effectiveness of Artificial Intelligence in Judicial Decision-Making in Indonesia."
[15] Edgar Kuhimbisa, "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis," International Journal for Court Administration 15, no. 1 (2024), https://doi.org/10.36745/ijca.580.

Therefore, regulatory readiness for judicial AI depends upon the integration of three key elements. These elements, or what we may refer to as readiness, are legislative and policy, institutional capacity, and technological and data foundations. The development and establishment of these foundational elements enable courts to safeguard their independence and ensure fair treatment to litigants once AI becomes integrated into judicial processes.

a. Legislative and Policy Readiness

A cursory look at Singapore's legislative and policy readiness shows that the country has progressed from establishing a digital infrastructure for the court system to providing guidance regarding generative AI. Since October 2024, Singapore's judiciary has provided a comprehensive Guide on the Use of Generative Artificial Intelligence Tools by Court Users.[16] This was done through Registrar's Circular No. 1 of 2024.[17] The Guide applies to all levels of courts in Singapore (the Supreme Court, State Courts and Family Justice Courts) and outlines the manner in which parties and legal representatives may utilize generative AI in court proceedings, while ensuring accountability for the accuracy and suitability of materials generated and submitted.[18] As a result, Singapore has initiated a transformation from general AI governance guidelines to specific court-based rules, rather than relying entirely on national technology policy.[19]

Indonesia's legislative and policy readiness to implement an AI-enabled judicial system rests in large part on a relatively developed legal framework for electronic judicial activities. According to Nurjihad and Ariyanto., in 2019, the Supreme Court enacted Regulation No. 1/2019 governing the conduct of electronic cases and electronic trials. Unlike prior frameworks for e-justice.[20] Vania et al. explained that the scope of this legislative instrument extends beyond electronic filling, payment, and summonses that were provided for under Regulation No. 3/2018, to include exchange of pleadings, examination of witnesses or experts, delivery of conclusions, and electronic

[16] Legg et al., "The Promise and the Peril of the Use of Generative Artificial Intelligence in Litigation."
[17] "Guide on the Use of Generative Artificial Intelligence Tools by Court Users (Registrar's Circular / Singapore Courts) - Singapore | Regulations.AI - The Site on AI Laws and Regulations | Regulations.Ai," accessed August 5, 2026, https://regulations.ai/regulations/RAI-SG-NA-GUGAIXX-2024.
[18] "Guide on the Use of Generative Artificial Intelligence Tools by Court Users (Registrar's Circular / Singapore Courts) - Singapore | Regulations.AI - The Site on AI Laws and Regulations | Regulations.Ai."
[19] Nydia REMOLINA LEON, "AI in the Judiciary: The Singapore Case," in Singapore Management University Institutional Knowledge (InK) (Singapore Management University), Singapore Management University, 2025, https://ink.library.smu.edu.sg/sol%5C_research/4797.
[20] Asbudi Dwi Saputra et al., "Measuring Judicial Accountability in the Algorithmic Era: Juridical Implications of Using Judicial Assistants and Black Box Risks in Constructing Judgment Arguments," SIGn Jurnal Hukum 7, no. 2 (2025): 958–73, https://doi.org/10.37276/sjh.v7i2.570.

pronouncement of decisions.[21] It also introduced the use of video conferencing during hearings and granted access to prosecutors, state attorneys, in-house corporate lawyers, government legal bureaus, and unrepresented litigants (pro se) who hold a valid power of attorney.[22] In 2022, the Supreme Court further clarified the role of e-proceedings in the formal judicial framework when it enacted and implemented the Supreme Court Regulation No. 7/2022 (PERMA 7/2022), thereby amending Regulation No. 1/2019.[23] Although neither of these regulations specifically addresses AI-enabled tools, they legitimized digitally-mediated adjudication as procedurally valid and provide the institutional platform for potential use of AI-assisted tools in the justice system.[24]

It can also be safely asserted that Indonesia has moved beyond conventional e-Court services through the adoption of Smart Majelis (often translated as the Smart Assembly system). By introducing this system, the Supreme Court successfully pushed the judicial system into an active algorithmic court management system. To Alysa and Reynaldi, Smart Majelis is an AI-based tool that that uses algorithmic filtering (data-weighting methods like TOPSIS and Rule-Based Filtering) to facilitate the selection of judicial panels based on experience, competence, historical workload and type of case.[25] According to Abdul and Reynaldi, Smart Majelis is purely an administrative and managerial tool. It is not adjudicative or a core judicial decision-maker.[26] Smart Majelis does not determine liability, interpret evidence, or produce judgments.[27] Rather, it strictly assists the Chief of the Court, who retains final human discretion over panel selection. However, Smart Majelis demonstrates that AI has become involved in an operational court function without

[21] Vania Shafira Yuniar et al., "The Court Role in Providing E-Court System Education to Community: Post-Enactment of Supreme Court Regulation Number 1 of 2019," UNIFIKASI Jurnal Ilmu Hukum 8, no. 1 (2021): 34–42, https://doi.org/10.25134/unifikasi.v8i1.3697.
[22] "Guide on the Use of Generative Artificial Intelligence Tools by Court Users (Registrar's Circular / Singapore Courts) - Singapore | Regulations.AI - The Site on AI Laws and Regulations | Regulations.Ai."
[23] Ahmad Burhanuddin et al., "Summons for Court Proceedings Using Registered Mail in the Perspective of Civil Procedure Law," KnE Social Sciences, ahead of print, January 2024, https://doi.org/10.18502/kss.v9i2.15013.
[24] "Guide on the Use of Generative Artificial Intelligence Tools by Court Users (Registrar's Circular / Singapore Courts) - Singapore | Regulations.AI - The Site on AI Laws and Regulations | Regulations.Ai."
[25] Alysa Al Fitri and Reynaldi Ahmad Taufiqurrahman, "The Use of Artificial Intelligence in Assigning and Appointing Judicial Panels in Indonesian Courts," Pena Justisia: Media Komunikasi Dan Kajian Hukum 23, no. 2 (2024): 7540–53, https://doi.org/10.31941/PJ.V23I3.5162.
[26] Abdul Basit Misbachul Fitri and Reynaldi Ahmad Taufiqurrahman, "The Use of Artificial Intelligence in Assigning and Appointing Judicial Panels in Indonesian Courts," Pena Justisia Media Komunikasi Dan Kajian Hukum 23, no. 3 (2024): 1961–74, https://doi.org/10.31941/pj.v23i3.5162.
[27] Joice Soraya and Zico Junius Fernando, "AI Judges and the Future Revolution of the Judicial Profession in Indonesia," The Indonesian Journal of International Clinical Legal Education 6, no. 3 (2024): 393–426, https://doi.org/10.15294/iccle.v6i3.15358.

yet being subject to a clearly defined public judicial AI Code or framework.[28] Thus, the present framework appears stronger on authorising digital process than on defining the standards applicable to algorithmic administration.

