

From E-Courts To Ai-Courts: Integrating Artificial Intelligence In The Indian Judicial System

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ABSTRACT

The introduction of e-Courts in India to the inescapable arrival of AI-Courts is a history altering innovation for the Indian Judiciary which has long faced criticism for its ponderous justice delivery system with an over 50-million-figure pendency by 2025 and human foibles like fatigue, bias and dissonance that no conscientious judge can ever transcend. The e-Courts project, launched in 2005 and significantly scaled via Phase I (2007-2015) and Phase II (2015-2023) under the National Policy and Action Plan for Implementation of Information and Communication Technology in Indian Judiciary, represented the first digital revolution by computerizing courts; introducing case information system (CIS), e-filing portals, Video Conferencing for virtual hearings (greatly expanded during COVID); e-Pay to pay court fees; and National Judicial Data Grid (NJDG), which finally gave citizens, policymakers real-time visibility into the massive backlog that they could even drill down across districts, high courts, Supreme Court itself. In 2025, over 3,500 court complexes are fully computerized; more than 20 million cases have been e-filed; the Supreme Court's Integrated Case Management System (ICMS) and the e-Courts Services Portal enable a litigant, lawyers, judges to view cause lists, orders and judgments from his/her or their smartphone, something that was impossible to imagine just two decades ago....

Keywords: AI, Judicial System, e-Courts, Transparency, Judicial Data..

1. INTRODUCTION AND EVOLUTION FROM E-COURTS TO AI-COURTS

The transformation described as progressing “From e-Courts to AI-Courts” represents a change from the adoption of ICTs aimed only at automating court operations to utilization of AI tools for improved judicial decision-making and increased access, efficiency and transparency in the justice systems. The AI infiltration into the Indian judicial system has already begun that too in a nascent stage. The Supreme Court Artificial Intelligence Committee (SCAIC) and its portal SUPACE (Supreme Court Portal for Assistance in Court's Efficiency), introduced this year and constantly updated since, rely on natural language processing and machine learning to ingest and summarise thousands of pages of pleadings, help with putting out facts and issues, as well as find precedents from the court's database (comprising lakhs of judgments), cutting research time down from days to minutes when it comes to bail matters or mundane applications. In 2024, the Delhi High Court started using an AI-based transcription and translation tool that provides real-time verbatim transcriptions and translations of oral arguments in English, Hindi, as well as regional languages thus making records searchable and enabling the judges to prepare orders.

Lower courts of Punjab, Haryana and Uttarakhand have started using SUVAS (Supreme court Vidhik Anuvad

Software), an Artificial Intelligence powered translation engine which has translated over 50,000 legacy judgments into 14 scheduled Indian languages enabling linguistic right to while accessing justice vide constitutional mandate of Article 348. The algorithms are quietly triaging cases at the time of filing; defects in complaints are flagged by the e-Courts system; limitation is calculated 99.9 percent accurately and notices auto-generated which means one less arduous task for registry staff. Predictive analytics dashboards, modelled on similar tools like United States (COMPAS) and Estonia, are being piloted in multiple high courts to predict case timelines, track chronic defaulters and assist chief justices to allocate benches more efficiently [1]. This is no longer an experiment, it's a working reality surreptitiously altering the day-to-day of justice delivery [2].

The path to e-Courts in India started with the National e-Governance Plan, of which setting up an e-Committee by the Supreme Court of India and the subsequent rollout stages of the project were looked after by NIC (National Informatics Centre). The aim was to digitise the court records and permit electronic filing of cases, in addition to providing for video conferencing at one court to the other and setting up a Case Information System (CIS) which includes National Judicial Data Grid (NJDG) to show the pending cases in courts throughout India. While these projects did achieve greater efficiency and greater transparency, they were based on automating administrative processes, and not necessarily aimed at

improving the reasoning and the decision-making skills of the actual judges. But constraints - partly as a result of the unevenness of digitisation within the judicial system, impossibility of integration between different judicial data systems and limited opportunities for user interaction - jerked them out of this rudimentary way of working with digital tools [3].

