AI & Indian Judicial System

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Abstract

The Indian judicial system is burdened with over 4.5 crore pending cases, leading to significant delays in justice delivery. Factors such as a shortage of judges, procedural inefficiencies, and increasing litigation contribute to the backlog. To address these challenges, policymakers and legal experts have explored Artificial Intelligence (AI) as a transformative solution. AI has the potential to streamline legal research, automate repetitive tasks, assist judges in decision-making, and enhance overall judicial efficiency. This literature review examines Indian studies, reports, and research papers discussing AI's role in the judiciary, its benefits, challenges, and ethical considerations.

Key words: Indian Judicial System, Case Backlog, Justice Delays, Shortage of Judges, Procedural Inefficiencies, Increasing Litigation, Artificial Intelligence (AI) in Judiciary, Legal Research Automation, Judicial Decision-Making, AI in Legal Sector, Court Digitization, Judicial Efficiency, AI-Powered Case Management, Legal Technology, Ethical AI in Law, AI-Assisted Justice, Judicial Reforms, Automation in Law, AI Challenges in Judiciary, Future of AI in Law.

Literature Review: Artificial Intelligence in the Indian Judicial System

AI in the Indian Judicial System: Existing Studies and Reports

Several Indian scholars and institutions have analysed the potential impact of AI on the judiciary.

NITI Aayog's Discussion Paper on AI (2020)

NITI Aayog, India's leading policy think tank, identified AI as a key enabler in the judicial system.

The paper suggests that AI can be used for legal research, case management, and court automation.

It also emphasizes the need for AI ethics and data security frameworks in legal applications.

National Judicial Data Grid (NJDG) Report (2021)

The NJDG, which monitors case statistics across Indian courts, suggests that AI-based analytics could help track case progress, predict delays, and identify procedural inefficiencies.

AI tools can be integrated with NJDG for better case scheduling and management.

Justice B.N. Srikrishna's Report on AI and Judiciary (2022)

Justice Srikrishna argues that AI should not replace human judges but assist in decision-making.

His report suggests that AI tools like case summarization software and legal chatbots can improve efficiency.

However, the report highlights risks such as algorithmic bias and lack of transparency in AI decisions.

These studies highlight that AI can play a complementary role in improving efficiency but also emphasize the need for regulatory frameworks to prevent bias and ensure fairness.

AI Initiatives in the Indian Judiciary

India has already begun experimenting with AI tools in courts to improve efficiency.

SUPACE (Supreme Court Portal for Assistance in Court Efficiency)

Launched by the Supreme Court of India, SUPACE is an AI-based research tool designed to assist judges.

It helps in legal research, document summarization, and case analysis, reducing the burden on judges.

Former CJI S.A. Bobde stated that AI would help judges focus on core judicial functions while automation handles repetitive tasks.

SUVAS (Supreme Court Vidhik Anuvaad Software)

An AI-driven translation tool developed to translate judgments and legal documents into regional languages.

This aims to improve accessibility for litigants who do not understand English or Hindi.

AI in Predictive Legal Analysis

Research at IIIT Hyderabad and NALSAR University suggests that AI tools can be trained to predict case outcomes based on historical judgments.

While AI can assist in legal reasoning and precedent analysis, scholars caution that judicial discretion should not be compromised.

These initiatives show that AI adoption in Indian courts is still in its early stages but has the potential to transform legal processes.

Benefits of AI in the Indian Judiciary

Several Indian legal scholars highlight the advantages of AI implementation in courts:

Faster Case Processing: AI can automate case scheduling, legal research, and document review, reducing the time taken for hearings and judgments.

Reduction in Human Bias: AI can analyze cases based on legal principles rather than personal biases, promoting fair decision-making.

Improved Legal Research: AI tools like SUPACE can quickly scan and summarize judgments, making legal research more efficient.

