

The Role of Artificial Intelligence in the Judicial System of Pakistan: Prospects and Challenges

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Abstract

Artificial intelligence (AI) is no longer a distant technological idea for courts; it is becoming a practical instrument for legal research, case management, document review, scheduling, data analysis and access to justice. Pakistan's judiciary faces chronic delay, heavy backlog, paper-based processes, uneven digital infrastructure and barriers for ordinary litigants. These weaknesses affect not only administrative efficiency but also the constitutional promise of fair trial, dignity, privacy and inexpensive justice. This article examines the role of AI in Pakistan's judicial system through a doctrinal, analytical and comparative legal approach. It argues that AI can improve judicial efficiency by supporting legal research, drafting assistance, evidence organization, automated cause-list management, case-flow analytics and litigant information services. However, AI also creates serious risks: algorithmic bias, black-box reasoning, hallucinated legal output, data misuse, surveillance, automation bias, digital exclusion and uncertainty over accountability. The recent judicial and policy developments in Pakistan, including recognition of AI as an auxiliary judicial tool and national guidelines for AI in judicial institutions, provide an important starting point. Yet policy guidance alone is insufficient unless supported by enforceable rules, data protection safeguards, judicial training, independent audits and human oversight. The article concludes that Pakistan should adopt AI gradually, beginning with administrative and low-risk functions, while preserving the judge as the final constitutional decision-maker.

Keywords: Artificial Intelligence, Judiciary, Pakistan, Access to Justice, Algorithmic Bias, Human Oversight, Judicial Reform.

1. Introduction

An independent and efficient judiciary is necessary for the rule of law since judicial authorities guarantee rights, interpret laws, resolve disputes, and ensure that the public has faith in the government. In Pakistan, the provision of justice is often compromised due to delay, backlogs, procedures, and manual documentation. Judicial statistics of the Law and Justice Commission have consistently shown that pendency is a significant institutional issue as there are 1.86 million pending cases in the courts at different levels annually (Law & Justice Commission of Pakistan, 2024). Delays cannot be just seen as a management issue since delays infringe upon the right to a fair trial, dignity, property, family life, liberty, and other constitutional rights enshrined in the Constitution of the Islamic Republic of Pakistan (1973).

AI is therefore now part of the debate on judicial reforms. In the global context, courts and the legal profession utilize AI in legal research, e-discovery, translation, transcription, document classification, litigation prediction, dispute resolution, and scheduling services (Susskind, 2019). It has also been acknowledged by Pakistani researchers that information and communications technologies along with AI software can contribute to reducing trial delays in courtrooms when introduced through proper institutional planning (Shafiq et al., 2022). Recent Pakistani research also sheds light on the role of

AI in increasing transparency, legal efficiency, and justice access in under-served areas (Shah et al., 2025).

This article does not raise the question of whether Pakistan needs to introduce technology in its court system, but how this can be done while keeping in view the constitutional principles. The comparative literature on courts and artificial intelligence warns that judicial decision making cannot be equated with computational prediction (Sourdin, 2018). Artificial intelligence can help judges, lawyers, court staff, and litigants, but it cannot replace the judicial conscience, legal reasoning, empathy, and accountability. Therefore, it is proposed in this article that a balanced approach should be taken.

2. Methodology and Scope

The research method adopted in this article includes qualitative, doctrinal, and analytical methods. This approach consists of analyzing the relevant constitutional documents, legislation, judicial process, policies, writings of Pakistani legal experts, and the regulatory practices of other countries to analyze the possible applications of artificial intelligence in court management and support of judges in Pakistan. The comparative perspective is based on the experience of India, Singapore, USA, and Europe while acknowledging the diversity of regulation models existing in these countries. The analysis is confined only to the reasonable application of judicial AI and does not promote the full automation of the decision-making process in the cases mentioned above.

3. Legal and Institutional Context in Pakistan

The legal basis for the use of AI in Pakistan's judiciary lies in Articles 10A, 14, and 37(d) of the constitution (Constitution of Pakistan, 1973). While Article 10A provides for the right to fair trial and due process, Article 14 ensures dignity and privacy, and Article 37(d) ensures the duty of the state to provide inexpensive and speedy justice. The above-mentioned articles create both the reasons for and limitations on the use of artificial intelligence in the context of judicial functions. Firstly, technological intervention is necessary to deal with any delay affecting justice, while secondly, AI itself can be limited due to problems of lack of transparency and bias against fair trial and privacy rights.