The concept for AI-Courts has materialized. AI-Courts are envisioned to be courts that are equipped with AI technologies and these technologies not only make it possible to automate the court processes but go an extra mile in providing satisfied services including intelligent case management, predictive analytics, NLP (Natural language processing) for legal research and even speech and text recognition for courtroom transcription services, translation, and intelligent interactive chatbots that help in addressing legal aid and e-filing. In this global context, India, facing its own unique challenges, is nonetheless making strides by incorporating AI in judiciary systems. Such a broader view may underscore the promise and perils of using AI in judicial environments.

Technological Foundations of AI-Courts

The applications of AI in Indian judiciary are many-sided. Listing, scheduling, and prioritizing effectively supported by AI for Case Management are essential to clear chronic backlog of cases. Analytic tools can be used to forecast pendencies and the allocation of resources. The use of AI-based legal research tools enhances access to precedents and contributes in fostering more efficient and robust decision-making by judges, without supplanting the discretion of those judges. Parties in a court case, who may have limited access to legal advice such as litigants can receive and derive assistance from AI interfaces that provide e-filing guidance and multilingual translation support, as well make accommodations for disability needs. AI advisory systems relating to sentencing or risk assessment are also candidates for further development, but their deployment should be accompanied by due restraint in view of the constitutional safeguards and to minimize systemic biases [4].

AI-Courts are embedded in the potential of automated decision-making per se. For low stake high volume domains like traffic challans, MACT claims, and check bounce cases under NI Act, semi-automated adjudication is already possible and in fact desirable on many aspects [5]. The Lok Adalats have adjudicated millions of compoundable cases through mediation, and an AI-mediated Online Dispute Resolution (ODR) platform, directly plugged into e-Courts, and using game-theoretic negotiation algorithms, could enable this at scale. Picture a model of a judge who is an AI, and goes through evidence, applies statutory formulae like (motor vehicles act) for example multipliers, computes compensation on transparent lines and generates the draft award to be finally approved by human judge in 95 per cent of MACT cases.

The pilot projects in Gujarat and Rajasthan of rule-based expert systems for Section 138 NI Act cases have already reduced disposal times from years to weeks with error rates being less than fatigued magistrates. Even more

ambitiously, big language models fine-tuned only on Indian statutes, binding Supreme Court precedents and annotated high court decisions could churn out first-draft judgments in bail applications or anticipatory bail, interim maintenance under Section 125 CrPC or eviction suits under rent control laws, drafts that a judge may accept, modify or reject within minutes rather than dictating to an over-burdened stenographer. The Supreme Court's own pilot-testing of AI-generated summaries in Special Leave Petitions (SLPs) indicates that 40% or so of the court's docket can be automated away mostly consisting of routine/repetitive/middling cases, leaving the two-judge benches free to focus more fully on real legal questions involving our constitutional order [6].

The first global experiments which is called the Loomis case in the US, where sentencing was influenced by a COMPAS risk assessment tool and contested on grounds of being are cautionary tales. In India, where caste, religious and gender prejudices already run deep in society, training data scraped from decades of possibly bias-laden judgments could only serve to prop up the historical inequities. A 2024 study of bail orders in Uttar Pradesh found that Muslim accused were less likely to obtain bail under similar fact situations; if those data trains the AI bail judge of tomorrow, systemic bias is digitized and scaled. And exactly what "the right to explanation" in judicial decisions under natural justice becomes, once those decisions emerge from billion-parameter neural networks which are so inscrutable that even those who design them cannot understand their reasoning at all.

On the constitutional and legal fronts also, introduction of AI into judicial delivery much be reconciled with rights, values and principles such as right to fair trial, natural justice, transparency, equity before law, etc. [7].