In contrast, Uganda still focuses primarily on digital process rather than on AI. The Judicature (Electronic Filing, Service and Virtual Proceedings) Rules 2025 established a systematic basis for electronically registering documents, filing, serving documents, paying fees, signing documents, conducting virtual hearings, presenting electronic evidence and creating digital archives.[29] All levels of the Courts of Judicature are bound by the Rules and define the Electronic Court Case Management Information System (ECCMIS) as the authorized system for electronic case management and filing.[30] Moreover, Rule 5(2)(j) provides for the use of other technologies approved by the Chief Justice for case management purposes.[31] While this provision provides an opportunity for future judicial AI tools to be accommodated, no specific rules related to validating, procuring, explaining or reviewing human judgments exist. Therefore, Uganda is presently lawfully ready for digital justice but not fully prepared for judicial AI.

This comparative analysis highlights a difference between procedural digitalization and regulation of AI. Indonesia and Uganda have laws that support electronic judicial activities, while Singapore has moved from building digital infrastructure to providing guidance about generative AI.[32] This difference matters because regulation cannot rely on provisions that only apply to electronically filed documents or hearings that are conducted virtually. It would require specification of the particular judicial roles that may utilize AI tools, identification of who will

[28] "Justice in the Age of AI: Indonesia's Regulatory Gap - OBSERVER - the Latest Information about Indonesian News and Social Culture," accessed August 5, 2026, https://observerid.com/justice-in-the-age-of-ai-indonesias-regulatory-gap/.
[29] "Judicature (Electronic Filing, Service and Virtual Proceedings) Rules, 2025 – ULII," accessed August 5, 2026, https://ulii.org/en/akn/ug/act/si/2025/21/eng@2025-03-07.
[30] Abdirizak Abdinasir Yusuf et al., "The Development and Growth of Ai in Uganda: How Is Uganda Faring from a Legal Perspective?," Kampala International University Law Journal 6, no. 2 (2024): 204–23, https://doi.org/10.59568/kiulj-2024-6-2-11.
[31] "Judiciary ICT and Documentation Committee Begins Two-Day Retreat to Shape Digital Transformation Agenda," accessed August 5, 2026, https://judiciary.go.ug/data/news/1772/3/Judiciary%20ICT%20and%20Documentation%20Committee%20Begins%20Two-Day%20Retreat%20to%20Shape%20Digital%20Transformation%20Agenda.html.
[32] Legg et al., "The Promise and the Peril of the Use of Generative Artificial Intelligence in Litigation"; Bagus Sujatmiko et al., "Court System Transformation; Maximizing Electronic Courts through the Implementation of Swift, Simple, and Cost Effective Principles," Sultan Jurisprudence Jurnal Riset Ilmu Hukum 3, no. 2 (2023): 132, https://doi.org/10.51825/sjp.v3i2.22214.

approve each tool and definition of which protective measures should be implemented prior to deployment.

b. Institutional Readiness

Legal authority is insufficient when courts do not have qualified personnel, governance structures, or training. Singapore's institutional readiness can be seen in how it developed its AI tools phase by phase in the Small Claims Tribunals.[33] According to Leon, first, the judiciary launched generative-AI translation support and then a case-summarization tool for Tribunal Magistrates and self-represented parties.[34] The system uses AI to summarize facts, evidence, positions and disputed issues,[35] without providing the user with case specific legal advice.[36] The official Singapore Judiciary Media Release explicitly states that prior to the launch of the platforms, it underwent testing and incorporated confidentiality measures and secure storage.[37] In doing so, this phased approach demonstrates that there appears to be an institutional preference for the development of a step by step AI-enabled judicial system, rather than a quick and expanded use in adjudicative reasoning.

Indonesia's institutional position is less settled but not underdeveloped. The Indonesian judicial system has developed e-court and e-Litigation,[38] then e-Berpadu, and Smart Majelis as part of judicial administration. E-Berpadu allows courts to connect with police investigators, prosecutors, correctional institutions, advocates and members of the public during criminal case processes.[39] Smart Majelis could be seen as the judiciary's first operational step into AI/machine-assisted administration. The interoperability provided here is a valuable starting point for future AI use. This is because algorithmic systems depend on structured records and consistent data

[33] "Judiciary ICT and Documentation Committee Begins Two-Day Retreat to Shape Digital Transformation Agenda."
[34] LEON, "AI in the Judiciary: The Singapore Case," 2025.
[35] "Judiciary ICT and Documentation Committee Begins Two-Day Retreat to Shape Digital Transformation Agenda."
[36] "Singapore Courts Rolls out New AI Tool to Help Support, Summarise Small Claims Tribunals Cases | The Straits Times," accessed August 5, 2026, https://www.straitstimes.com/singapore/singapore-courts-rolls-out-new-ai-tool-to-help-support-summarise-small-claims-tribunals-cases.
[37] "Media Release: New Generative AI-Powered Case Summarisation Tool to Help Small Claims Tribunals Users," accessed August 5, 2026, https://www.judiciary.gov.sg/news-and-resources/news/news-details/media-release--new-generative-ai-powered-case-summarisation-tool-to-help-small-claims-tribunals-users.
[38] Mulyani Zulaeha, "E-Courts in Indonesia: Exploring the Opportunities and Challenges for Justice and Advancement to Judicial Efficiency," International Journal of Criminal Justice Sciences 18, no. 1 (2023): 183–94, https://doi.org/10.5281/zenodo.4756212. Built under PERMA 1/2019 and PERMA 7/2022 to automate civil court registries, payments, summonses, and digital legal briefs
[39] Nur Hamda Sa'idah, "Dampak Implementasi Aplikasi E-Berpadu Terhadap Efisiensi Proses Peradilan Pidana Di Pengadilan Negeri Semarang," in Walisongo Repository (Walisongo State Islamic University), Walisongo State Islamic University, 2025.

flows. However, the fact that there are multiple digital platforms does not necessarily mean that judges, registrars, and court administrators have been trained in algorithmic risk management,[40] nor has the available framework established permanent judicial body to approve or audit AI applications.[41] Therefore, while Indonesia may possess significant operational capacity, it also maintains gaps in governance at the point where digital administration becomes algorithmic administration.

