

ALGORITHMIC TRANSFORMATION IN THE JUDICIARY: THE CALL FOR A JUDICIAL AI ACT IN PAKISTAN

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Abstract

Artificial intelligence is an unstoppable and widely recognized global trend driving revolutionary changes in almost all fields of life, including the judicial system worldwide. This study neither buys into AI hype nor relies on fictional grounds for its potential; it strictly counts on the factual potential in Pakistan's judicial system. This study uses the current statutory frameworks to identify the inevitable need for a separate legislative framework for AI use within the judiciary. The main objective of this research is to show that, amid AI-driven efficiency, the rigid colonial-era laws and case backlogs can be overcome in Pakistan's judiciary. Through AI's extensive access to jurisprudence, it is now mandatory for Pakistan to eliminate traditional systemic errors that are dragging it away from the path of justice. It also examines constitutional concerns regarding the legal role of AI as an assistive tool, not decisive, in full compliance with current legal requirements. Data are generated through doctrinal and comparative analysis. It examines international collaboration on technology and AI utilization with various countries and Pakistan's growth in the context of vast international frameworks, including the UNESCO Guidelines and the EU AI ACT 2024. It also draws a comparative analysis with several countries worldwide to develop an effective action plan for Pakistan's judicial system. This study's analysis revealed areas for improvement in addressing AI drawbacks within the judiciary, such as liability void, the 'Black box' paradox, algorithmic bias, legal concerns about data sovereignty, hallucination, reliability limitations, and AI contextual blindness to navigate customs and norms. Following previous concerns, this paper endorses the assistive role of AI, the critical need for a human centered approach, and a digital literacy mandate. To address these risks, this paper's findings suggest that a judicial AI council should present a centralized legislative framework for responsible AI deployment and maximize the rule of law in the judiciary.

INTRODUCTION

Since Pakistan was a colony of the British Empire, it has been using that rigid and closed-

ended legislation (Soomro & Soomro, 2023). Similarly, the persistent enforcement of those colonial standards has led to an escalation of the

judicial crisis (Arain, 2025). Pakistan's judicial system has ineffective capacity building, including manual case management and data registration; for instance, repeated visits by litigants to the district courts for attested copies from the record room (Kassar et al., 2024). In Pakistan, another major roadblock to speedy trials in the judiciary is the legal complexity of statutory laws. In that spirit, heavy case backlogs require comprehensive reviews for interpretation (Rubab et al., 2019). Moreover, the limited number of judges serving in lower courts requires extensive time and consideration, resulting in lengthy trials (Ali & Alam, 2021). Furthermore, frequent adjournments have also become a trend in the daily practice, which is also bound by legislative requirements (Code of Civil Procedure, 1908). In many cases, the delay is caused by untrained judges and unprofessional lawyers (R. U. Shah & Ahmad, 2016). Although countries worldwide are working to ensure equal justice for all by 2030 as part of their commitment to the SDGs, case backlogs still exist in Pakistan (Goal 16 | Department of Economic and Social Affairs, n.d.). These systemic challenges paved the way for technological transformation in the judiciary. Along with the technological revolution of the 21st century, artificial intelligence (AI) is no longer a fictional or extraordinary concept for people around the world. In fact, it is widely accepted and has proven to be a productive and facilitative tool, minimizing skepticism and opening new prospects across various fields (Zai, 2024). For instance, a knowledge based AI system may detect minor details such as contradictions in text interpretation that individuals may miss under heavy workloads (De Marneffe et al., 2008). Due to the cognitive bottleneck of human beings, AI's assistive role is especially useful in such protracted cases. Therefore, machines have greater acumen for tackling complex tasks than ordinary people, making them useful for routine casework and less time-consuming. AI has become the need of the hour because it can modify loopholes and traditional tactics in the judicial system (Susskind & Susskind, 2018).

Meanwhile, AI has already been utilized by judges in the courts without any evident legal safeguards (*Muhammad Iqbal v. Zayad*, 2023). Therefore, the Senate proposed the Regulation of AI Bill, 2024, which aims to establish a commission and a national framework for the enforcement and governance of AI applications throughout Pakistan. Ultimately, this bill is currently under review by the Senate (The Regulation of Artificial Intelligence Bill, 2024). To fill this gap, the National Guidelines for Use of Artificial Intelligence in Judicial Institutions of Pakistan (NJPMC), 2026, approved by the National Judicial (Policy Making) Committee, ensure that all high courts in Pakistan strictly comply with the rules governing the use of AI while allowing for local differences (National Judicial (Policy Making) Committee, 2026). However, these significant initiatives do not address the major ethical and legal concerns raised by the integration of AI in the judiciary. Following the context, this research explores how Pakistan should decide to utilize AI in the judiciary, not how AI dictates to judges, which is primarily within our control. Furthermore, a major question this study clarifies is 'why there's an inevitable need for an AI-related legislative framework and what ethical and legal precautions must be mentioned in it? Moreover, this research critically analyzes whether artificial intelligence has been inadequate in guaranteeing constitutional conformity or does it act as a barrier?' Moreover, another question this paper raises is: why is the existing legal framework not sufficient for AI deployment in the judiciary?

