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Algorithmic Justice: Analysing the role of Artificial intelligence in Courts

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ABSTRACT

The rapid advancement of Artificial Intelligence (AI) has significantly influenced judicial systems across the world, including India. Courts are increasingly adopting AI-driven technologies for legal research, translation, case management, document analysis, and administrative efficiency. This article critically examines the growing role of AI in the judiciary while analysing whether constitutional principles and ethical values permit the replacement of judges by machines. It discusses the evolution of AI, the development of digital justice initiatives in India under the E-Courts Project, and the adoption of tools such as SUPACE, SUVAS, and AI-assisted legal analytics.

The article further explores the use of AI in foreign judicial systems, including China, Brazil, Singapore, and the United Arab Emirates, where technology has been integrated to improve judicial efficiency and reduce delays. While acknowledging the advantages of AI in reducing case backlogs, improving accessibility, and supporting legal research, the study highlights the associated risks relating to algorithmic bias, transparency, accountability, and the "black box" nature of automated reasoning.

Special emphasis is placed on the constitutional framework of India, particularly Articles 14 and 21, which require fairness, equality, and due process in adjudication. The article argues that judicial decision-making involves human reasoning, empathy, ethical responsibility, and constitutional morality, which cannot be replicated entirely through algorithms. It concludes that AI should function only as an assistive tool under strict human supervision and balanced regulatory safeguards. The future of AI in the Indian judiciary therefore lies not in replacing judges, but in strengthening judicial administration while preserving public confidence, judicial independence, and the human element of justice.

Keywords: *Artificial Intelligence (AI), judiciary, courts.*

I. INTRODUCTION

The integration of artificial intelligence in courtrooms is still a debatable topic concerning to its factors across the globe. The technological revolution, led to the advancement of judicial aspects, which incorporated UNESCO's guidelines for the judiciary with regards to the AI been

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accepted but uneven when comes to execution in judiciary all over the world.

The term "justice" is not easily accessible to everyone though being in 21st century, which indeed needs the rise of AI in governance. These guidelines laid safeguards and strengthen the judiciary. The data express that in south Asian counties, a straggering 53 million cases are pending. Artificial intelligence, particularly large language models and automation technologies, is proving highly effective in reducing workloads.

In Argentina, for example, the virtual assistant *Prometea* has significantly boosted legal professionals' efficiency enabling them to handle around 490 cases each month, up from about 130 before its deployment, a productivity has been gain of nearly 300%. Similarly, considering Egypt, the adoption of automated transcription technology in 2024 has further streamlined court operations and increased public access to the legal proceedings easily. The judiciary today stands at the apex of the rapidly evolving influence of artificial intelligence. Now, across the world are increasingly dealing with AI-generated evidence, algorithm based sentencing assistance for legal purposes, and automated judicial administration. While judges and legal institutions remain the protectors of fairness, accountability, and human rights, the growing complexity of AI demands structured guidance and oversight the judiciary.

The recent incidents in the United Kingdom highlight these major concerns. In two distinct matters before the High Court, where the lawyers expressly relied on AI-generated submissions that cited fictitious cases, leading to delays in the proceedings, unnecessary legal expenses to counsels and clients including court, and financial penalties. The *Senior Judge Dame Victoria* Sharp cautioned that the misuse of artificial intelligence could seriously undermine public trust and the administration of justice.The UNESCO's 2024 survey further revealed that only a small percentage of judicial professionals have received AI-related training, despite widespread use of such tools. Consequently, UNESCO introduced 15 ethical AI Guidelines emphasizing transparency, auditability, cybersecurity, and human supervision, ensuring that AI assists judicial functioning without replacing human judgment.

Thus, can machines like algorithmic tools truly deliver justice better than humans?

II. ARTIFICIAL INTELLIGENCE IN JUDICIAL SYSTEM – EVOLUTION AND LEGAL STANDARDS

With regards to the due course of time, AI has got the ability to formulate and think like humans, which allows the drastic technological shift around the world. Even though the concept of artificial intelligence had been known for several decades already before even its existence, real

developments did not start until the 1950s. At the first phase, inventors thought about building devices that could be able to simulate human intelligence, and the British mathematician *Alan Turing* offered the idea of solving problems and making decisions based on logic and information available to the computer in that era.