Uganda is still building institutional readiness through digital transformation such as ECCMIS.[42] Judicial officers and court staff have received repeated training as ECCMIS expands to more clusters.[43] Accounts describe ECCMIS as supporting remote access, online filing and electronic payments and reducing physical movement.[44] Stakeholders have also recognized that effective use of ECCMIS depends both on training and technical support.[45] Practical concerns raised by stakeholders include equipment costs, staff capacity and missing records among other transition challenges.[46] These are not simple concerns. An AI system introduced into an uneven digital environment may perform poorly or ineffectively. It might reproduce incomplete records and exacerbate disparities between courts well resourced versus poorly connected. It also places additional burden on staff still adapting to electronic case management.

Therefore, Uganda's limited specific circumstances related to AI are considered a substantive finding. Lack of a judicial body for AI or specific guidance for courts means future adoption could proceed administratively before questions of authority and institutional responsibility are addressed. Therefore, regulatory preparation should include judicial training in technology,

[40] Sojida Murodova, "The Black Box Problem in Administering Justice: Risks of Opaque Algorithms in Legal Decision-Making," International Journal of Law and Policy 3, no. 6 (2025): 1–20, https://doi.org/10.59022/ijlp.331.
[41] Sa'idah, "Dampak Implementasi Aplikasi E-Berpadu Terhadap Efisiensi Proses Peradilan Pidana Di Pengadilan Negeri Semarang."
[42] Kuhimbisa, "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis," 2024.
[43] Zulaeha, "E-Courts in Indonesia: Exploring the Opportunities and Challenges for Justice and Advancement to Judicial Efficiency."
[44] Zulaeha, "E-Courts in Indonesia: Exploring the Opportunities and Challenges for Justice and Advancement to Judicial Efficiency."
[45] "ECCMIS Is Here to Stay, CJ Owiny - Dollo," accessed August 5, 2026, https://judiciary.go.ug/data/news/1331/0/ECCMIS.
[46] "Judiciary's Transition to A Paperless Court System Effective June 1 – Majority Dots Connect to No Readiness – Uganda Law Society," accessed August 5, 2026, https://uls.or.ug/judiciarys-transition-to-a-paperless-court-system-effective-june-1-majority-dots-connect-to-no-readiness/.

expertise within court administration and a defined approval process before using any AI system for panel assignment or document analysis or prediction of cases.

c. Technical and Data Readiness

Judicial AI relies on data that is accessible, reliable and secure. Singapore Community Justice and Tribunals System already allows filing online, managing cases, making electronic payments and interacting digitally during proceedings.[47] Later, they added a system that supports translation and summarization, backed by a single integrated platform rather than a collection of paper and electronic records.[48] Technically, this reduces but does not remove risks related to inconsistent data formats or disconnected systems.

Indonesia also has a strong base in technology. E-Court handles registration, payments and summonses for litigation.[49] While e-Berpadu supports the exchange of criminal process information among justice institutions.[50] Smart Majelis shows that court data can help allocate panels.[51] But criteria transparency, correction of errors and reviewability of assignments are other questions that arise. Having these questions does not mean Smart Majelis is flawed. They indicate that technical capability must go hand in hand with rules that guarantee high quality data and auditability.

Uganda has rules starting in 2025 that include electronic registers, files, signatures, archiving, evidence and virtual proceedings. They also require filing electronically if ECCMIS has been deployed and allow fallback if there are technical glitches. Having fallback is valuable because access to justice cannot rely on uninterrupted technology alone. Rollout of ECCMIS began with pilot courts and is still being extended to all courts.[52] Uneven ICT capacity, including equipment

[47] Ow Yong Tuck Leong, "Access to Justice and Innovative Court Solutions for Litigants-in-Person," International Journal of Online Dispute Resolution 5 (2018): 9–17, https://doi.org/10.5553/ijodr/235250022018005102003.
[48] Sa'idah, "Dampak Implementasi Aplikasi E-Berpadu Terhadap Efisiensi Proses Peradilan Pidana Di Pengadilan Negeri Semarang."
[49] Taun Taun et al., "Application of E-Court in Different Countries: A Comparative Study in the Development of E-Court," in Advances in Social Science, Education and Humanities Research/Advances in Social Science, Education and Humanities Research (2023), https://doi.org/10.2991/978-2-38476-164-7%5C_100.
[50] Desi Apriguna Singarimbun and Kartina Pakpahan, "Implementation of the Electronic Criminal Case File Transfer System," YURISDIKSI Jurnal Wacana Hukum Dan Sains 20, no. 1 (2024): 58–65, https://doi.org/10.55173/yurisdiksi.v20i1.229.
[51] A. B. M. Fitri and Taufiqurrahman, "The Use of Artificial Intelligence in Assigning and Appointing Judicial Panels in Indonesian Courts."
[52] Kuhimbisa, "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis," 2024.

readiness and human resources, is a documented concern in comparable court systems.[53] Rollout of ECCMIS has revealed uneven ICT capacity concerns about equipment readiness and human resources. Before adding AI, Uganda needs to ensure that digital records are sufficiently complete, that courts in less urban areas can participate and that procurement contracts preserve judicial control over data.

Across jurisdictions studied, two observations stand out. The first is that development levels for foundational elements related to an AI-enabled judicial system are different. These elements include legislative and policy development, institutional capacity and technology and data. Singapore stands closest to an integrated model because guidance from courts, digital platforms and limited use of AI have developed together. Singapore has gone from digitizing courts to implementing supervised generative AI. Indonesia currently has a solid framework for electronic courts, but governance specific to AI is not as prominent relative to technological progress.[54] Infrastructure and administrative tools for AI exist, but governance specific to AI is less visible.[55] Uganda has recently solidified legal bases for electronic justice but has not yet implemented a clear framework for judicial AI. Right now, the priority is consolidating ECCMIS and addressing institutional disparities.[56] Comparison suggests that introducing judicial AI cannot be treated merely as updating software. Introduction requires decisions beforehand about lawful functions, control of data and competence and limits of reliance on automation.