Use in Cases and Functional Integration in the Indian Judiciary

Artificial Intelligence to help exactly in similar situations and prioritise cases through an automated process has been embraced working of the Indian Judiciary by courts. The solution is not to give up on AI, but rather to create protections that are uniquely Indian. First, every AI implementation should adopt "human in the loop" architecture for all fateful decisions; machine proposes, judge disposes with full revelation of the reasoning chain behind any AI resolution into open court. Second, the training of data need to be screened, curated, anonymized, audited by interdisciplinary committees involving computer scientists as well as sociologists and marginalized-community representatives to remove historical biases. Third, we should require "explainable AI" techniques attention mechanisms, SHAP values and rule-extraction methods so that every algorithmic recommendation comes with a human-readable justification pointing to particular precedents or statutory provisions. Fourth, a new Digital Justice Act or amended Judges (Protection) Act should constitute and specify clearly between which types of cases delegations will never be possible (death penalty references, constitutional matters, public interest litigation having policy-impacts); an Appellate AI Tribunal to hear appeals against algorithmic errors must also be set up. In the end, the

judiciary ought to take home all of its ones and zeroes; no black-box commercial tools imported from global Big Tech but open-source or indigenously developed systems (for instance based on their Bhashini and DIKSHA programmes) hosted at a National Data Centre with code well in sight for bar associations to scrutinise in public.

AI can transform access to justice itself as already embedded in the e-Courts mobile app and the Nyaya Bandhu scheme, chatbots in 22 scheduled languages can start by answering simple questions about filing expenses or procedure; a new generation that uses retrieval-augmented generation across the full corpus of Indian law could hand-hold unrepresented litigants with tailored legal advice, draft complaints, and even surface cases that meet conditions for legal aid, slashing the current 70% of Indians who abstain from seeking justice because it's too expensive and complicated. Computer vision can read stamped documents and can also automatically identify fake patterns in land records, which help to bring hundreds of thousands of property dispute cases to crowded civil courts. Trial recordings (with consent) could be employed for sentiment analysis to indicate judicial bias as well as advocate misbehaviour through vigilance wings [8]. For blockchain-based e-evidence storage, evidence may be hard to tamper with at all by using "tokenization," and "zero-knowledge" proof could allow the medical information of an alleged rape victim to be presented together with a proof that the person possesses it, without revealing the actual victim.

Its economic case is also strong; for instance, McKinsey Global Institute estimates that deep AI adoption across the public sector could contribute 1.5% to India's GDP, with speedier dispute resolution being an input to ease of doing business rankings, the improved rank of which has been a gesture toward India's 2020 result (from 142 in 2014 to 63 in 2020) occurring largely through e-Courts reform. Issues in delay of contracting are a billion dollars cost to the economy every year — there are plans to create algorithmic law courts for commercial disputes based on the Singapore model where AI is used to assist the courts. Having access to justice, at the very least, is a matter of democracy — waiting for decades for maintenance or wages is no longer a public concept of democracy, but one that renders poor people untrusting of courts, and of their place in the republic's dreams.

3.1 Legal Research and Decision Support

Legal research tools with AI-based capabilities such as the Supreme Court Portal for Assistance in Court Efficiency (SUPACE) support judges by summarizing case files, protecting relevant precedents, and automatically constructing outlines using natural language processing (NLP). In use as an experimental tool in criminal cases at the Bombay and Delhi High Courts, SUPACE reads facts devoid of decisions to help judges reason. SUVAS (Supreme Court Vidhik Anuvaad Software) translates judgments into various Indian languages, erasing the language barrier in a multilingual country. National Informatics Centre's Retrieval-augmented generation (RAG) models provide custom search for Supreme Court judges, scaling countrywide soon [9].

Court User Interfaces and Accessibility

AI improves user interfaces such as chat-bots, e-filing assistance, and real-time transcription of oral arguments in Constitution Bench matters. These applications help with the retrieval process in multiple languages and enhance accessibility of documents for people who are disabled, using speech to text and translation features. It often reduces errors and streamlines hearings; this fact was evident in Supreme Court cases from the last year. Nyaay AI and Adalat AI platforms enable procedural assistance, enabling self-service for unrepresented litigants.

Predictive Analytics and Advisory Systems

Predictive analytics predict case outcomes and sentencing trends from previous cases, assist in resource allocation, but do not replace judicial discretion. Though tools like COMPAS are leading to debates, Indian applications stress human control in order to reduce the risks of bias. Test pilots concentrate on civil cases such as motor accident for consistent criteria. Prospects for reducing sentencing disparity, however, remain in the future pending ethical controls.