This research employs a doctrinal and comparative legal analysis. The comparative analysis between Pakistan and various countries worldwide points to the digital transformation of the judiciary through AI integration. It is mainly based on a thorough review of the relevant literature, including a qualitative examination of primary legal sources and international instruments for prudent AI deployment in the judiciary. It is doctrinal in character and does not gather empirical or quantitative data; rather it examines secondary literature, case law and policy papers and

represents promising future research opportunities.

Judicial AI: Concept and Models

This study clarifies the widely spread ambiguities and doubts associated with AI deployment in the judiciary. Judicial AI should be described and distinguished by its use rather than by its technology. Therefore, this study has reviewed several AI regulatory models. Including administrative AI, Research AI, adjudicative support AI and, last but not least autonomous decision systems. Firstly, administrative AI may include court-based procedural tasks and has the potential to curtail the rate of manual errors for technical development within the judiciary. Furthermore, AI in judicial administrative tasks may improve access to justice by reducing case backlogs and speeding up case resolution by fostering consistency in case outcomes (Parycek et al., 2023). Additionally, the streamlined filing processes using AI powered portals may assist self-represented litigants in navigating legal procedures.

Similarly, AI powered translation systems in courts provide accurate, real-time communication across language borders, allowing citizens to actively participate in judicial proceedings (Kumar, 2024). AI based systems, especially generative AI can produce enhanced legal writing with refined structure, grammar, syntax and composition. Platforms for editing and citation verification such as BriefCatch, WordRake, PerfectIt, ClearBrief and ChatGPT are widely utilized by legal actors to draft contracts and other legal documents (Ishfaq Ahmed v. Mushtaq Ahmed, 2025). By reducing the court workload and handling more complex legal matters, automation can help minimize this risk by decreasing the administrative burden of processing the case files and scheduling dates (Varghese, 2024). These systems may translate both verbal and textual exchanges, such as case studies, to ensure that all parties have equitable access to the case data. While potential errors, such as misconstrued phrases, are comparable to those made by human translators, an AI system with human supervision can also eliminate them (Sabra, 2026). This AI legal drafting language

model may also initially draft the document and then keep a human in the loop to ensure accountability in case the output needs to be modified (Harvey, 2026).

Secondly, another significant aspect is the use of AI research tools, which have been widely adopted across the global judicial system. Including Natural Language Processing (NLP) to understand human language, Machine Learning (ML) to identify hidden patterns and large scale data analytics to process massive volumes of complex data, Qanoon AI and Judge-GPT enable semantic research across the whole legal corpus within seconds. Additionally, these tools may increase the efficiency and precision of legal procedures, proving their ability to significantly simplify legal operations (Ejjami, 2024). This AI approach yields inclusive insights for the effective processing of vast amounts of data within a fraction of the time and may assist judges, litigants, and court clerks in extracting relevant case law, commentaries, scholarly writings, legal principles and extensive research with greater accuracy (Williamson, 2025). Similarly, incorporating such AI technologies into legal processes allows them to change traditional legal procedures while upholding or augmenting legal practice norms. For instance, these tools yield sentencing statistics for the corresponding offenses and also include information about the nature of the charge and the accused person (Bell et al., 2023). On the counterclaim, it can manipulate case conclusions, and minimizing this threat to research validity requires safeguards under human supervision before its adoption (Qassimi, 2023).

Thirdly, the application of adjudicative support AI for judges may directly influence decision-making by assisting with relevant legal precedents for case facts. It unavoidably raises questions for judicial reasoning and judicial virtue regarding the normative role of judges (Widłak, 2025). EU AI Act also highlights that the risk of such an AI approach must neither be intended to assist with factual inquiry and interpretation nor to apply the law to a specific set of facts in the ruling of particular cases (*Administration of Justice and Democratic Processes* |

AI Act Service Desk, n.d.). Lastly, most high-risk and damaging AI tools within the judicial system are autonomous decision systems that involve independent rulings made through algorithms (Skulimowski et al., 2023). Complex decisions demanding high transparency must be entrusted to human judges. Case in point, autonomous judicial systems raise significant ethical concerns about judges' integrity, institutional judgment,

and the legal order as a whole (Ivanov, 2023). This paper strictly prohibits the use of such highly controversial AI models within the judiciary of Pakistan. Furthermore, it is notwithstanding the standards set by the EU AI Act guidelines for the use of AI, which is considered high-risk when AI performs beyond the improvement of procedural tasks (Regulation (EU) 2024/1689 (Artificial Intelligence Act), 2024a).

Table 1: A Typology of Judicial AI Models

Judicial AI Model	Human Involvement	Degree of Automation	EU AI Act Support	Threat Hierarchy
Administrative AI	High - involves AI clerical tasks within the judiciary.	Low - restrained.	Fully endorsed by the AI EU Act.	Low
Research AI	High – use as basic materials for impartial human evaluations.	Low - Moderate.	Partially backed by this Act.	Low - Restrained
Adjudicative Support AI	High – in case of humans in-the-loop. Low- in case of humans out-of-the-loop.	High – Moderate.	No – this tool is categorized as high-risk.	High in complex decisions.
Autonomous Decision Systems	Low – Absent	Very High	No – strictly prohibited.	Critically high in all circumstances.