The Supreme Court discussion in *Ishfaq Ahmed v. Mushtaq Ahmed* (2025) is critical because it acknowledges the use of AI as a means to mitigate delays while insisting that AI must assist, not replace, judges. Policy analysis of the case portrays it as the momentous case in Pakistan's judicial evolution digitally, especially in that it connects AI with prompt judgment and human oversight (Hashmi, 2025). However, the use of AI by the Federal Judicial Academy in its Judge-GPT project, which it claims has been used for legal research and writing, suggests that AI is not only a hypothetical concept in Pakistan but a reality in judicial process. However, the infrastructural challenge is uneven, specifically in district courts, in terms of internet access, digitization and standardization of data (Hashmi, 2025).

Pakistan's overall legal framework is not yet adequate for AI in the judicial system. The Prevention of Electronic Crimes Act, 2016 focuses on cyber-crimes and electronic abuse and not on the impartiality of algorithmic support for decision-making in court processes. The Personal Data Protection Bill, 2023 focuses on data protection issues more generally and not on creating a comprehensive framework for judicial data governance. The National Artificial Intelligence Policy 2025 outlines an overall national strategy for responsible AI that includes transparency, accountability, privacy, security, and human rights (Ministry of IT and Telecommunication, 2025). More specifically, the National Guidelines on the use of AI in judicial institutions in Pakistan adopt a human-centric approach to AI and allow the use of artificial intelligence for tasks such as case management, legal research, predictive analysis, and document processing without removing the role of judges from making decisions (National Judicial Policy Making Committee, 2026). This is indeed a positive development, although its success will be dependent on enforceability and audits.

Judicial AI should also be regarded in the context of the nature of adjudication. A judgment is not an automatic solution to a data problem that is based merely on the data; it is a reasoned legal

determination that is reasoned out from the pleadings, evidence, statutory interpretation, precedent, constitutional values, and the judge's evaluation of fairness. AI can handle information faster than humans, but lacks legal obligations, oath-bound independence and institutional legitimacy. Hence, the application of AI in Pakistan should be built on the principles that technology enhances the condition of adjudication, and adjudication is human. This is significant because it stops the potential for reform to become a justification for automating judges.

4. Prospects of AI in Pakistan's Judicial System

The use of AI has the potential to bring significant benefits to the judicial system in Pakistan, particularly by reducing delays, backlogs, and manual processes that erode public trust. With careful integration, AI can assist judges, court personnel, attorneys, and litigants, but shouldn't supplant human judgment or decision-making.

4.1. AI-Based Case Management

The first major is the use of AI to conduct case management. There are a number of cases which are either pending or newly instituted in Pakistani courts. The role of AI could be to categorize cases according to the subject matter of cases, age of cases, urgency of the cases, and procedure followed in the cases. Further, it could alert about old cases, detect adjournments repeatedly in cases, and aid in creating the cause list. Automating the scheduling process would make the workload distribution more rational (Gondal et al., 2025).

4.2 Research and Drafting

Second, the application of AI can make legal research and drafting of judgments more effective. It takes considerable time for judges and attorneys to search for precedents, statutes and commentaries. AI tools based on official Pakistani legal sources can provide case law, extract and analyze pleadings, outline the issues and cite the authorities. Generative AI can be utilized to draft judgments, edit them and ensure clarity. The use of AI must not exceed that of an auxiliary tool since judicial decision-making involves context, purposeful analysis and ethical consideration. Pakistani studies on generative AI prove that such an approach should be considered (Imam & Ahmed, 2025).

4.3 Document Review and Evidence Organization

Third, AI can enhance document reviewing and evidence management. There is always an abundance of documents in civil, constitutional, tax, and business disputes. AI can classify documents, identify any lack of annexures, organize similar documents, provide summaries for voluminous records, and reveal any discrepancies. In the criminal sector, AI can assist in forensic analyses, transcription, and managing digital evidence; however, there must be stringent measures since freedom and reputation are at stake here. AI does not decide on guilt or innocence but assists in analyzing complex evidence.

4.4 Transparency

Fourth, AI has potential to increase transparency in functioning of courts. Case assignment is one of the sensitive issues in any judicial system, considering fears that the assignment might be arbitrary. An efficiently designed AI case assignment algorithm can allocate cases based on some objective criteria including the subject matter, workload, urgency, and availability of judges. Not only will this prevent judge shopping; it will also provide useful institutional data. However, AI case assignment algorithms need to be explainable, auditable, and governed by court rules. European Ethical Charter for the Use of AI in Judicial Systems lists such principles as rights, non-discrimination, quality, security, transparency, impartiality, and user control (CEPEJ, 2018).