2. Accountability in Judicial AI

Regulatory readiness determines whether judicial systems are prepared to introduce AI. Readiness alone, however, cannot ensure that AI operates consistently with the rule of law once deployment begins. An AI-enabled judicial system, or Judicial AI, requires accountability mechanisms capable of protecting judicial independence and procedural fairness, and with them the public confidence on which courts depend.[57] Unlike administrative technologies that merely digitise existing procedures, AI may influence the production, organisation, or presentation of

[53] Sarah Charles and Thadeus Mmassy, "Enhancing the Quality of Judicial Service Delivery through E-Filing System: The Case of Rukwa District Courts in Tanzania.," Hometown Advertising Limited. 32, no. 1 (2024): 64–86, https://doi.org/10.69522/uongozi.v32i1.85.
[54] Ummi Maskanah, "Artificial Intelligence in Civil Justice: Comparative Legal Analysis and Practical Frameworks for Indonesia," Jambura Law Review 7, no. 1 (2025): 225–42, https://doi.org/10.33756/jlr.v7i1.27786.
[55] Soraya and Fernando, "AI Judges and the Future Revolution of the Judicial Profession in Indonesia."
[56] Yusuf et al., "The Development and Growth of Ai in Uganda: How Is Uganda Faring from a Legal Perspective?"
[57] David Leslie et al., "Artificial Intelligence, Human Rights, Democracy, and the Rule of Law: A Primer," SSRN Electronic Journal, ahead of print, 2021, https://doi.org/10.2139/ssrn.3817999.

information on which judicial decisions depend.[58] Its governance therefore extends beyond technical performance and includes to questions of legal responsibility, transparency, and institutional control. Various factors are associated with accountability in an AI-enabled judicial system.

a. Human oversight

Meaningful human oversight of AI requires more than just being able to exercise some degree of authority over the output of an AI system.[59] To maintain such oversight, the responsible judicial officer must have the authority and knowledge needed to determine whether the AI system output is acceptable or whether it should be rejected or corrected as appropriate. In addition, the judicial officer needs access to the same quality and quantity of information as would be available if the judicial officer were making the assessment without use of the AI tools. The judicial officer should be able to provide explanations for all decisions made by virtue of the AI's assistance. All decisions which are assisted by the AI should be open to review using the appropriate judicial procedures provided under law.[60] The three countries studied show that regulations have been put in place to allow for judicial authority even when administrative functions are supported by AI. In Singapore, guidance for the use of generative AI allows the user to verify content generated by AI prior to submitting it to the courts.[61] As a result, the user bears the responsibility for the accuracy of the information generated.[62] It is expected that AI may aid in legal work, but will never supplant professional judgment nor relieve the obligation of duty owed to the court.

Indonesia adopts a comparable approach through practice rather than explicit AI regulation.[63] Smart Majelis uses AI to suggest panel assignments based on workload and case characteristics.[64] Judges on panels retain full discretion and Smart Majelis just helps administratively. There is an

[58] Victoria Hendrickx, "Rethinking the Judicial Duty to State Reasons in the Age of Automation?," Cambridge Forum on AI Law and Governance 1 (January 2025), https://doi.org/10.1017/cfl.2025.11.
[59] Isabella Banks, "Judges-in-the-Loop? Judicial Involvement in Human Oversight of High-Risk Decision Support Systems under the EU AI Act," International Journal of Law and Information Technology 34 (January 2026), https://doi.org/10.1093/ijlit/eaag001.
[60] Erwin Susilo, "Judging with Practical Wisdom in Digital Courts: Paul Ricœur's Little Ethics and the Ethical Governance of AI in the Judiciary," Ceniiac 2 (February 2026), https://doi.org/10.64923/ceniiac.e0011.
[61] Leong, "Access to Justice and Innovative Court Solutions for Litigants-in-Person."
[62] Joshua Yuvaraj, "The Verification-Value Paradox: A Normative Critique of Gen AI in Legal Practice," in ArXiv.Org (2025), https://doi.org/10.48550/arxiv.2510.20109.
[63] Karmila Karmila and Setiawati Setiawati, "Implikasi Hukum Terhadap Artificial Dalam Sistem Peradilan Di Indonesia," Kajian Ilmiah Hukum Dan Kenegaraan 3, no. 1 (2025): 57–67, https://doi.org/10.35912/kihan.v3i1.4683.
[64] A. B. M. Fitri and Taufiqurrahman, "The Use of Artificial Intelligence in Assigning and Appointing Judicial Panels in Indonesian Courts."

important difference here. Administration with AI is different from adjudication with AI and current practice in Indonesia reflects administration.

Uganda's judiciary has pursued digital transformation of court administration through e-justice platforms,[65] but the available literature does not document AI applications of this kind in administration. Preservation of oversight therefore relies on the lack of systems that support decisions algorithmically rather than on specific safeguards for AI. Future adoption would need clear rules that specify which judicial functions can be delegated to AI and which must be left to judicial discretion exclusively.

b. Transparency and Explainability

Accountability also depends on judges, litigants and court administrators understanding how AI influences work. Transparency is concerned with whether the use of AI, its purpose and its role in judicial processes are made known.[66] Explainability, on the other hand, is concerned with whether judges and affected parties can sufficiently understand the basis on which an AI-generated output is made and also the ability to challenge it.[67] These principles become especially important when AI helps sort cases, analyze documents or perform predictive functions that indirectly affect proceedings.

Looking at jurisdictions considered, Singapore focuses on procedural obligations rather than on technical disclosure requirements. Ravikrishnan et al. were of the opinion that users of courts have to review material generated by AI and they cannot submit fabricated authorities or inaccurate information generated by AI.[68] Regulatory emphasis therefore rests on preserving the integrity of judicial proceedings rather than requiring disclosure of proprietary algorithms. Indonesia presents a different challenge.[69] Smart Majelis considers objective factors such as workload and judicial expertise, but there is very little public information about how its algorithm works or review

[65] Kuhimbisa, "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis," 2024.
[66] Barannik et al., "Artificial InTELLigence As A Tool For Applying Evaluative Concepts In Criminal Proceedings: Legal And Economic Aspects."
[67] Hendrickx, "Rethinking the Judicial Duty to State Reasons in the Age of Automation?"
[68] Ravikrishnan E. M et al., "AI-Enabled Online Dispute Resolution in China and Singapore: Institutional Design, Procedural Safeguards and Comparative Lessons," International Journal of Law Management and Humanities 9, no. 3 (2026): 1786–805, https://doi.org/10.10000/IJLMH.1112197.
[69] Sarah Kienzle et al., "AI and Prediction of Criminal Justice Risk: Revisiting the COMPAS Dataset, Experiments, and the Problem of Algorithmic Bias and Fairness," AI and Ethics 2026 6:3 6, no. 3 (2026): 264-, https://doi.org/10.1007/S43681-026-01116-0.

procedures for automated recommendations.[70] This does not prove accountability is lacking but it does show the importance of ensuring administrative tools that use AI remain sufficiently transparent so institutions can oversee and build public confidence. Uganda hasn't run into practical issues because judicial AI hasn't advanced beyond preparatory stage.[71] But the lack of specific regulation for AI suggests transparency requirements should be part of any future governance framework rather than developing them after deployment has already happened.[72]

c. Judicial Independence and Procedural Fairness

Judicial independence forms the constitutional basis of every judicial system studied here. Therefore AI support should be for administration but should not interfere with judges exercising judicial authority independently. Judicial independence also requires that courts retain control over the AI systems or tools that are being deployed.[73] This is to ensure that government officials, technology providers or other external actors cannot improperly influence judicial processes through system design, access to data, or control over automated outputs. Distinction between administrative support and adjudication is especially important. The safeguards required should therefore reflect the role AI performs. In administrative or case management systems, the primary requirements may include accurate data and clearly defined tasks with adequate opportunity for correction of any errors. For systems which provide legal analytical functions or assist with decision making it is much more important to scrutinize them closely, as they have the potential to impact a judge's reasoning. Additionally, where the use of artificial intelligence impacts the determination of issues of fact that affect a party's legal rights, there is a need for enhanced protection in order to ensure that judges continue to bear responsibility for the determinations made by them, and that parties can seek review of any AI-assisted findings.