The EU AI Act validates the general categorization of all these kinds of judicial AI models along the threat hierarchy presented in this table (Regulation (EU) 2024/1689 (Artificial Intelligence Act), 2024). Consequently, through this evolution, only Administrative and research AI tools can be utilized as assistive tools for the judges and litigants as initial steps towards technological reforms within the courts of Pakistan. These AI technologies do not alleviate any critical concerns. However, adjudicative support AI functions as a substitutive, not an assistive tool and is directly involved in judicial reasoning to uphold the procedural safeguards. The

expeditious justice mandate provided under Article 37(d) of the Constitution can be actualized through the potential use of AI by the judiciary (Constitution of the Islamic Republic of Pakistan, 1973, art. 37(d)). The deployment of an assistive AI system in the judicial system can enhance the judicial process and efficiency while keeping the human judge as an essential part of that system (Varghese, 2024).

Global Trend of Judicial AI

For governing AI in justice systems, international instruments have progressively laid down the normative framework, marking a shift from international ethical guidelines towards

binding regional regulations. Pakistan is obligated under the Article 14 of International Covenant on Civil and Political Rights (ICCPR)(Malik & Inam, 2024) to ensure fairness and transparency if it employs the assistance of AI in decision-making (Ishfaq Ahmed v. Mushtaq Ahmed, 2025). This commitment arguably anticipates regulation to use AI in the judiciary.

As a UNESCO member state, Pakistan is guided by the “Recommendation on the Ethics of AI” (2021) to establish AI-related laws and policies. It also emphasizes safeguards for the deployment and use of AI in the judiciary (Recommendation on the Ethics of Artificial Intelligence, 2022). Translating the Recommendation into practice, UNESCO’s Judges’ Initiative introduced the Global Toolkit on AI and Rule of Law for the Judiciary (2023), guiding judicial actors for responsible use of AI (Stankovich et al., 2023) and training 11000 judicial actors since its launch (UNESCO’s *AI and the Rule of Law Toolkit Transforms Legal Education Worldwide*, 2025). Notably, Pakistan’s judicial officials also participated in the UNESCO-UNDP Workshop on AI and Rule of Law (2025) for regional training held in Bangkok (AI and the Rule of Law, 2025). Subsequently, UNESCO introduced “Guidelines for the Use of AI Systems in Courts and Tribunals” (2025), framing AI to support justice, rather than replace judicial reasoning (Gutiérrez, 2025).

Apart from international instruments governing AI, regional bodies have also developed instruments in response to the advancing use of AI in the judiciary. To begin with, the European Commission for the Efficiency of Justice (CEPEJ) adopted the European Ethical Charter on the Use of AI in judicial systems and their environment in 2018 (Council of Europe, European Commission for the Efficiency of Justice [CEPEJ], n.d.), offering early guidance to legislators and judicial actors for the use of AI in domestic judicial processes (Oberto, 2024). To reinforce this, the CEPEJ AI Advisory Body (AIAB) was formed in 2022 to give expert advice on AI-related issues in the judiciary and to ensure follow-up on the Ethical Charter (CEPEJ, n.d.). In addition, for implementing the

principles of the Ethical Charter, CEPEJ launched an Assessment Tool in 2023 (Oberto, 2024).

The shift from ethics to enforcement is evidenced by the first internationally binding instrument on AI, i.e., the Council of Europe Framework Convention on AI and Human Rights, Democracy and the Rule of Law (2024), binding the parties to ensure that AI systems support access to justice and independence of the judiciary (Council of Europe, 2024). In parallel, the European Union (EU) sets a global benchmark by introducing its EU AI Act, 2024, mandating that AI systems used to assist judges in the administration of justice are placed under the high-risk category (Regulation (EU) 2024/1689 (Artificial Intelligence Act), 2024), with the requirement of complete documentation, high-quality training and full transparency (Bird & Bird, 2026). The European shift reflects the evolving trend from mere guidelines towards binding legislation.

Outside Europe, in the United States, the case of Loomis (*State v. Loomis*, 2016) shows risks of judicial AI in absence of overarching legislation. The judgement upholds the use of the AI tool and rejects that it violated the defendant’s rights. However, at the same time, the court restricted judges from treating the tool as the sole basis for sentencing. This incident reinforces the urgency of a comprehensive regulatory framework for judicial AI to protect rights of individuals (Minhas, 2025).

These instruments collectively illustrate an evolution in the governance of AI. Taken together, the European regulatory shift and American controversial case reflect that without adequate regulation of judicial AI, rights are exposed to violation. This reveals Pakistan’s current position of lacking its legislation and suspended in a regulatory vacuum.

Comparative Analysis of Regulating Judicial AI

This section analyzes the regulatory landscape of AI with respect to legal force, institutional regulation, risk-classification and oversight mechanisms in the judicial systems of China, Brazil and India. It draws on this analysis and

assess the lessons for judicial AI regulation in Pakistan.