In the beginning of all these, computers could only perform tasks following the instructions received given by humans, and they were not able to store or process the information. The researches suffered from financial shortages until the end of the 1970s, and after this period computers became increasingly sophisticated and widespread across the world.

There were a few crucial objectives for developing AI technologies. People wanted machines to think logically and solve complex tasks, speak foreign languages, identify people and other objects, and move freely in the real-world environment.

It was needed to create abilities in AI that would allow perceiving human senses and qualities such as creativity and emotions, which constitute the major part of any AI developed system. Huge resources were involved to accomplish these tasks. However, lack of data and inadequate computer system made the process extremely slow until the 1980s.[1]

To improve access to justice through technology driven mechanisms, the Government of India launched the e-Courts Project in 2005 with the objective of making the judicial system faster, transparent, affordable, and easily accessible.

This project marked the beginning of the digital transformation of Indian courts. In its first phase, the focus was mainly on building digital infrastructure by providing computers, internet connectivity, and digitizing court records to the largely accessible public database.

The second phase expanded these services by introducing litigant-friendly systems such as the National Judicial Data Grid (NJDG)[2], e-filing, and e-payment facilities. These initiatives enabled people to access case details online and simplified court procedures. However, several practical challenges remained, such as including limited scalability and difficulties in data sharing among courts and institutions throughout the system.

Now, to address these concerns, Phase III of the e-Courts Project was introduced in 2023 by the government of india, with a stronger focus on artificial intelligence and integrated digital services.

[1] Vani Khanna & Aviansh Dubey, Ai and evolving Indian legal system, Volume 10, Issue 3 March 2025, International Journal for Research Trends and Innovation, pg.no 3 (2025)

[2] National Judicial Data Grid, https://njdg.ecourts.gov.in/njdg_v3//?p = home&app_token= (last visited may. 11, 2026).

 [ISSN 2581-5369]

The new phase aimed to improve coordination between courts, police, prisons, and investigative agencies through seamless data sharing ideas. It also promoted virtual hearings, intelligent case scheduling, digital repositories, machine-readable documents, and unified online payment systems.[3]

The Indian judiciary has also adopted AI-based tools such as SUVAS[4], which translates judicial documents into regional languages, and SUPACE, which assists judges in legal research and document summarization.

Another tool like, AI Saransh, is being developed to prepare concise summaries of case pleadings to make it fesiable. These innovations can significantly improve judicial efficiency and accessibility, but their use must remain carefully monitored to avoid issues relating to bias, reliability, and accuracy.[5]

III. USAGE OF AI IN FOREIGN JUDICIAL SYSTEMS

The use of Artificial Intelligence (AI) in foreign judicial systems has expanded majorly, such as particularly in countries belonging to the Global Majority. Therefore, Courts across nations such as China, Brazil, Singapore, the United Arab Emirates, India, Egypt, and Türkiye are increasingly adopting and adapting AI-driven technologies such that it improve judicial efficiency, reduce delays, and streamline administrative functions.

AI is mainly utilized in judiciary for tasks such as automated transcription, document classification, legal research assistance, translation of judgments, case management, and predictive analysis of judicial outcomes.

Now that of China has emerged as one of the leading examples of AI integration in courts through its "Smart Courts" initiative. The Chinese courts employ technologies such as natural language processing, speech recognition, and AI-assisted adjudication systems to analyse legal documents and assist judges in drafting decisions.