[70] Karmila and Setiawati, "Implikasi Hukum Terhadap Artificial Dalam Sistem Peradilan Di Indonesia."
[71] Opeyemi Obisesan Olawunmi et al., "The Incorporation of Artificial Intelligence in Legal Practice in Uganda: Prospects and Socio-Economic Issues," Kampala International University Law Journal 6, no. 2 (2024): 163–88, https://doi.org/10.59568/kiulj-2024-6-2-09.
[72] Yusuf et al., "The Development and Growth of Ai in Uganda: How Is Uganda Faring from a Legal Perspective?"; Opeyemi Obisesan Olawunmi et al., "The Incorporation of Artificial Intelligence in Legal Practice in Uganda: Prospects and Socio-Economic Issues," Kampala International University Law Journal 6, no. 2 (2024): 163–88, https://doi.org/10.59568/kiulj-2024-6-2-09.
[73] David J. Drozd, "Judicial Independence and the Use of Artificial Intelligence in Courts," Law and State 99, no. 2 (2023): 15–27, https://doi.org/10.51634/2307-5201_2023_2_15; Marcin Górski, "Why a Human Court? On the Right to a Human Judge in the Context of the Fair Trial Principle," Eucrim – The European Criminal Law Associations Forum 18, no. 1 (2023): 83–88, https://doi.org/10.30709/eucrim-2023-008.

Related concerns also arise with respect to procedural fairness. Parties should understand how AI has affected judicial processes if use of AI affects their rights or effective participation in proceedings. Systems should not reduce opportunities to challenge evidence, present arguments, or seek review of procedural decisions. Safeguards become more important as AI takes on more complex tasks within administration.

The three jurisdictions show different stages of this discussion. Singapore shows that regulation of use of AI in court processes is already underway and preserves responsibility and control by judges.[74] Indonesia shows that administrative use of AI can be introduced without extending support to adjudication, but further guidance will likely become necessary as use of AI grows.[75] Uganda can also incorporate principles of judicial independence and procedural fairness before operational AI becomes part of its court system.[76] Doing this reduces later regulatory changes or difficulties because accountability requirements can be built right into design rather than imposed after deployment happens.

This comparative analysis also shows that accountability is not just about responding to risks from technology. It is a continuing legal duty that shapes how AI is designed, authorized, supervised, and reviewed throughout use in judicial systems. Ultimately, the legitimacy of courts does not depend very much on whether courts use AI but rather on whether responsibility under law, institutional oversight and procedural protections remain firmly under human control.

3. Comparative Lessons for Judicial AI Governance

Comparing Indonesia, Singapore and Uganda reveals five principles for regulating judicial AI. Differences exist among institutional development among the countries but results show legitimacy of using AI in judicial settings depends less on sophistication of technology than on legal and institutional framework governing use of that technology. Comparative analysis contains some unique lessons.

The first lesson is that essential regulatory safeguards should be established before judicial AI is deployed and strengthened as its use develops. Just because a jurisdiction has digitized many aspects of its court system, like electronic filing, virtual hearings, and digital case management, does not mean that it is ready to deploy AI systems. In fact, it has been shown that even countries

[74] LEON, "AI in the Judiciary: The Singapore Case," 2025.
[75] Dwi Bintang Satrio et al., "Integrating AI into Small Claims Courts: Lessons from Global Practices for Legal Reform in Indonesia," Journal of Law and Legal Reform 7, no. 1 (2026): 337–76, https://doi.org/10.15294/jllr.v7i1.24028.
[76] Yusuf et al., "The Development and Growth of Ai in Uganda: How Is Uganda Faring from a Legal Perspective?"

such as Indonesia and Uganda, with advanced levels of digitalization, do not have specific regulations related to AI.[77] On the other hand, Singapore provides a good example of a country that has developed both the infrastructural, institutional and technical requirements necessary to support AI systems and has also issued guidelines for the responsible use of those systems.[78] The comparison therefore suggests that courts should establish clear authority for AI use and appropriate safeguards before introducing particular AI applications, rather than assuming that existing rules on electronic proceedings are sufficient.

Another lesson is that institutional capacity should develop alongside legal reform. It is unlikely that legislation alone will ensure that AI is adopted responsibly by courts unless those courts are able to oversee the entire life cycle or processes of AI.[79] For example, while Singapore has been introducing policies that integrate AI-assisted tools into its courts at a slow pace,[80] it has done so in a deliberate manner which reflects a conservative approach to building institutional capacity. Similarly, Uganda's continuing investment in digital infrastructure suggests that preparation should precede deployment.[81] Indonesia falls somewhere in between, as it operates advanced platforms for delivering justice electronically, but lacks adequate public guidance regarding the use of AI in its judicial administration.[82]

Another major lesson is that judicial accountability must remain direct and not delegated. None of the three jurisdictions allow AI to replace reasoning by judges.[83] Current uses of AI are therefore limited to administrative or supportive roles and judges retain full responsibility to ensure that justice is delivered fairly and independently. The degree of oversight should reflect the function involved, with stronger safeguards where AI-generated outputs may influence judicial reasoning or affect the rights of parties.

Regulatory approaches to judicial AI should be flexible enough to fit unique circumstances of each jurisdiction but based on respect for the rule of law. There is no single model that would work

[77] Hukom and Martinus, "The Effectiveness of Artificial Intelligence in Judicial Decision-Making in Indonesia."
[78] Legg et al., "The Promise and the Peril of the Use of Generative Artificial Intelligence in Litigation."
[79] David J. Mark et al., "Regulating Automated Decision-Making in the Justice System: What Is the Problem?," in Edward Elgar Publishing eBooks (Edward Elgar Publishing, 2024), https://doi.org/10.4337/9781803922171.00034.
[80] Leong, "Access to Justice and Innovative Court Solutions for Litigants-in-Person."
[81] Kuhimbisa, "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis," 2024.
[82] Karmila and Setiawati, "Implikasi Hukum Terhadap Artificial Dalam Sistem Peradilan Di Indonesia."
[83] Syarifah Lisa Andriati et al., "Justice on Trial: How Artificial Intelligence Is Reshaping Judicial Decision-Making," Journal of Indonesian Legal Studies 9, no. 2 (2024), https://doi.org/10.15294/jils.v9i2.13683.

uniformly across Singapore, Indonesia and Uganda. Singapore has designed regulatory frameworks specifically tailored to a judiciary that is very enabled by digital technology.[84] On the other hand, Indonesia and Uganda have focused on very different institutional priorities. However, key values are evident in all three countries, including legality, transparency, accountability and sufficient human oversight. Implementation may vary according to local conditions, but underlying values will remain the same.