First, it reveals that each jurisdiction has general ethical principles to govern the use of judicial AI. What distinguishes these jurisdictions is the legal force behind the general principles. Supreme People's Court (SPC) of China's Opinions focus on deep AI integration along with General Principles involving fairness, transparency and ethical risks. However, they are non-binding (*China | AI Deeply Embedded in Criminal Justice System*, n.d.), and create a gap between principle and practice, evidenced by the operation of the 206 system with its opaque algorithms (G. Shah et al., 2025). Brazil's Resolution with binding legal authority, aims for judicial efficiency through transparent and ethical use of AI, without compromising fundamental rights (Depieri et al., n.d.). Although not in force yet, India's Draft provides comprehensive general principles ranging from prior to post-deployment ensuring human primacy, rule of law and data protection (Manisha Singh & Shivi Gupta, 2026). Pakistan's position mirrors China, serving as a caution, as the Guidelines 2026 has no binding force to ensure compliance and merely outline the guiding principles (National Judicial (Policy Making) Committee, 2026). Thus, the binding nature of Brazil's Resolution and comprehensiveness of India's Draft together serve as a lesson for Pakistan.

Secondly, all three jurisdictions have dedicated institutional bodies with varying mandates for judicial AI. China's Judicial AI Ethics Council, limited to mitigating cybersecurity risks in AI applications has the narrowest scope (The Opinions on Regulating and Strengthening the Applications of Artificial Intelligence in the Judicial Fields, 2022). By contrast, Brazil's NCAIJ (Oliveira, & Catarina de Figueiredo Ramos, 2026) and India's proposed Apex Body (Draft Regulations for Use of Artificial Intelligence in Courts., 2026) hold a broader mandate involving periodic re-evaluation and audits of AI systems for effective implementation. However, Pakistan lacks any institutional body dedicated for regulating AI in the judiciary. This highlights that Pakistan must

fill this institutional gap and clearly specify the body's mandate, as it moves towards the greater adoption of judicial AI.

Thirdly, a contrast appears among jurisdictions with respect to classification of AI uses. While Pakistan's Guidelines 2026 mention permissible uses of AI (*Pakistan Issues National Guidelines for Use of AI in Judiciary*, n.d.), it fails to draw any clear prohibition on uses of AI systems that would violate fundamental principles of justice. China similarly provides no such distinction and mainly focuses on AI integration in the judiciary (The Opinions on Regulating and Strengthening the Applications of Artificial Intelligence in the Judicial Fields, 2022). Brazil's Resolution, by contrast, necessitates the categorization of AI solutions as high or low risk and prohibits those that do not involve human review (Campos et al., 2026). Similarly, India's proposed Draft clearly draws the boundary between permissible and prohibited uses of AI systems, to protect judicial independence and human intervention (Manisha Singh & Shivi Gupta, 2026). It can be construed that, without such a distinction, the line between assistive and adjudicative AI may become blurred. Therefore, Pakistan needs to explicitly classify AI uses, rather than leaving the prohibited uses implicit. Another critical point is the presence of an oversight mechanism for the practical translation of the provisions. SPC of China's Opinions provide for examination and evaluation of AI systems but remain silent on the mechanism for such evaluation (The Opinions on Regulating and Strengthening the Applications of Artificial Intelligence in the Judicial Fields, 2022). Conversely, Brazil's Resolution mandates the NCAIJ for auditing and ensuring periodic re-evaluations of AI solutions (Depieri et al., n.d.). Likewise, India's Draft provides a detailed mechanism for oversight, audit and assessment of AI systems for compliance with the Draft's provisions (Manisha Singh & Shivi Gupta, 2026). The absence of any such mechanism in Pakistan's Guidelines 2026 (National Judicial (Policy Making) Committee, 2026) provides the lesson for Pakistan that any future legislative instrument regulating judicial

AI must provide an oversight mechanism to ensure practical implementation.

Pakistan's position in respect of regulation and governance falls short of the standards revealed by this comparison, with its Guidelines (2026) remaining ethical guidelines with no enforcement or assessment mechanism and no legislation currently underway. If Pakistan's position persists, unregulated judicial AI may

outweigh its benefits. Nevertheless, risks related to judicial AI ought to be regulated by law, the supreme regulator (Elena & Viktor, 2024). Such regulations need clear provisions on pre- and post-assessment of AI systems. Therefore, a dedicated legislative framework to secure enforceable safeguards for judicial AI in Pakistan, rather than guidelines alone, is crucial.

Table 2: Comparative Analysis

Jurisdiction	Legal Instrument	Nature / Legal Force	Scope of Legal Instrument	Institutional Regulation	Risk-based Classification	Oversight Mechanism
China	"The Opinions on Regulating and Strengthening the Application of AI in Judicial Fields (2022)" (Opinions)	Non-Binding	General Ethical Principles and AI Applications	Judicial AI Ethics Council	Absent	Review/ Evaluation (no defined mechanism)
Brazil	CNJ Resolution No. 615/2025 (revoking CNJ Resolution No. 332/2020) (Resolution)	Binding	Development, Use and Governance of Judicial AI	National Committee on AI in the Judiciary (NCAIJ)	Present	Audits and periodic re-evaluations
India	Draft Regulations for Use of AI in Courts, 2026 (Draft)	Not in force yet	To govern AI in courts, with general ethical principles and institutional framework	Apex Body	Present	Assessment of AI Tools, AI Register, Audits, Transparency Reports
Pakistan	National Guidelines for the Use of AI in Judicial Institutions of Pakistan (Guidelines 2026)	Non-binding, advisory	Guiding Principles of AI Use in Courts	Absent	Absent	Absent

Constitutional Anchors: A barrier or a shield?

