THE ROLE OF ARTIFICIAL INTELLIGENCE IN INDIAN COURTS

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ABSTRACT

The escalating backlog of cases within the Indian legal system presents a significant challenge, with countless cases pending resolution across various levels of the judiciary. This urgent matter, coupled with the growing responsibilities of judges, has led to delayed justice, prompting concerns regarding the efficiency of the judicial framework. This paper investigates the transformative capabilities of Artificial Intelligence (AI) and technology in tackling the intricacies of the Indian judiciary. Artificial Intelligence (AI) can facilitate quicker case resolutions by optimizing legal procedures, automating monotonous tasks, and enhancing decision-making processes. This discourse delves into the interplay between technology and the judiciary, highlighting how Artificial Intelligence (AI) can be leveraged in courts to alleviate judges' workloads, decrease the time required to settle cases, and bolster the efficacy of the Indian legal system.

Keywords: Judiciary, machine intelligence, innovation, magistrates, Indian legal framework

Introduction:

Machine Intelligence (MI) has made its mark in the era of swiftly evolving technological breakthroughs with remarkable consciousness. It has already proven its worth across various sectors, such as healthcare by facilitating treatments during operations, transportation through autonomous vehicles, marketing by monitoring consumer buying habits, and beyond [1]. Thus, incorporating Machine Intelligence (MI) in court systems can significantly enhance long-term efficiency within the justice framework. Intelligent machines have the potential to transform the modalities of civil and criminal litigation. They will support magistrates and attorneys by streamlining the duration required to accomplish multiple tasks at various phases of a trial. India finds itself at a crucial juncture concerning the establishment of data protection regulations, which will greatly influence the functionality of MI in the country. Electronic correspondence, virtual meetings, and numerous other digital communication platforms are immensely effective for sharing critical information across distances while fostering better decision-making. These technologies are increasingly being integrated into legal and public sectors, aside from business entities. Moreover, the Indian government is currently advocating for digital transformation as a means to bolster national growth and advance the 'Digital India' initiative [2]. Concurrently, citizens in India are growing accustomed to enhanced digital services from the government, given that many are employed by private enterprises. Furthermore, this suggests the necessity for more astute approaches in all domains, including public services such as justice administration. The assimilation of Machine Intelligence into judicial management would unveil greater insights, enhance the efficacy of the legal framework, and alleviate some of the burdens from officials.

1. Definition of Machine Intelligence:

The idea of MI has been around since the 1950s. The expression Machine Intelligence was coined by John McCarthy in 1956, an American computer scientist. John McCarthy characterized Machine Intelligence as “the science and engineering of creating intelligent machines” [3]. Other definitions can be explored to grasp the essence of Machine Intelligence: Machine intelligence is the capability of a digital computer or robot governed by a computer to execute tasks typically associated with intelligent beings. The phrase is often related to the endeavor of constructing systems endowed with cognitive functions akin to those of humans, including reasoning, deriving meaning, generalizing, or learning from experiences [4].

Machine Intelligence is concerned with the theory and development of computing systems capable of performing functions that generally necessitate human intelligence, such as visual interpretation, voice recognition, decision-making, and language translation [5]. Machine Intelligence constitutes a branch of computer science that focuses on emulating intelligent behavior in machines [6]. It represents a category of technological innovation aimed at enabling machines to operate intelligently, mirroring human cognitive processes [7]. In summation, Machine Intelligence (MI) is a rapidly evolving field within computer science. The term Machine Intelligence (MI) refers to the advancements in computing systems that can undertake tasks traditionally requiring human intellect. Such tasks encompass reasoning, understanding spoken language, problem-solving, learning, visual interpretation, and voice recognition. The central aim of Machine Intelligence (MI) is to develop machines or systems that can duplicate human cognitive functions, including data analysis, decision-making, adaptability to new information, and executing autonomous tasks. Machine intelligence (MI) includes numerous subdomains, such as natural language processing, machine learning, computer vision, and expert systems.

2. Aims of the Document –

- To explore the necessity of Artificial Intelligence within Indian judiciary.
- To evaluate the recent advancements of Artificial Intelligence in the Indian legal arena.
- To investigate the function of Artificial Intelligence in courts.
- To pinpoint the hurdles related to the adoption of Artificial Intelligence in Indian judiciary.