Similarly, country like Brazil has implemented AI systems like "Victor" and "SIGMA" to

[3] Ministry of Law and Justice, Government of India, *e-Court Mission Mode Project*, https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1848737 (last visited May 11, 2026)

[4] Under SUVAS, the artificial intelligence (AI), and machine learning (ML) based tools are being deployed in case management. They are being used in transcribing of oral arguments in Constitution Bench matters. The AI assisted transcribed arguments can be accessed from the website of the Supreme Court. It is also used in translation of judgments from English language to 18 Indian languages, viz., Assamese, Bengali, Garo, Gujarati, Hindi, Kannada, Kashmiri, Khasi, Konkani, Malayali, Marathi, Nepali, Odia, Punjabi, Santali, Tamil, Telugu, and Urdu. See *Use of AI in Supreme Court Case Management*, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2113224&reg=3&lang=2 (last visited May. 11, 2026)

[5] Taruna Solankia & Animesh Pareek, AI and Technology in the Indian Judiciary: A StepToward Enhancing Efficiency and Equity, vOL. 45, nO. 1, taylor & francis group, LLc, pg no. 89-92 (last visited May, 11 2026)

screen appeals, identify precedents, and assist judges in preparing judgments. These tools help courts handle large caseloads more efficiently while promoting consistency in decision-making.

Whereas in Singapore, AI tools are used in Small Claims Tribunals to guide litigants through legal procedures, estimate claim outcomes, and simplify filing processes. The United Arab Emirates has also introduced AI-powered virtual legal assistants that support judges by analysing previous cases and generating jurisprudential insights.

Likewise, coming to India - "SUVAS" program employs AI-based translation systems to make judicial decisions accessible in regional languages, thereby improving access to justice for diverse linguistic communities.

The Human oversight, ethical safeguards, and accountability mechanisms remain essential for preserving judicial independence and ensuring fair administration of justice. [6]

IV. INDIAN JUDICIARY: IS THE SCOPE OF AI IN INDIA DIVERSIFIED TO ACCEPT AI IN JUDICIARY?

The Indian judiciary is gradually developing a diversified framework capable of accepting and integrating Artificial Intelligence (AI) into judicial administration. With millions of pending cases across various courts, the need for technological modernization has become increasingly significant. AI offers the possibility of improving efficiency, reducing procedural delays, and strengthening access to justice. Indian courts have already started adopting digital mechanisms such as e-filing, virtual hearings, automated transcription, and AI-assisted translation systems, which indicate that the judicial system is becoming more receptive to technological innovation.

One of the most notable developments is the introduction of the Supreme Court's "SUVAS" (Supreme Court Vidhik Anuvaad Software), an AI-based translation tool designed to translate judicial documents into regional languages. This initiative promotes linguistic accessibility and enables litigants from diverse backgrounds to understand judicial proceedings more effectively. Additionally, AI-powered tools are increasingly being explored for legal research, document review, case classification, and scheduling functions. Such technologies can help judges and court staff manage large volumes of cases more efficiently and reduce administrative burdens.

The scope of AI in the Indian judiciary is diversified because its applications extend beyond adjudication into broader judicial administration. AI has the potential to support predictive analytics for identifying repetitive litigation, automate procedural compliance checks, and assist

[6] Ibrahim Sabra, *AI in Global Majority Judicial Systems*, STIMSON CTR. (Jan. 8, 2026), https://www.stimson.org/2026/ai-in-global-majority-judicial-systems/

 [ISSN 2581-5369]

in organizing legal precedents. Virtual courts and online dispute resolution mechanisms introduced during and after the COVID-19 pandemic further demonstrate the judiciary's willingness to adopt technological solutions. These developments reflect an evolving institutional mindset that recognizes AI as a supportive mechanism for improving justice delivery.

However, India's acceptance of AI in the judiciary is not without limitations and concerns. Significant challenges remain regarding data privacy, algorithmic bias, cybersecurity, transparency, and accountability. Judicial decision-making involves constitutional morality, human reasoning, and social sensitivity, which cannot be entirely replicated by automated systems. There is apprehension that AI systems trained on incomplete or biased data may produce discriminatory outcomes or undermine procedural fairness. Consequently, the prevailing view in India is that AI should only assist judges rather than replace human adjudication. Human supervision remains essential to preserve judicial independence and public confidence in the legal system.