The advancement towards the AI-automated era and for daily work reliance on technology by judicial bodies raise a serious concern about the position of such deployment in our constitution: Can the Constitutional framework of Pakistan obstruct this transformation or merely channel it? The comprehensive judicial interpretation confirms that constitutional anchors function as a bulwark, which set out boundaries for the ethical use of AI, rather than acting as a judicial barrier to this transformation (*Ishfaq Ahmed v. Mushtaq Ahmed*, 2025). This section traces that boundary for constitutional threads as institutional limits on delegating judicial powers to automated tools, the guarantee of equal treatment by scrutinizing the AI generated outputs, the fair trial guarantees must not be compromised by algorithmic assistance and the protection of life, liberty and dignity against the opaque systems.

5.1 Judicial Integrity and AI Delegation

Article 175 of the Constitution of Pakistan, hold that all judicial power of the state is vested in the courts established under the Constitution (Constitution of the Islamic Republic of Pakistan, 1973, art.175). It means that technology can only extend to judicial capacity without altering its original constitutional character. This mandate restricts the substitutive role of AI but leaves an ample room for its assistive position. This legal boundary is strengthened by the ruling of *Mehram Ali* case, which categorically restricts the creation of any parallel adjudicatory framework that bypasses or attempts to share the judicial power (*Mehram Ali v. Federation of Pakistan*, 1998). Further, Article 4 of the Constitution reinforced this textual demand, which guarantees that no action regarding a person's life, liberty, body, reputation, or property shall be taken except in accordance with law (Constitution of the Islamic Republic of Pakistan, 1973, Article 4). This presupposes that any such action must originate from an identifiable decision-maker who can be traced and held accountable for the decision. An autonomous system, lacking legal personality and not having the capacity to bear

responsibility, can't itself satisfy this constitutional threshold. Together, Article 175 and Article 4 establish that judicial power must remain vested in and exercised by an authority who is constitutionally recognized and identifiable. However, Constitution does not prohibit the judicial deployment of AI tools so long as they operate within the institutional structure of the court while remaining subordinate to the authority of a constitutionally empowered judge. The locus of decision-making is undisturbed in the current system and human empathy, moral consideration and sensitive understanding of societal realities are essential to judicial decision-making. The courts are moral spaces for the reaffirmation of what the law implies and thus the machines cannot be a *de facto* substitute (Sohail, S. 2025).

5.2 AI Biasness and the Guarantee of Equal Treatment

The underlying data used to train AI models can also be influenced by societal and institutional biases, which may result in discriminatory decisions, especially in the context of bail and sentencing (Baig, 2025). This partiality may undermine the standards of a fair trial under Article 10A and equal protection of the law under Article 25 of the Constitution (Constitution of the Islamic Republic of Pakistan, 1973, art. 25).

7.3 Fair Trial and Inherent Opacity of AI

Beyond this structural limitation, the constitutional bulwark is also reinforced by the threshold imposed under Articles 10A and 14, that must be clear before introducing any new technology or tool to the courtrooms. It was laid down by the court in the *Qazi Faez Isa* case that technology is merely an aiding tool and must be represented as a 'servant, not the master' (*Justice Qazi Faez Isa v. President of Pakistan*, 2023). Moreover, it was clearly emphasized in this case that the substantive guarantee under 10A, the right to a fair trial and due process, is the core of the rule of law. The principles of reasoned decision, equality of arms, and *audi alteram partem* are central to this fair trial right, which is extended by due process as its companion principle. The outcome of fully AI-based models

is opaque and undermines these central principles (Mizaras et al., 2025). These systems, due to their 'black-box' concerns, cannot comply with these standards because of their lack of a way to contest or review the decision (Garrett, 2025). This concern is not merely theoretical but it exists in the real world. The Wisconsin SC upheld a trial court's reliance on a proprietary algorithmic risk-assessment tool named as COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) in sentencing, even though its primary methodology was disclosed to neither the court nor the defendant, leaving him unable to contest the basis of the score used against him. Regardless of the fact that the court acknowledged the opacity as a genuine concern, it addressed this issue by mandating "written advisement," and explaining that such a report would not be the sole basis for a decision (*State v. Loomis*, 2016). The case reflects that a mere warning cannot fix the due process deficit created by an opaque AI system ("State v. Loomis: Wisconsin Supreme Court Requires Warning Before Use of Algorithmic Risk Assessments in Sentencing," 2017).

7.4 Life, Liberty and Dignity under the Shadow of Automated Decisions

Further, in the criminal justice system, especially in bail and sentencing cases, these concerns extend to the ambit of Article 9's protection of life and liberty, where opacity is intolerable. As affirmed by the court in the *Shehla Zia* case, Article 9 must be interpreted broadly to safeguard life and liberty through fair and lawful state action (*Shehla Zia and Others v. WAPDA*, 1994). However, this does not mean a total constitutional bar but with the preservation of these substantive rights, assisted AI systems are constitutionally allowed.