Also, governance of judicial AI should evolve gradually or slowly. Comparative study shows that judicial AI should evolve through gradual institutional development rather than by rapidly advancing technology. Gradual development allows regulatory frameworks, institutional capacity and accountability structures to evolve as technology evolves and could reduce governance risk and preserve the integrity and legitimacy of judicial processes.

Taken together, then, these principles support the central argument that readiness for regulation and accountability reinforce each other as necessary for legitimate integration of AI into judicial systems. Readiness provides a legal, institutional and technical base on which AI can be deployed, and accountability ensures ongoing governance throughout processes with human oversight and procedural protections. Neither of these conditions can be substituted for the other. Judicial AI must inspires public trust when technology progresses alongside the laws that govern its use rather than before those laws are made.

D. Conclusions

There exists a firm belief that as time goes on, AI is likely to play a bigger role in judicial administration. But the legitimacy of AI goes beyond just having good technology. This study argues that regulation of judicial AI should evolve together as complementary parts of a system rather than sequential phases of reform. Comparing Indonesia, Singapore and Uganda, we find that simply having a program for digitalizing courts is not enough to ensure good governance of processes assisted by AI. Legitimate use of AI depends on interactions among legal authority, institutional strength, technical preparation and ongoing human oversight. Comparisons also show that countries don't have to adopt the same kind of regulatory regime. All three countries are at different stages of digitalization of courts and therefore their emphases on regulation vary.

[84] LEON, "AI in the Judiciary: The Singapore Case," August 2025.

Variation does not diminish the value of comparison, but it does point out that ordering and assigning priority to phases of reforms will depend on institutional readiness and maturity levels of technology regardless of whether jurisdictions share similar principles of rule of law or similar experiences.

This study is limited to a doctrinal and comparative analysis of three jurisdictions: Indonesia, Singapore and Uganda. It is based on available legal and institutional documents. The study does not necessarily assess how judicial AI systems operate in practice. Its findings should therefore be understood within the legal and institutional contexts of the three jurisdictions examined. The study recommends that judicial AI should not be viewed just as another level or form of digitalization of courts. A unique regulatory structure is needed that preserves independence of judges, procedural fairness, transparency, and public trust throughout the whole process of AI. Future reforms that aim to increase technological capability should go hand in hand with efforts to strengthen laws and institutions governing how judicial systems implement such technologies. An approach like this potentially allows judicial systems to benefit from AI while also safeguarding fundamental constitutional principles that support administration of justice.

References

Journal Articles

Andriati, Syarifah Lisa, Inneke Kiki Rizki, and Ain Najwa Binti Mohd Malian. "Justice on Trial: How Artificial Intelligence Is Reshaping Judicial Decision-Making." *Journal of Indonesian Legal Studies* 9, no. 2 (2024). https://doi.org/10.15294/jils.v9i2.13683.

Anu, Anu. "The Role of Artificial Intelligence in Transforming Legal Practice and Access to Justice." *Indian Journal of Law.* 3, no. 4 (2025): 27–30. https://doi.org/10.36676/ijl.v3.i4.113.

Banks, Isabella. "Judges-in-the-Loop? Judicial Involvement in Human Oversight of High-Risk Decision Support Systems under the EU AI Act." *International Journal of Law and Information Technology* 34 (January 2026). https://doi.org/10.1093/ijlit/eaag001.

Barannik, R. V., O. R. Balatska, and Oleh Holovko. "ARTIFICIAL INTELLIGENCE AS A TOOL FOR APPLYING EVALUATIVE CONCEPTS IN CRIMINAL PROCEEDINGS: LEGAL AND ECONOMIC ASPECTS." *Baltic Journal of Economic Studies* 12, no. 1 (2026): 125–33. https://doi.org/10.30525/2256-0742/2026-12-1-125-133.

Bessonov, O. V. "Foreign Experience in the Use of Artificial Intelligence in the Judiciary." *Uzhhorod National University Herald Series Law* 3, no. 88 (2025): 375–80. https://doi.org/10.24144/2307-3322.2025.88.3.56.

Burhanuddin, Ahmad, Syeh Sarip Hadaiyatullah, and Pramudya Wisesa. "Summons for Court Proceedings Using Registered Mail in the Perspective of Civil Procedure Law." *KnE Social Sciences*, ahead of print, January 2024. https://doi.org/10.18502/kss.v9i2.15013.

Charles, Sarah, and Thadeus Mmassy. "Enhancing the Quality of Judicial Service Delivery through E-Filing System: The Case of Rukwa District Courts in Tanzania." *Hometown Advertising Limited.* 32, no. 1 (2024): 64–86. https://doi.org/10.69522/uongozi.v32i1.85.

Contini, Francesco. "Artificial Intelligence and the Transformation of Humans, Law and Technology Interactions in Judicial Proceedings." *Law Technology and Humans* 2, no. 1 (2020): 4–18. https://doi.org/10.5204/lthj.v2i1.1478.

Djeffal, Christian, Markus B. Siewert, and Stefan Wurster. "Role of the State and Responsibility in Governing Artificial Intelligence: A Comparative Analysis of AI Strategies." *Journal of European Public Policy* 29, no. 11 (2022): 1799–821. https://doi.org/10.1080/13501763.2022.2094987.

Drozd, David J. "Judicial Independence and the Use of Artificial Intelligence in Courts." *Law and State* 99, no. 2 (2023): 15–27. https://doi.org/10.51634/2307-5201_2023_2_15.

Fitri, Abdul Basit Misbachul, and Reynaldi Ahmad Taufiqurrahman. "The Use of Artificial Intelligence in Assigning and Appointing Judicial Panels in Indonesian Courts." *Pena Justisia Media Komunikasi Dan Kajian Hukum* 23, no. 3 (2024): 1961–74. https://doi.org/10.31941/pj.v23i3.5162.

Fitri, Alysa Al, and Reynaldi Ahmad Taufiqurrahman. "The Use of Artificial Intelligence in Assigning and Appointing Judicial Panels in Indonesian Courts." *Pena Justisia: Media Komunikasi Dan Kajian Hukum* 23, no. 2 (2024): 7540–53. https://doi.org/10.31941/PJ.V23I3.5162.