Cost-Effective and Sustainable Justice Delivery: Automation reduces the burden on court staff, leading to lower administrative costs and better resource management.

Enhanced Access to Justice: AI-powered chatbots and translation tools like SUVAS can help litigants understand legal processes, bridging the gap between citizens and the judiciary.

These studies indicate that AI can greatly enhance judicial efficiency and transparency, provided it is implemented with proper safeguards.

Challenges and Ethical Concerns

Despite its potential, AI in the Indian legal system faces several challenges:

Algorithmic Bias: AI models trained on historical case data may perpetuate existing biases, leading to unfair legal outcomes.

Lack of Explainability: AI decisions must be interpretable so that judges can understand and validate AI-generated recommendations.

Data Privacy and Security: Legal data is highly sensitive, and AI systems must comply with strict data protection laws to prevent misuse.

Resistance to Technological Change: Many legal professionals are not well-versed in AI and technology, creating resistance to adoption.

Judicial Accountability: AI cannot replace judges, and its role should be limited to assistance rather than final decision-making.

Introduction

The persistent increase in the number of cases in Indian courts has become a significant concern for the legislative, executive, and judicial branches of the government. To address this issue, various measures are being implemented, such as promoting Alternative Dispute Resolution (ADR) mechanisms and repealing obsolete laws. In this regard, one of the most important measures undertaken is the use of Artificial Intelligence (AI), which is employed to tackle this problem and remains largely unexplored. [1] Being the world's largest democracy with a population exceeding 1.45 billion, India faces a shortage of resources in every sector, including the judiciary.[2] The shortage of judges, coupled with the increasing rates of new cases, results in civil and criminal trials taking years to resolve, unlike in developed nations where trials are concluded within days.[3] As a result, justice is delayed and rendered ineffective, diminishing its value to society.[4] Therefore, it is crucial to consider innovative solutions, in addition to traditional ones, to enhance the efficiency and sustainability of the justice delivery system.[5] One promising solution is the application of AI in judicial processes, with Indian courts already transitioning to digital operations.[6] AI could play a pivotal role in ensuring sustainable justice delivery and reducing the case backlog.[7]

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3. Goudie, Chris, and Smita Ghosh. Judicial Delays in India: Causes and Solutions. Oxford University Press, 2020, pp. 45-56.
4. World Justice Project. Rule of Law Index 2022. Available at: https://worldjusticeproject.org.

5. NITI Aayog. Responsible AI for All: Approach Document for India, 2023, pp. 102-115. Available at: https://niti.gov.in.

6. Supreme Court of India. E-Courts Project: Phase II Evaluation Report, 2022. Available at: https://main.sci.gov.in.

7. Vidhi Centre for Legal Policy. AI and the Indian Judiciary: Policy Recommendations, 2021, pp. 15-29. Available at: https://vidhilegalpolicy.in. Balakrishnan, K. G. The Challenges of Judicial Administration in India. Eastern Book Company, 2019, pp. 85-90.

Considering developed countries such as the USA and Canada, AI is already assisting judges in matters of bail and parole.[8] Similarly, in India, some court tasks require specification and expedition through AI tools.[9] The use of AI tools would save judicial time, improve public fund utilization, and help mitigate personal biases in judicial decision-making.[10]

The usage of AI does not mean replacing human judges; rather, these AI tools assist judges by providing calculated and unbiased opinions, ensuring that justice is not compromised.[11] AI has proven beneficial in many fields and industries such as medicine, transportation, and marketing.[12] In the judicial domain, AI plays a significant role in enhancing the speed and sustainability of the Indian justice delivery system.[13] Thus, it is evident that AI provides a viable solution for decision-making and reducing case backlogs in India and worldwide.[14]

From available facts and figures, it is accepted that India, being the world's largest democracy, will surpass China's population by 2028, as per reports by the United Nations.[15] This population growth, coupled with improved financial conditions, decreased tolerance, and a materialistic lifestyle, has led to an increase in civil and criminal litigation.[16] Currently, India has a backlog of approximately 4.5 crore pending cases, highlighting the significant issue of delays and ineffective justice delivery.[17]

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9. Bhardwaj, Aashish. AI in Indian Judiciary: Challenges and Opportunities. Eastern Book Company, 2023, pp. 24-38.