Overall, the Indian judiciary possesses a diversified and evolving scope for accepting AI, particularly in administrative and supportive functions. While complete automation of judicial decision-making is neither feasible nor desirable at present, carefully regulated AI integration can significantly enhance judicial efficiency, transparency, and accessibility. The future success of AI in India's judicial system will depend upon ethical governance, institutional safeguards, and a balanced approach that combines technological advancement with constitutional values.[7]

V. MERTIS OF AI IN INDIAN LEGAL SYSTEM AND ALGORITHMIC DECISION MAKING

Artificial Intelligence (AI) has emerged as a significant technological development in the Indian legal system. Although judicial work fundamentally depends upon human reasoning, discretion, and interpretation of law, AI can function as a supportive mechanism that enhances judicial efficiency and access to justice. The Indian judiciary has already introduced AI-based initiatives under the E-Courts Project Phase III to modernise court administration and improve legal research.[8]

One of the major advantages of AI is its ability to reduce judicial delays and manage excessive case backlogs. Indian courts are burdened with millions of pending cases, which affects timely delivery of justice. AI-based systems can assist in case categorisation, scheduling of hearings,

[7] Vivek Trivedi & Nilakshi Nilakshi, *Artificial Intelligence in the Indian Judiciary: A Systematic Analysis of Potential Applications and Challenges in Addressing Case Backlogs*, 1 J. Trends & Challenges in Artificial Intelligence 91 (2024), https://jai.aspur.rs/archive/v1/n3/3.pdf

[8] Department of Justice, Government of India, *E-Courts Project Phase III* (2023).

 [ISSN 2581-5369]

document management, and identification of relevant precedents within seconds.[9] This reduces administrative workload and enables judges to devote more attention to adjudication and legal reasoning.

AI also improves legal research and drafting assistance. Tools such as SUPACE and LegRAA help judges and lawyers analyse documents, retrieve relevant case laws, and summarise lengthy records efficiently.[10] Such systems save time and minimise human error in research. Additionally, AI-powered transcription and translation tools promote accessibility by converting court proceedings and legal documents into regional languages, thereby making justice more inclusive.[11]

Algorithmic decision-making further contributes to consistency and predictability in judicial administration. By analysing past judgments and legal trends, AI systems may assist litigants in understanding probable outcomes and encourage dispute resolution.[12] However, AI should remain an assistive tool rather than a substitute for judicial discretion. Judicial decisions involve ethical considerations, constitutional values, and human empathy, which cannot be replicated entirely through algorithms.

VI. RISK AND CHALLENGES OF AI IN COURTS

The increasing use of Artificial Intelligence (AI) in courts raises serious concerns regarding judicial independence, accountability, and fairness. Judicial adjudication is fundamentally based on human reasoning and careful appreciation of facts, evidence, and circumstances. AI systems function by identifying patterns from existing data and may therefore generalise cases that appear similar, even when material factual differences exist.[13] This creates a risk of mechanical decision-making, where unique facts requiring independent judicial consideration may be overlooked.

Another major challenge is the inability of AI systems to properly assess documentary and oral evidence. Indian trial courts frequently deal with handwritten records, regional language documents, damaged files, and corrected entries that require contextual understanding and human interpretation.[14] AI tools, including optical character recognition technologies, are not fully reliable in extracting or understanding such complex material. Errors in interpretation may

[9] Id.
[10] Supreme Court of India, SUPACE Initiative Report (2021).
[11] Id.
[12] Correctional Offender Management Profiling for Alternative Sanctions (COMPAS), United States.
[13] *Artificial Intelligence in Trial Courts in India*, SCC Online Blog (Apr. 16, 2026).
[14] Id.

 [ISSN 2581-5369]

ultimately affect the fairness of judicial outcomes.

The use of AI-generated reasoning also threatens the core judicial function of "application of mind." Instead of independently analysing the dispute, judges may gradually begin relying upon AI-generated drafts and merely approve the suggested reasoning.[15] This creates a "black box" problem, where it becomes difficult to understand how a conclusion was reached. Such opacity weakens transparency and judicial accountability.

Further, excessive reliance on AI may reduce public confidence in the judiciary. Courts derive legitimacy from the belief that disputes are decided by impartial human judges exercising reason and conscience. If judgments appear to be machine-generated, litigants may question the authenticity and fairness of adjudication.[16] Therefore, while AI may assist in administrative and research functions, it cannot replace human judgment in the judicial process.