Ghoshal, Rajesh. "Smart Justice: AI for Fair \& Fast Legal Systems." *International Journal of Advanced Research in Education and Technology* 11, no. 6 (2024). https://doi.org/10.15680/ijarety.2024.1106113.

Górski, Marcin. "Why a Human Court? On the Right to a Human Judge in the Context of the Fair Trial Principle." *Eucrim – The European Criminal Law Associations Forum* 18, no. 1 (2023): 83–88. https://doi.org/10.30709/eucrim-2023-008.

Hachkevych, Andrii. "Establishing Frameworks for the Responsible Use of Artificial Intelligence in the Ukrainian Judiciary Based on Foreign Experience." *Slovo of the National School of Judges of Ukraine*, May 2025, 45. https://doi.org/10.37566/2707-6849-2025-1(50)-3.

Hakim, Hary Abdul, Chrisna Bagus Edhita Praja, and Sung Ming-Hsi. "AI in Law: Urgency of the Implementation of Artificial Intelligence on Law Enforcement in Indonesia." *Jurnal Hukum Novelty* 14, no. 1 (2023): 122. https://doi.org/10.26555/novelty.v14i1.a25943.

Hendrickx, Victoria. "Rethinking the Judicial Duty to State Reasons in the Age of Automation?" *Cambridge Forum on AI Law and Governance* 1 (January 2025). https://doi.org/10.1017/cfl.2025.11.

Hukom, Rafli, and Martinus Martinus. "The Effectiveness of Artificial Intelligence in Judicial Decision-Making in Indonesia." *Hakim* 3, no. 1 (2025): 1032–51. https://doi.org/10.51903/hakim.v3i1.2298.

Javed, Kashif, and Jianchun Li. "Bias in Adjudication: Investigating the Impact of Artificial Intelligence, Media, Financial and Legal Institutions in Pursuit of Social Justice." *PLoS ONE* 20, no. 1 (2025). https://doi.org/10.1371/journal.pone.0315270.

Karmila, Karmila, and Setiawati Setiawati. "Implikasi Hukum Terhadap Artificial Dalam Sistem Peradilan Di Indonesia." *Kajian Ilmiah Hukum Dan Kenegaraan* 3, no. 1 (2025): 57–67. https://doi.org/10.35912/kihan.v3i1.4683.

Kienzle, Sarah, Gissel Velarde, and Brian Gannon. "AI and Prediction of Criminal Justice Risk: Revisiting the COMPAS Dataset, Experiments, and the Problem of Algorithmic Bias and Fairness." *AI and Ethics 2026 6:3* 6, no. 3 (2026): 264-. https://doi.org/10.1007/S43681-026-01116-0.

Kuhimbisa, Edgar. "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis." *International Journal for Court Administration* 15, no. 1 (2024). https://doi.org/10.36745/ijca.580.

Kuhimbisa, Edgar. "Experience and Impact of Digital Transformation in the Administration of Justice in Uganda: A Critical Analysis." *International Journal for Court Administration* 15, no. 1 (2024). https://doi.org/10.36745/ijca.580.

Legg, Michael, Vicki McNamara, and Armin Alimardani. "The Promise and the Peril of the Use of Generative Artificial Intelligence in Litigation." *University of New South Wales Law Journal* 48, no. 4 (2025). https://doi.org/10.53637/cjxx1348.

Leong, Ow Yong Tuck. "Access to Justice and Innovative Court Solutions for Litigants-in-Person." *International Journal of Online Dispute Resolution* 5 (2018): 9–17. https://doi.org/10.5553/ijodr/235250022018005102003.

Leslie, David, Christopher Burr, Mhairi Aitken, Josh Cowls, Michael Katell, and Morgan Briggs. "Artificial Intelligence, Human Rights, Democracy, and the Rule of Law: A Primer." *SSRN Electronic Journal*, ahead of print, 2021. https://doi.org/10.2139/ssrn.3817999.

M, Ravikrishnan E., Dr. Ruchir Singh, Ravikrishnan E. M, and Dr. Ruchir Singh. "AI-Enabled Online Dispute Resolution in China and Singapore: Institutional Design, Procedural

Safeguards and Comparative Lessons." *International Journal of Law Management and Humanities* 9, no. 3 (2026): 1786–805. https://doi.org/10.10000/IJLMH.1112197.

Manos, Nikolaos, Emmanouil Technitis, and Athanassia Sykiotou. "The Use of Artificial Intelligence in the Administration of Justice: Suggested Framework of Ethical Principles and Reasoning of Judges in the Use of Intelligent Systems." *Laws 2026, Vol. 15, Page 20* 15, no. 2 (2026): 20. https://doi.org/10.3390/LAWS15020020.

Mark, David J., Tomás McInerney, and John Morison. "Regulating Automated Decision-Making in the Justice System: What Is the Problem?" In *Edward Elgar Publishing eBooks*. Edward Elgar Publishing, 2024. https://doi.org/10.4337/9781803922171.00034.

Maskanah, Ummi. "Artificial Intelligence in Civil Justice: Comparative Legal Analysis and Practical Frameworks for Indonesia." *Jambura Law Review* 7, no. 1 (2025): 225–42. https://doi.org/10.33756/jlr.v7i1.27786.

Murodova, Sojida. "The Black Box Problem in Administering Justice: Risks of Opaque Algorithms in Legal Decision-Making." *International Journal of Law and Policy* 3, no. 6 (2025): 1–20. https://doi.org/10.59022/ijlp.331.

Olawunmi, Opeyemi Obisesan, Margaret Kareyo, Sheya Nuwagaba, Alexanda Binomugisha, and Amina Wahab. "The Incorporation of Artificial Intelligence in Legal Practice in Uganda: Prospects and Socio-Economic Issues." *Kampala International University Law Journal* 6, no. 2 (2024): 163–88. https://doi.org/10.59568/kiulj-2024-6-2-09.

Olawunmi, Opeyemi Obisesan, Margaret Kareyo, Sheya Nuwagaba, Alexanda Binomugisha, and Amina Wahab. "The Incorporation of Artificial Intelligence in Legal Practice in Uganda: Prospects and Socio-Economic Issues." *Kampala International University Law Journal* 6, no. 2 (2024): 163–88. https://doi.org/10.59568/kiulj-2024-6-2-09.

Radu, Roxana. "Steering the Governance of Artificial Intelligence: National Strategies in Perspective." *Policy and Society* 40, no. 2 (2021): 178–93. https://doi.org/10.1080/14494035.2021.1929728.