4.5 Access to Justice

Fifth, AI can facilitate access to justice. There are many obstacles facing people accessing justice, including economic, linguistic, geographical, and social barriers. Chatbots, legal databases, translators, and online filing support systems using AI can enable individuals to understand procedures, identify tribunals, monitor the progress of cases and draft initial documents. The access to justice literature has for a long time focused on the importance of procedural capability (Cappelletti & Garth, 1978). The role of AI in minimizing information barriers is possible, however, under the

condition when tools would be available in the Urdu language and local languages, and women, peasants, disabled people, and poor litigants will have access to them. In the literature related to AI and human rights in Pakistan, it is stressed that technology should be inclusive (Saeed et al., 2025).

4.6 Judicial Analytics

Another prospect includes institution-based learning with judicial analytics. If judicial information is cleaned, de-identified and normalized, AI can be used to find out the life span of various types of cases, the reasons for the adjournments, geographical disparities in the disposal process, and the stage at which cases usually get delayed. Judicial analytics would not decide on cases; they will only provide an insight into how administrative decisions can be improved. For example, special dockets may be created by the court for cases that relate to long-standing rental disputes, repeated applications for family enforcement, or commercial cases that require expert witnesses. Hence, using AI will enable policymakers to create evidence-based policies for judges instead of basing the policy on their perception of delay.

5. Challenges and Risks of AI in Pakistan's Judiciary

While AI can enhance the efficiency of the judicial process, there are significant constitutional, ethical, and institutional issues to consider when it comes to the application of AI in the courtroom. These are the risks which need to be tackled before AI can have an impact on rights, liberty, privacy, or judicial decisions in Pakistan.

5.1 Algorithmic Bias and Discrimination

AI-supported adjudication also presents problems of bias, privacy, injustice, and legitimacy in Pakistani empirical and doctrinal research on AI (Qureshi et al., 2024). However, the first issue related to the use of AI technologies in the field of dispute resolution is algorithmic bias. Algorithms rely on information, and such information could be biased because of the bias inherent in society, organizations, or even the process of accessing justice. Thus, any historical record of decisions made by the courts that could have been based on the class, gender, geographic, or policing biases would be reproduced in neutral outputs of AI. It is well known in the literature that unequal information leads to unequal outcomes regardless of discrimination (Barocas et al., 2023). It is more threatening in Pakistan because the litigant may already face discrimination because of poverty, linguistic reasons, gender inequality, rural setting, and lack of representation.

5.2 Explainability

Second, there is the issue of opacity. There is opacity in AI technologies in the sense that their operation cannot easily be explained. This should not be the case in the legal process since it would be difficult for litigants to know what was being done, and therefore, question and even appeal the decisions made by the judge. The idea of due process of technology calls for transparency, notice, and opportunity to contest when legal decisions are influenced by automated technologies (Citron, 2008). Pasquale (2015) also warns that the lack of transparency associated with algorithmic technologies can allow the users of such technologies to wield disproportionate power. Therefore, artificial intelligence used in the judiciary should be transparent, comprehensible, and contestable.

5.3 Hallucinations and Professional Responsibility

Third, AI can create incorrect or false legal documents. The problem of making up cases or citations is more than just theoretical; in the case of *Mata v. Avianca, Inc.* (2023), attorneys were punished for their reliance on fake AI-generated legal authorities. These cases show how critical it is to validate any work done by AI against law reports and legislation. Thus, it is imperative for the Pakistani judiciary to prevent the use of any unverified citations made through AI. Another problem relates to professional ethics. The lawyer can use AI technology in preparing pleadings, legal opinion, and research notes; but the obligations relating to competency, confidentiality, and honesty to the court are unaffected. Where an advocate uses AI technology to prepare pleadings which include invented references, irrelevant law, or confidential information uploaded to unprotected platforms, it is professional misconduct as well as a violation of constitutional rights. The judiciary must order bar

associations to guide on the process of verifying AI-generated content and proper citation and confidentiality of AI if used in the preparation of submissions. Students need to learn how to work with AI critically, and not treat it as an easy way to legal thinking.