VII. DOES INDIAN CONSTITUTION AND THE ETHICAL CONCERN, BEING THE ROOT OF INDIAN LEGAL SYSTEM ALLOWS AI TO REPLACE JUDGES – A CRITICAL ANALYSIS

The Indian Constitution does not support the complete replacement of judges by Artificial Intelligence (AI) in judicial decision-making. Although AI can improve efficiency, legal research, case management, and accessibility within courts, the constitutional and ethical foundations of the Indian legal system require adjudication to remain a human function. Judicial decision-making involves not only the interpretation of law but also the exercise of discretion, empathy, morality, and constitutional values, which cannot be replicated by algorithms.[17]

The Constitution guarantees equality before law under Article 14 and protection of life and personal liberty under Article 21. AI-driven adjudication creates concerns regarding algorithmic bias, opacity, and lack of accountability, which may violate these constitutional guarantees.[18] AI systems function on the basis of pre-existing datasets and predictive patterns. If the data itself contains social or institutional bias, the resulting decisions may become discriminatory and arbitrary. Unlike human judges, AI systems cannot independently assess fairness, social

[15] Sura Sasidhar Reddy & Mohammad Asadulla Shareef, "Artificial Intelligence in Trial Courts: Promise, Peril, and Prudence", Published on April 16, 2026, https://www.scconline.com/blog/post/2026/04/16/artificial-intelligence-trial-courts-india-analysis/

[16] Delhi High Court, observations on AI and adjudication process, quoted in *SCC Online Blog* (2026).

[17] *Artificial Intelligence and the Indian Constitution: Navigating Legal and Ethical Challenges*, Int'l J. Sci. & Res. (2025).

[18] *The Constitution and Artificial Intelligence: The Future of Rights and Governance in India*, SSRN (2025)

 [ISSN 2581-5369]

realities, or ethical consequences in individual cases.

Another important concern is the "black box" problem associated with AI systems. Many algorithmic models cannot fully explain how a particular conclusion has been reached.[19] Judicial decisions, however, require transparent reasoning because reasons form the basis of appeals, accountability, and public confidence in the judiciary. The absence of explainable reasoning undermines the principles of natural justice and due process embedded within the Constitution.

Ethically, replacing judges with AI would dilute judicial responsibility and human conscience. Courts are expected to uphold constitutional morality and balance competing rights with sensitivity and compassion. AI lacks emotional intelligence and moral reasoning, making it unsuitable for final adjudication. Even the Chief Justice of India has stated that AI should assist judges and not replace them in the judicial process.[20] Therefore, while AI may serve as a technological aid, the constitutional structure and ethical principles of the Indian legal system do not permit AI to replace human judges entirely.

VIII. NEED FOR HUMAN OVERSIGHT AND BALANCED REGULATIONS

Human oversight is essential in the use of Artificial Intelligence (AI) within courts. Although AI can assist in legal research, case management, and document analysis, judicial decision-making requires human reasoning, ethical judgment, and constitutional understanding. AI systems function through data and algorithms and may produce biased or inaccurate outcomes if left unchecked. Therefore, judges must supervise and verify AI-generated outputs to ensure fairness, transparency, and accountability.

India also requires balanced regulations governing AI in the judiciary. A proper legal framework should define the limits of AI usage, ensure data protection, and prohibit the delegation of core judicial functions to machines. AI should remain only an assistive tool and not a substitute for judges.

IX. CONCLUSION

Artificial Intelligence undoubtedly has the potential to modernise the Indian legal system by improving efficiency, reducing delays, and assisting in legal research. However, judicial adjudication is fundamentally a human function rooted in reasoning, ethics, and constitutional values. AI lacks empathy, moral consciousness, and the capacity for nuanced human judgment.

[19] *Implications of Black Box Dilemma in the Indian Legal System* (2025).
[20] *AI should be a tool to help judges, not replace them: Chief Justice of India*, Times of India (Mar. 22, 2026).

Therefore, while technology may support courts in administrative and procedural functions, it cannot replace judges in delivering justice. A balanced approach combining technological innovation with strict human oversight and regulatory safeguards is essential to ensure that efficiency does not undermine fairness, accountability, and public confidence in the judiciary.

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