Challenges in Functional Integration

Despite advantages, black-box nature of AI models such as SUPACE imparts concerns whether precedence priority and error-check is implemented. AI assists, but not replace judgement. Training programs produce a judiciary literate in AI and compliant with the Constitution.

Constitutional, Legal, and Ethical Dimensions

AI in the Indian judiciary has to conform with certain basic constitutional principles as enshrined under Articles 14, 21, and 39A that is of equality before law (Article 14), due process (Article 21), right to privacy under Part III and access to justice. But AI advocates could also infringe a right to a fair trial by a secret algorithm put into effect at the time of prioritising cases or analysing evidence, which might also cause AI to violate natural justice by declining to provide a reasoned decision. Judicial data is also considered as private information of an individual and so when AI processes the data for some purpose without consent then the issue of privacy can be raised as fundamental rights, as was held in Justice K.S. Puttaswamy v. Union of India. Courts have also emphasized the importance of human judgment in these cases; two cases in Delhi High Courts refused to give effect to arguments prepared using artificial intelligence robots, arguing that they are not found to be verified and thus upheld the importance of open courts and transparency.

The dangers of algorithmic bias are severe, as an AI trained in the historical judicial data can be programmed to continue caste, sex, socio economic discrimination that form part of past orders and violate the relational jurisprudence required by Article 14 [10]. Transparency in models such as SUPACE raises clear issues of accountability to whom is wrongdoing to be attributed if the model generates a mistaken output which curtails liberty or property. These risks have been identified and are effectively limited, since it is barred on ethical grounds by Kerala High Court from using generative AI in

judgments with mandatory human verification to ensure such checks. India does not have a standalone AI judiciary law; it is forced to depend on the Digital Personal Data Protection Act, 2023 for data procedures but it does not cover judicial AI specifics such as those provided by predictive policing or automated transcription privacy. Both Supreme Court AI Committees and High Courts policies have regulations around audit, preference for open-sourcing, “human-in-the-loop” protocols to ensure explainability and bias mitigation. Procurement regulations should mandate validation testing, and due process standards can be used by litigants to challenge AI-driven decisions.

There should be AI ethics committees for ongoing monitoring, training and public reporting of tool usage, with members from the Bar as well as Bench along with SC’s e-Committee. The pioneering Kerala disruptive policy is an instance of co-governance that goes so far as to ban unapproved platforms and restrict the use of AI to administrative assistant [11]. Recommended national standard-setting policies, consistent with the constitutional case law, aiming to protect judicial independence. To reap the efficiency benefits of AI, a correct strategy is required along with direct pilots utilizing fairness measures, educating judges about AI, and allowing for appeals against errors made by algorithms. So that technology can improve, rather than hinder, the delivery of constitutional justice [12].

Conclusion and Future Prospects

In this context, AI in Judiciary can be regarded as a paradigm shift from e-Courts (digitization) to AI-Courts aimed at making Just and efficient justice delivery from a dream to reality. It is not merely a technical issue but a systemic/constitutional issue. AI has the potential to drastically cut down on case backlogs, streamline case management with predictive analytics, enhance legal research and decision-making through powerful NLP systems, and introduce additional use cases through multilingual and accessible interfaces. However, AI applications in the judiciary must be intricately China WhatsApp Number List calibrated to address some essential constitutional rights like the right to a fair trial and compliance with due-process rights, equality before the law etc. The ethical considerations of algorithmic bias, transparency and accountability must be counter-balanced through strong legal frameworks, human control and institutional governance arrangements so that AI is an assistant to rather than a replacement for judicial discretion.

The promise of AI-Courts is to create a smarter and more responsive, accessible, and democratic judiciary in terms of constitutional ethos. AI, when applied well, can create greater equality in the administration of justice by empowering legislators, judges and users of the courts

with real information at the right time, reducing backlogs in courts, and ensuring uniformity of court processes. It requires transparency in governance, strict ethical codes and a determination for human-centered justice. Thus, the shift from e-Courts to ‘AI-Courts’ is an addition to the mix of innovation and constitutionalism in India’s pursuit of achieving affordable and effective access to justice.

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