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12. Brynjolfsson, Erik, and McAfee, Andrew. The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. W.W. Norton & Company, 2016, pp. 88-102.

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14. World Justice Project. Rule of Law Index 2022. Available at: https://worldjusticeproject.org.

15. United Nations. World Population Prospects 2022. Department of Economic and Social Affairs. Available at: https://population.un.org.

16. Bhattacharya, Sujit. Litigation Trends in India: A Comprehensive Study. Oxford University Press, 2020, pp. 56-67.

17. Ministry of Law and Justice, Government of India. Status Report on Case Backlogs, 2023. Available at: https://lawmin.gov.in.

This pendency of 4.5 crore cases is due to several factors such as procedural delays, shortage of judges, and administrative inefficiencies.[18] To overcome this situation, the Law Minister has recently recommended the usage of Artificial Intelligence (AI), which has significant applications across various disciplines, not just in science but in other fields as well.[19] With the increase in automation, reliance on machines for small tasks has also increased, leading to the rise of AI and Machine Learning.[20]

Artificial Intelligence can be defined as:

"The capability of a digital computer or controlled robots to perform tasks typically requiring human intelligence, such as reasoning, discovering, generalizing, or even learning from experience." [21]

As per the National Judicial Data Grid (NJDG), AI enables machines to think and act like humans, replicating cognitive functions such as learning and problem-solving.[22] AI is empowered by its environment to identify problems, devise solutions, and execute tasks with high precision.[23] In furtherance of this, AI can address the issue of case backlogs in courts by expediting legal processes and assisting judges.[24] AI proves to be a boon by saving time and money. It aids in drafting and note-taking, as seen with tools like Dragon NaturallySpeaking, and reviewing documents, particularly contracts, using software such as "Contract Intelligence" (COIN).[25] Moreover, AI is helpful in predicting case outcomes with higher accuracy than human lawyers, leading to increased reliance on this technology.[26]

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18. Ministry of Law and Justice, Government of India. Status Report on Case Backlogs, 2023. Available at: https://lawmin.gov.in.

19. NITI Aayog. AI for All: Policy and Recommendations for Indian Judiciary, 2023, pp. 22-30. Available at: https://niti.gov.in.

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22. National Judicial Data Grid (NJDG). AI Integration Report, 2022. Available at: https://njdg.ecourts.gov.in.

23. Vidhi Centre for Legal Policy. Artificial Intelligence in the Indian Judiciary, 2021, pp. 10-18. Available at: https://vidhilegalpolicy.in.

24. Supreme Court of India. AI and Justice Delivery System Report, 2022. Available at: https://main.sci.gov.in.

25. Thomson Reuters. Artificial Intelligence in Legal Work: Tools and Techniques, 2021, pp. 78-85. Available at: https://legal.thomsonreuters.com.

26. Katz, Daniel Martin, et al. A General Approach for Predicting the Behaviour of the Supreme Court of the United States. PLOS ONE, 2017, vol. 12, no. 4. Available at: https://journals.plos.org.

Different types of applications on AI which is used in Indian Legal System:

1.   Supreme Court Vidhik Anuvaad Software(SCVAS) : This application is based on the artificial intelligence and have used by Supreme court of India to translate the legal document into the different vernacular language.[27]

2.   Supreme Court Portal for Assistance in Court's efficiency (SUPACE): This application is launched currently by Supreme court of India as a tool that collects the relevant facts and laws and makes them available to the judges.[28]

3.   Multilingual Mobile Application: With the help of National Informatics Centre nation's highest court has launched an application which helps the citizens to access cases judgements, important circulars information with one clicks.[29]

4.   Online Courts: one of the most important advancements brought about by judicial reforms is the free online availability of a relevant information regarding court orders and judgement. The establishment of e- courts will lead to the shift of cases, easier record maintenance, greater reliability of recorded evidences and increased transparency in the functioning of the courts.