Beyond safeguarding life and liberty in high-stakes outcomes, this constitutional shield also extends to the individual's dignity and privacy in the process itself. Where Article 10A is concerned with the integrity of the process, and Article 9 with life, on the other hand, Article 14 is about the integrity of the person subjected to it (Constitution of the Islamic Republic of

Pakistan, 1973, Article 9,14). As reaffirmed in the *Shehla Zia* case, Article 14, preserving the dignity of man and privacy, is unparalleled and is uncommon in the Constitutions around the world (*Shehla Zia and Others v. WAPDA*, 1994). In the *Benazir Bhutto* case, the court provided the expansive reach of Article 14, clarifying that it extends to all places and contexts where a person reasonably presumes to be protected from invasion (*Benazir Bhutto v. President of Pakistan*, 1998). When a litigant discloses any information or any record or personal history during proceedings before the court, it retains an inviolable expectation that this data will not be used without lawful authority and independent oversight. Thus, this establishes the mandate that there must be accountability and that accountability must be ensured through the oversight of a human judge.

6. Why Pakistan Needs a Judicial AI Act?

The Constitution moderates AI's role by establishing boundaries but does not itself regulate its use. The statutory and procedural framework is also equally inadequate for actual AI deployment.

6.1 The Undefined Position of AI

Article 260 of the Constitution confines judicial authority to a person acting as a judge of the court (Constitution of the Islamic Republic of Pakistan, 1973, art. 260). However, Section 19 of the Pakistan Penal Code, 1860 (PPC) defines it by denoting the judge not only as every person officially designated to this, but also every individual empowered by law to give a judgment in any civil or criminal proceeding (Pakistan Penal Code, 1860, § 19). Moreover, under Section 20 of the PPC, the Court of Justice is devoted to a judge who is empowered by law to act judicially as a body, and also refers to a body of judges that is acting judicially under law (Pakistan Penal Code, 1860, § 20). Whereas, Section 367 CrPC directs that every judgment shall be written by the presiding officer or from the dictation of such a presiding officer and shall be signed and pronounced by him in the open court (Code of Criminal Procedure, 1898, Article 367). All these statutory texts do not

present the human reasoning element as a formality, but they require it as an essential standard to ensure legal accountability that a machine can't meet. It means that AI cannot fit itself into the ambit of established definitions and thus it requires an express position.

6.2 The Silence about value of AI Generated Outputs

Article 164 of Qanun-e-Shahadat Order, 1984 ("QSO") permits the courts to admit evidence that has been produced by modern devices (Qanun-e-Shahadat Order, 1984, Article 164). This provision is a gateway to introduce modern forensic science into the courtroom (*Ali Haider alias Papu v. Jameel Hussain*, 2021). But this provision does not address the AI shaping the reasoning that follows from the underlying material evidence. There is no provision in the QSO that deals with the limitations, reliability, validation and accuracy of such evidence that uses AI for reasoning. Further, a more overlooked gap lies in Article 59, which recognizes the opinion of experts with human contemplation (Qanun-e-Shahadat Order, 1984, Article 59). Where an AI itself generates an analytical output such as an assessment relating evidence or a forensic pattern-match, the statute is silent about its admissibility and does not clarify whether that output stands alone as an expert opinion or whether it requires a human expert to independently verify and testify to its reliability (S. M. N. A. Shah & Ahmed, 2026).

At the procedural level, the Code of Civil Procedure (1908) presents a parallel silence. Its adjournment provisions under Order XVII were designed for a manual, paper-based system; thus, they have long been exploited to sustain unnecessary delays (Code of Civil Procedure, 1908). Yet they contain no single mechanism to accommodate AI-assisted procedural work like case prioritizing or scheduling. Such a gap is not unique to Pakistan. In a relevant Australian case, the court had to devise a Technology-Assisted Review order precisely as the existing civil procedure rules were inadequate to govern AI-based document review (*McConnell Dowell Constructors (Aust) Pty Ltd v Santam Ltd & Ors* (No 1), 2016). Mutually, these provisions address AI

only incidentally, leaving courts to extend the statutory text by analogy rather than apply it coherently and specifically.

6.3 The Absence of any Binding Regulation

Despite the fact that Pakistan has an instruments which address AI in the judiciary, such as the National Guidelines (National Judicial (Policy Making) Committee, 2026) and also possesses a pending Personal Data Protection Bill (Personal Data Protection Bill, 2023) but none of these carries the force of a statute. The Personal Data Protection Bill has not been enacted, leaving the judicial data processed by AI systems, including the sensitive litigants' records without any statutory safeguard. The National Guidelines for Use of AI in Judicial Institutions (2026) marks the first attempt to directly address AI deployment in Courts, but it neither prescribes an enforceable sanction for non-compliance.

Further, this gap has been extends to bar also as the Legal Practitioners and Bar Councils Act, 1973 and the Pakistan Bar Council's professional conduct rules impose no obligation on lawyers to disclose their use of AI tools in drafting, research, or case preparation (University of Oxford, Blavatnik School of Government, 2026). Pakistan has no act that regulates judicial AI deployment and leaves a regulatory gap on both sides of the bench as judges are addressed by non-binding guidelines, while lawyers are addressed by nothing at all.