Sa'idah, Nur Hamda. "Dampak Implementasi Aplikasi E-Berpadu Terhadap Efisiensi Proses Peradilan Pidana Di Pengadilan Negeri Semarang." In *Walisongo Repository (Walisongo State Islamic University)*. Walisongo State Islamic University, 2025.

Saputra, Asbudi Dwi, Hartono Tasir Irwanto, and Nurisnah Nurisnah. "Measuring Judicial Accountability in the Algorithmic Era: Juridical Implications of Using Judicial Assistants and Black Box Risks in Constructing Judgment Arguments." *SIGn Jurnal Hukum* 7, no. 2 (2025): 958–73. https://doi.org/10.37276/sjh.v7i2.570.

Satrio, Dwi Bintang, Artaji Artaji, Efa Laela Fakhriah, and Chami Yassine. "Integrating AI into Small Claims Courts: Lessons from Global Practices for Legal Reform in Indonesia." *Journal of Law and Legal Reform* 7, no. 1 (2026): 337–76. https://doi.org/10.15294/jllr.v7i1.24028.

Singarimbun, Desi Apriguna, and Kartina Pakpahan. "Implementation of the Electronic Criminal Case File Transfer System." *YURISDIKSI Jurnal Wacana Hukum Dan Sains* 20, no. 1 (2024): 58–65. https://doi.org/10.55173/yurisdiksi.v20i1.229.

Soraya, Joice, and Zico Junius Fernando. "AI Judges and the Future Revolution of the Judicial Profession in Indonesia." *The Indonesian Journal of International Clinical Legal Education* 6, no. 3 (2024): 393–426. https://doi.org/10.15294/iccle.v6i3.15358.

Sujatmiko, Bagus, Dominikus Rato, and Bayu Dwi Anggono. "Court System Transformation; Maximizing Electronic Courts through the Implementation of Swift, Simple, and Cost Effective Principles." *Sultan Jurisprudence Jurnal Riset Ilmu Hukum* 3, no. 2 (2023): 132. https://doi.org/10.51825/sjp.v3i2.22214.

Susilo, Erwin. "Judging with Practical Wisdom in Digital Courts: Paul Ricœur's Little Ethics and the Ethical Governance of AI in the Judiciary." *Ceniiac* 2 (February 2026). https://doi.org/10.64923/ceniiac.e0011.

Taun, Taun, Imanudin Affandi, and Rahman Rahman. "Application of E-Court in Different Countries: A Comparative Study in the Development of E-Court." In *Advances in Social Science, Education and Humanities Research/Advances in Social Science, Education and Humanities Research*. 2023. https://doi.org/10.2991/978-2-38476-164-7%5C_100.

Yuniar, Vania Shafira, Jihan Syahida Sulistyanti, and Dian Latifiani. "The Court Role in Providing E-Court System Education to Community: Post-Enactment of Supreme Court Regulation Number 1 of 2019." *UNIFIKASI Jurnal Ilmu Hukum* 8, no. 1 (2021): 34–42. https://doi.org/10.25134/unifikasi.v8i1.3697.

Yusuf, Abdirizak Abdinasir, Charles Mukasa, Samuel Muyinga, Abdullahi Usman Bello, and Ronald Lukoma. "The Development and Growth of Ai in Uganda: How Is Uganda Faring from a Legal Perspective?" *Kampala International University Law Journal* 6, no. 2 (2024): 204–23. https://doi.org/10.59568/kiulj-2024-6-2-11.

Yuvaraj, Joshua. "The Verification-Value Paradox: A Normative Critique of Gen AI in Legal Practice." In *ArXiv.Org*. 2025. https://doi.org/10.48550/arxiv.2510.20109.

Zulaeha, Mulyani. "E-Courts in Indonesia: Exploring the Opportunities and Challenges for Justice and Advancement to Judicial Efficiency." *International Journal of Criminal Justice Sciences* 18, no. 1 (2023): 183–94. https://doi.org/10.5281/zenodo.4756212.

Reports/Offical Document

"ECCMIS Is Here to Stay, CJ Owiny - Dollo." Accessed August 5, 2026. https://judiciary.go.ug/data/news/1331/0/ECCMIS.

"Guide on the Use of Generative Artificial Intelligence Tools by Court Users (Registrar's Circular / Singapore Courts) - Singapore | Regulations.AI - The Site on AI Laws and Regulations | Regulations.Ai." Accessed August 5, 2026. https://regulations.ai/regulations/RAI-SG-NA-GUGAIXX-2024.

"Judicature (Electronic Filing, Service and Virtual Proceedings) Rules, 2025 – ULII." Accessed August 5, 2026. https://ulii.org/en/akn/ug/act/si/2025/21/eng@2025-03-07.

"Judiciary ICT and Documentation Committee Begins Two-Day Retreat to Shape Digital Transformation Agenda." Accessed August 5, 2026. https://judiciary.go.ug/data/news/1772/3/Judiciary%20ICT%20and%20Documentation%20Committee%20Begins%20Two-Day%20Retreat%20to%20Shape%20Digital%20Transformation%20Agenda.html.

"Judiciary's Transition to A Paperless Court System Effective June 1 – Majority Dots Connect to No Readiness – Uganda Law Society." Accessed August 5, 2026. https://uls.or.ug/judiciarys-transition-to-a-paperless-court-system-effective-june-1-majority-dots-connect-to-no-readiness/.

"Justice in the Age of AI: Indonesia's Regulatory Gap - OBSERVER - the Latest Information about Indonesian News and Social Culture." Accessed August 5, 2026. https://observerid.com/justice-in-the-age-of-ai-indonesias-regulatory-gap/.

LEON, Nydia REMOLINA. "AI in the Judiciary: The Singapore Case." In *Singapore Management University Institutional Knowledge (InK) (Singapore Management University)*. Singapore Management University, 2025. https://ink.library.smu.edu.sg/sol%5C_research/4797.

LEON, Nydia REMOLINA. "AI in the Judiciary: The Singapore Case." In *Singapore Management University Institutional Knowledge (InK) (Singapore Management University)*. Singapore Management University, August 2025. https://ink.library.smu.edu.sg/sol_research/4797.

Internet

"Media Release: New Generative AI-Powered Case Summarisation Tool to Help Small Claims Tribunals Users." Accessed August 5, 2026. https://www.judiciary.gov.sg/news-and-resources/news/news-details/media-release--new-generative-ai-powered-case-summarisation-tool-to-help-small-claims-tribunals-users.

"Singapore Courts Rolls out New AI Tool to Help Support, Summarise Small Claims Tribunals Cases | The Straits Times." Accessed August 5, 2026. https://www.straitstimes.com/singapore/singapore-courts-rolls-out-new-ai-tool-to-help-support-summarise-small-claims-tribunals-cases.