5.4 Data Security

Fourth, the adoption of artificial intelligence raises questions about privacy and security of data. There are certain details that can be considered sensitive and relate to a range of issues including family disputes, criminal complaints, medical records, property, minors, witnesses, and business confidentiality. Processing of this data by third parties, foreign cloud services, or non-secure technologies may lead to compromising privacy and sovereignty of data in the courts. At the moment, there is no mechanism for protecting such data that could cover all aspects (Prevention of Electronic Crimes Act, 2016; Personal Data Protection Bill, 2023). Thus, Pakistan needs judicial data regulations.

5.5 Automation Bias

Fifth, Judicial independence might be affected by automation bias. There could be over-reliance by judges and other employees in courts on recommendations by artificial intelligence because of the supposedly technical nature of such judgments. According to O'Neil (2016), a mathematics framework can appear neutral while having subjective assumptions hidden within. Eubanks (2018) also shows that an automated system may have a detrimental impact on a vulnerable community when it is not used with accountability. In Pakistan, the judge must remain the ultimate decision-making individual, and artificial intelligence cannot replace the conscience and constitution.

5.6 Accountability

Sixth, Accountability is also another issue raised by AI. In cases where there is misclassification of facts, failure to mention precedents, wrong translation of evidence, exposure of data or even causing an unjust decision, who would be held responsible? Judge, court officials, programmer, company or even the State itself? Experience from other countries could be very helpful. The use of algorithmic risk assessment in *State v. Loomis* (2016) raised issues of due process since the defendant was not able to critically analyze the proprietary nature of the risk tool. Pakistan should avoid adopting instruments that cannot be analyzed in courts and by auditors.

5.7 Digital Divide

Finally, it seems that the digital divide is likely to result in the unequal distribution of the fruits of AI reform. Those who are better positioned within higher courts and cities may first be able to make use of AI reform, leaving behind those from lower courts, rural clients, and poorly resourced members of the bar. Absent the development of infrastructure, AI reform is likely to further deepen any existing inequalities. Studies of Pakistan's legal system have revealed paper-based processes, lack of training, and institutional resistance as the main barriers to technology adoption (Shah et al., 2025). Thus, the National Guidelines focus on training and implementation, which is correct, but it should be expanded to include judges, lawyers, clerks, prosecutors, police, and litigants (National Judicial Policy Making Committee, 2026).

6. Comparative Lessons for Pakistan

Comparative experience suggests that Pakistan should not rush into adopting AI in courts without due consideration and taking the lessons from jurisdictions which have already experimented with digital justice models. The examples illustrate how AI can play a supporting role to judicial reform when it is backed by law, transparency, human oversight and institutional accountability. India is relevant to the analysis because of the similarity in its common law legal system and difficulties regarding case backlog problems. India's policy debates around AI for all are characterized by inclusion, the application of artificial intelligence in the public sector, and responsible innovation (NITI Aayog, 2018). The use of AI in the SUPACE project of India's Supreme Court is another way of illustrating how artificial intelligence can be used as a tool of research assistance, rather than an

independent decision maker (Supreme Court of India, 2021). Pakistan could learn from India that introducing court technology should be done gradually and publicly to avoid displacing people's fears.

Singapore is a perfect example here as successful digital justice demands proper planning, integration, and designing for users. Singapore's judicial system has been striving to introduce an electronic filing system and digital services under a well-thought-out framework of modernization (Singapore Judiciary, 2024). Pakistan needs to follow the same course and avoid scattered pilot projects; rather, it needs to develop an integrated system at the provincial level. There are a number of valuable lessons to be learned from the United States. The use of risk assessment tools, predictive policing, and legally-focused submissions developed using artificial intelligence technology has led to much academic debate on issues of due process, discrimination, and the use of algorithms (Surden, 2019). The ProPublica study of criminal risk assessment raises issues in connection with the ability to create racially discriminatory predictions using algorithms (Angwin et al., 2016). Such issues indicate that Pakistan should not blindly adopt the use of artificial intelligence. The implementation of any form of judicial AI should be done with evaluation and interpretation in line with the constitution. European and international standards provide similar guidelines. For example, the EU Artificial Intelligence Act incorporates a risk-based approach to artificial intelligence regulation and identifies many AI systems used in justice proceedings as high-risk because of their possible effects on human rights. (European Union, 2024). The OECD AI Principles call for responsible AI that respects human rights and democratic values (OECD, 2019). The Recommendation on the Ethics of AI by UNESCO emphasizes human rights, equity, transparency, responsibility, and governance (UNESCO, 2021). These principles should be embedded in court rules in Pakistan.