Implementation Barriers and Algorithmic Risks

7.1 Digital Literacy Deficit

In Pakistan, digital literacy remains a significant obstacle to the algorithmic transformation. AI integration and deployment need a basic level of digital competence among legal actors, i.e., judges, lawyers, and court staff. As per a survey, Pakistan's literacy rate was 60 per cent, meaning that over 100 million people are illiterate (Dr Javaid Laghari, n.d.). Further, digital illiteracy intensified this human infrastructural deficit more severely. As of 2025, Pakistan had the 2nd largest offline population, around 139 million people (Namase, 2026). This problem also extends into the legal profession itself. A study-

based survey, that investigates the digital competency of Lahore HC bar members found that lawyers in Pakistan generally enter practice with legal knowledge but limited digital competency (Jamil et al., 2018). The problem is not confined to humans only, but it is also geographical dilemma. In rural areas, specifically backward areas of KPK, Balochistan, and most parts of Sindh, there are profound issues of connectivity and network quality. In such a case, the AI integration will cause an imbalance when these issues are retained; it will be proven more beneficial to urban areas only.

7.2 Institutional and Professional Resistance

The algorithmic revolution in the judiciary often faces elusive resistance from the institution it seeks to change. It might be due to their skeptical approach or hesitation towards the replacement of the old manual paper-based workflow. The judges often resist AI due to 'black box' concerns relating to the output, because these can undermine the principles of justice. Further, the courts are reluctant to the algorithmic implementation due to financial and capacity barriers (G. Shah et al., 2025). The lawyers resist AI due to the unemployment anxieties, technological skills deficit, and old adversarial culture that focuses more on procedures and formalities. This resistance can clearly be visible through the debate triggered by a judgment given by Judge Amir Munir (*Muhammad Iqbal v. Zayad*, 2023), when a judge revealed the use of AI in adjudging the case. Furthermore, there is also a lacuna in our legal education as there is no express AI related course leaving the deficit in preparing legal minds for futuristic algorithmic transformation.

7.3 The Accountability Void

The major unanswered question left by AI deployment is about the responsibility of decisions. The word accountability has deep rooted meaning in the administration of justice, particularly regarding fairness and transparency. The algorithmic transformation presents an unaddressed concern: Who will be held liable if an error occurs that leads to wrongful conviction or output? because the machine can't possess

mens rea and cannot be held liable as a distinct legal entity. Thus, there's a dispersal of blame that is spread across multiple parties: the developer of the system who programmed the source code, the institutional body that procures it, and the judge who used the automated results (Farid & Ghazanfar, 2025).

7.4 The 'Black-Box' Paradox and Algorithmic Biases

The AI models tend to operate on the black box paradox where they generate output without explaining the logic behind it (Varghese, 2024). Even it is challenging for lawyers, judges and experts to brief the internal workings of AI models that has been used to reach a decision (Buckland, 2023). This enigma eventually results in algorithmic opacity that can threaten the transparency and public trust in the judicial system. The algorithmic biases and hallucinations raise limitations on the reliability of AI-produced results. As, AI operates based on the data provided to it (Baig, 2025). Therefore, it is an imperative requirement that the data on which AI is being designed is totally unbiased (Burfat, 2023). The fabrication of output obtained through a 'pattern-matching' process rather than internal factual working is considered as hallucination in its ordinary sense (*Ishfaq Ahmed v. Mushtaq Ahmed*, 2025). The AI based models can create ghost citations and legal doctrines that could result in errors and raise due process issues by compromising accuracy.

7.5 Contextual Blindness of Machine

Another gap lies in navigating the contextual blindness in customs and norms of society. AI discovers patterns in past data and applies them to novel scenarios. It cannot understand the societal norms and the living texture of society. The customs and norms constitute part of the law and are important factors to take into account when administering the judgment. In Pakistan, there are certain set of religious values, customary principles and norms which are deeply rooted in the social fabric and are applied in dispute settlement also, particularly at the district and family court levels. The practical application can be observed in dowry-related

matters as in the case of *Shafique Sultan v. Mst Asim Firdous* the Court has explicitly recognized the concept of customary articles of dowry, which are deeply entrenched within our society, and decreed that the recovery of the same could proceed where there is credible evidence in accordance with the customary rules (*Shafique Sultan v. Mst. Asim Firdous*, 2017).

7.6 Data Sovereignty Concerns

Data protection issues with the use of AI tools were a major concern, and this concern is now a reality in cases where there is a heavy reliance on third-party based systems (Hashmi, 2025). AI platforms involve the processing of massive amounts of legal records, confidential litigation data, and citizen-sensitive information, leading to confidentiality concerns (Williamson, 2025).