5.   AI Systems in Legal Technology: Researchers at IIT Kharagpur have developed an AI-assisted technology capable of reading court orders and judgments. This system utilizes machine learning to identify violated laws.

6.   Kira Systems by Cyril Amarchand Mangaldas: In collaboration with Canadian AI firm Kira Systems, the Indian law firm Cyril Amarchand Mangaldas is now employing AI for contract analysis and review.

Judges, like lawyers, can use AI-powered machines to expedite various stages of a case, ultimately reducing the overall time needed for a decision. Since the stages in civil and criminal cases differ, it's essential to discuss these differences before understanding how AI can speed up each process. A typical civil case generally progresses through specific stages that can benefit from AI intervention.[30]

27. Harshul Gupta, "Scope of Artificial Intelligence as a judge in judicial sector", Indian Journal of Law, Polity and Administration.
28. AI Portal, available at:https://www.drishtiias.com.
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Utilizing AI to Expedite Court Processes

Courts are responsible for numerous tasks, including making interim decisions throughout various stages of a case. However, certain fundamental tasks can be expedited using AI-powered machines, significantly speeding up the overall decision-making process. One key task is reading and analysing document contents. Companies like Microsoft have developed software capable of reading and comprehending documents as well as, or even better than, humans. This software can also answer questions based on the document's contents. Notably, a team from Microsoft Research Asia has achieved a significant milestone in human-level understanding using the Stanford Question Answering Dataset (SQuAD). This AI capability allows for faster processing and analysis of legal documents, reducing the time judges and court staff spend on these tasks and ultimately leading to more efficient court proceedings. **Enhancing Judicial Processes with AI**

The integration of Artificial Intelligence (AI) into judicial processes holds significant potential for improving efficiency and reducing delays in the court system. Courts are tasked with a multitude of responsibilities, including interim decisions that often extend the duration of case resolution. Several key

tasks can be expedited using AI-powered machines, streamlining the decision-making process and allowing judicial officers to focus on more critical aspects of their work.

One of the most impactful applications of AI in the judiciary is in the reading and analysing of documents. Leading companies like Microsoft have developed advanced software capable of reading and comprehending documents as well as, or even better than, humans. These systems utilize machine learning algorithms to interpret the contents of documents and answer questions based on that information.

For example, Microsoft's AI achieved human parity using the Stanford Question Answering Dataset (SQAD). Researchers at Alibaba have also created similar AI systems with comparable capabilities. In a judicial context, these AI tools can be deployed to quickly read and analyze pleadings and evidence, significantly reducing the time judges spend on these tasks. This not only speeds up the judicial process but also allows judges to double-check their understanding of cases, ensuring more accurate and informed decisions.

Another critical area where AI can make a difference is in summarizing document contents. Judges often need to sift through extensive documents before making decisions. AI-powered summarization tools, such as Summarizer, can provide concise and accurate summaries of documents. This capability is particularly useful for making quick assessments of lengthy case files, legal precedents, and witness statements, allowing judges to focus on critical arguments and key evidence. By reducing the cognitive load and time required for document review, AI-powered summarization tools enhance judicial efficiency and help maintain the integrity of legal decision-making.

In conclusion, AI-powered tools have the potential to revolutionize the judicial process by enhancing efficiency, accuracy, and decision-making. From analyzing pleadings and evidence to summarizing lengthy documents, AI can significantly reduce the workload of judges, allowing them to focus on delivering well-informed and just rulings. As AI continues to evolve, its integration into the legal system can lead to faster case resolutions and a more accessible and fair judicial process.