7. Proposed Reform Framework for Responsible Judicial AI in Pakistan

Prior to the complete integration of AI in the judicial system, Pakistan requires a careful and rights-based reform framework. It must be efficient and guarantee fair trial and privacy, and should ensure the independence and public trust in courts.

7.1 Artificial Intelligence Rules

A gradual approach to rights-based framework must be adopted by Pakistan. At first, the Parliament and the higher courts in the country have to come up with rules that will regulate the use of AI in judicial decision-making. The use of AI should be allowed in legal research, schedule making, translation, transcription, case categorization, and cash flow analysis; however, it must not make any decisions related to guilt, liability, sentencing, bail, or rights.

7.2 Human Review

Second, All AI tools used in courts must go through human oversight. The judge should check that the AI has done its work properly before using it. Orders from the court should always result from human thought processes. This is consistent with *Ishfaq Ahmed v. Mushtaq Ahmed* (2025), and the international standards requiring human oversight of high-risk AI (OECD, 2019).

7.3 Oversight Board

Third, A Judicial AI Oversight Board should be set up by Pakistan as part of the Law and Justice Commission or an equivalent judicial body. This board should consist of judges, technologists, legal professionals, ethicists, data protection experts, and civil society members. Their duties will involve approval of AI technologies, creation of a public register, undertaking impact assessment of algorithms, undertaking annual auditing, and complaint investigation. This suggestion fits with the policy suggestions for Pakistan in terms of independent oversight and auditing (Hashmi, 2025; Farid & Ghazanfar, 2025).

7.4 Data Protection

Fourth, the need for judicial data protection should be improved. The court's data should be used strictly for judicial purposes. If possible, confidential data should be made anonymous, encrypted, and saved in-house and accessible only by authorized personnel under procurement policies. Vendors should be required to be under confidentiality, security, and liability clauses.

7.5 Pilots and Training

Fifth, use of artificial intelligence (AI) needs to start with low-risk cases and pilots projects. Projects such as case management, cause listing, helping with legal research, translating documents, and sorting out the files are better choices compared to projects that entail sentencing, bail, or constitutional interpretation cases. Pilot projects need to be evaluated before any other form of deployment. Artificial intelligence training at the Federal Judicial Academy as well as provincial judicial academies needs to be mandatory, focused on application, and ongoing. Furthermore, the bar councils and law schools need to include AI components in their legal curriculum as well.

7.6 Local Design

Sixth, the procurement and design processes should take place locally. It would be unwise for Pakistan to depend upon foreign software, which was developed in a legal culture that Pakistan does not know anything about or software which uses data from other countries. Legal AI needs to use valid legal data related to Pakistan. Open standards, local hosting, and strong governmental technology capacity would help avoid vendor lock-in and ensure data sovereignty. When dealing with private contractors, the contract needs to have clauses that talk about explainability, testing, localization of the data, availability of the source code where possible, and termination in situations that may pose legal or ethical issues.

7.7 Evaluation

Seventh, the implementation of AI technology must be appraised through clear-cut performance criteria. The courts need to consider whether the adoption of AI technology leads to fewer adjournments, increased accuracy of filing, faster research, faster clearing of backlog, and increased user satisfaction. They also need to consider possible negative impacts of AI technology such as errors in summaries, breach of confidentiality, discrimination, and complaints of users. Periodic assessment can overcome symbolic digitization to ensure that technological advancement is not just communicated but properly implemented. Performance assessments on the use of judicial AI technologies must consider constitutional standards such as access to justice, quality of adjudication, data protection, equality of access to the court system, and fostering judicial legitimacy.

8. Conclusion

The usage of artificial intelligence in Pakistan's judicial sector would prove beneficial to the system if the application of such technology is viewed as merely a means to aid the constitution but not necessarily to replace judges. The advantages that may arise from implementing AI technology in the system are many and include speedy legal research, improved case and document management, more transparency, and easier access to justice. Nevertheless, certain dangers accompany the use of artificial intelligence in this sector. Pakistan's growing legal-policy framework and judicial orders indicate significant progress, especially with the human-centered approach where artificial intelligence technology is used to assist, not supplant, the process of judicial decision making. The next step is the transformation of the above-mentioned notions into regulatory instruments, creation of an independent oversight body, provision of necessary infrastructure, implementation of court-specific data protection, conducting an audit process, and offering training. Thus, an accountable judicial AI may be assessed in terms of its ability to increase the quality of the trials, preserve dignity and privacy, facilitate access to justice, and foster trust in the judicial system.

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