Recommendations

First and foremost, AI transformation in the judiciary, being a step towards an augmented justice system, requires a dedicated legislative framework. A legislative intervention aligned with international and national legal frameworks, particularly the constitution, is imperative. Primarily, it must incorporate general ethical principles involving transparency, non-discrimination, explainability and human primacy, to reinforce the constitutional guarantees (Constitution of the Islamic Republic of Pakistan, 1973, Articles 14, 10A, 25, 175.). Moreover, the most critical boundary between assistive and decisive AI in the judiciary must be drawn through risk-tiered distribution of AI systems to prohibit, limit and permit their use based on the task-risk level. Supreme Court of Pakistan's caution to judges, reflect this boundary that AI must be utilized as "an assistive tool" instead of a decision-maker (*Ishfaq Ahmed v. Mushtaq Ahmed*, 2025), also incorporated in the Guidelines (National Judicial (Policy Making) Committee, 2026). Thus, AI as an adjudicator must be prohibited. Therefore, efficient and expeditious implementation of the Guidelines through binding legislation can ensure this outcome. Most importantly, for independent institutional regulation the legislation must establish a body

like the Judicial AI Council. Because institutional responsibility is essential, creating an oversight body to monitor, approve and audit judicial AI tools is needed. This body should be created under the Law and Justice Commission of Pakistan (LJCP) and function to ensure compliance, maintenance and certification of AI systems, auditing, annual reporting, capacity building and finance management.

This body should also be responsible for digital literacy as a core judicial competency, for judicial independence is meaningless if judges cannot question the tools that influence their decisions. For this purpose, literacy must go beyond basic computer knowledge and include AI training, ethical oversight and data interpretation. Federal and Provincial Judicial Academies should be upgraded to include compulsory AI training covering the use of AI systems and the identification of biases and AI hallucinations. Before judicial actors use AI systems, "AI awareness and AI literacy" must be ensured (UNESCO's *AI and the Rule of Law Toolkit Transforms Legal Education Worldwide*, 2025). Moreover, AI literacy among judicial and legal actors can help overcome bench-bar resistance to the algorithmic transformation of Pakistan's judicial system.

Furthermore, in addressing the concern of local data protection, indigenous development of AI systems is necessary. The pending Bill (Personal Data Protection Bill, 2023), if enacted with provisions safeguarding court records, would provide statutory protection for local data. As court records contain confidential data of citizens, such data cannot be fed into commercial AI platforms. In this regard, the principles of data minimization (using only strictly necessary information) and data anonymization (altering or excluding personal information) should be applied prior to deploying and using any judicial AI system. Therefore, full encryption, access controls and compliance with data protection laws in locally developed judicial AI systems, are mandatory. A locally based LLM in collaboration with the judiciary should be developed, while judges keep oversight during its design and training

phases. Further to protect sensitive information and prevent misuse, data processed by such LLMs must be stored under judicial rather than executive oversight. The framework should also include provisions relating to cybersecurity mandating data isolation, encryption and secure storage, as a single breach can violate citizens' rights and judicial integrity.

Moreover, for using any AI tool, explainability should be ground under the framework. It means that any use of a judicial AI system must be disclosed to all parties involved imposing strict restrictions on opaque outputs to preserve litigants' right to information. In case of any grievance, accountability must lie with the judicial officer utilizing the AI system. Continued use of AI systems should require periodic AI audits and reports assessing compliance, with submission to LJCP.

Another significant aspect is over-reliance on AI, which can be addressed through the Human-Centered AI (HCAI) approach. This approach balances the human-machine relationship, preventing full dependence on AI. Among HCAI's methods, Human in the Loop (HITL) and Human on the Loop (HOTL) ensure that AI supports humans and does not replace them. In HITL, humans participate actively and make decisions before any action is taken and in HOTL, humans participate but only intervene when necessary. Thus, in HITL, legal experts remain "in the loop" while in HOTL, they merely supervise. That's why, for the high-stakes nature of judicial decision-making, HITL should be the default standard in the legislative framework for judicial AI. It also requires an enforceable mechanism for judicial actors to prevent violation of HITL, alongside remedies for aggrieved persons. These basic guiding principles should constitute the core of the legislative regulation protecting human rights and fundamental freedoms in the lifecycle of the AI system.

Conclusion

The adoption of AI in Pakistan's overwhelmed courts offers a path toward systemic reform, subject to its use under human control. To incorporate AI into the judiciary, this study finds

that the constitution of Pakistan provides a proactive framework to restrict its use in such a manner that does not undermine fundamental rights and judicial independence. However, a comparison of the legal landscapes of China, Brazil and India, highlights that Pakistan is lagging in regulating judicial AI.

Moreover, by analyzing statutes, this paper has presented a legislative vacuum for Pakistan's judiciary, leaving the courts to incorporate AI systems without institutional safeguards. This highlights the insufficiency of current legal framework amid advancing technology. From the above discussion, it is clear that Pakistan has to introduce a dedicated legislation for judicial AI grounded in the principles of an assistive, human-centered approach that prevents algorithmic bias, ensures institutional oversight to enforce accountability and protects citizens' data and privacy, while upholding fundamental rights.

Moving forward in this decade of algorithmic innovation, where AI use in judicial platforms is transforming from myth to reality, what remains necessary is governing this innovation. Incorporating AI without the bounds preventing overreliance on it, risks the violation of the supreme law of the land. A Judicial AI Regulation Act, anchored in an institutional body such as the proposed Judicial AI Council, provides a mechanism through which Pakistan can secure judicial efficiency while upholding constitutional guarantees. The findings of this research offer a starting point for states facing similar imbalances of technology and legislation. By drawing on this study, other jurisdictions can establish foundational grounds for AI incorporation in their own judicial systems.

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