3. The Importance of Artificial Intelligence (AI) in Indian Courts

In every country, the judiciary plays a vital role in the administration of justice. Yet, in the context of the Indian legal framework, the situation is dire, as the enormous population results in a continuous influx of cases, which escalates the strain on our judicial system. Due to a deficit of judges, millions of cases remain unresolved across all Indian courts, from lower tribunals to the supreme courts, and various initiatives are being undertaken to tackle this predicament. These include promoting Alternative Dispute Resolution (ADR) practices and abolishing superfluous laws, but how to leverage the newly unveiled domain of artificial

intelligence to remedy this dilemma remains uncertain [8]. The Indian judiciary displays a limited degree of technological integration, with most tasks performed manually, which ultimately causes inefficiencies and delayed justice delivery. Therefore, alongside conventional solutions, innovative strategies are essential to restore the efficacy and efficiency of the justice delivery system and ensure its long-term viability. Implementing Artificial Intelligence in courts presents an excellent remedy to diminish case backlog and enhance the expedience of the justice delivery system.

4. Instances of Recent Advancements in Artificial Intelligence within Indian Legal Framework

(i) Supreme Court Vidhik Anuvaad Software (SUVAS) - An official application grounded in Artificial Intelligence (AI) has been introduced by the Supreme Court of India to translate legal documents and orders composed in English into nine regional languages. This marks the judiciary's inaugural step into Artificial Intelligence [9].

(ii) Supreme Court Portal for Enhancing Court Efficiency (SUPACE)- Recently initiated by the Supreme Court of India, this tool compiles relevant facts and laws, making them accessible to judges. It will generate outcomes tailored to the specific needs of the case and the judge's cognitive style [10].

(iii) The Official Multilingual Mobile Application of the Supreme Court of India- In collaboration with the National Informatics Centre, our country’s apex court has unveiled an app that allows citizens to authentically access cases, judgments, significant circulars, bulletin boards, and a multitude of other essential information with a simple click [11].

(iv) E-Courts- One of the most notable improvements driven by judicial reforms is the online availability of all pertinent information related to court orders and judgments at no cost. Establishing E-Courts promises rapid case resolution, streamlined record keeping, enhanced reliability of documented evidence, and increased transparency in court operations [12].

(v) An Artificial Intelligence System Developed at IIT Kharagpur to Interpret Court Orders- Researchers at IIT Kharagpur have devised an AI-supported technology

capable of reading court orders and judgments. It also employs machine learning to detect violated laws [13].

(vi) **Kira Systems by Cyril Amarchand Mangaldas-** Through a partnership with the Canadian AI assistant Kira Systems, the Indian firm Cyril Amarchand Mangaldas is now applying AI for contract analysis and assessment [14].

How Artificial Intelligence Can Assist the Courts

Artificial Intelligence (AI) holds the potential to provide numerous advantages to judges by enhancing the overall judicial procedure, boosting efficiency and accuracy, and improving overall effectiveness. Here are several ways judges can benefit from Artificial Intelligence (AI):

- Legal Research and Examination: AI systems can swiftly scrutinize vast repositories of legal precedents, statutes, and case law to furnish judges with pertinent information [15]. This can dramatically expedite the legal research process, ensuring judges have access to comprehensive and current information while making judgments [16].

- Speeding Up Justice Delivery: In India, it is noted that the adjudication of criminal and civil cases often spans years. This inevitably results in ineffective and delayed justice. With AI implementation, the handling of more cases at an accelerated pace is possible, enabling quicker justice for citizens [17]. This leads to an improved experience for citizens, as they spend less time awaiting decisions that significantly affect their lives and enterprises.

5. **Artificial Intelligence (AI) through Natural Language Processing (NLP):** NLP innovations empower computers to understand and interpret human language effectively. Judges can utilize Natural Language Processing (NLP) for various tasks such as condensing case documents, evaluating legal arguments, and retrieving pertinent information from verbal or written statements. For example, ROSS Intelligence is an AI-powered legal research platform that harnesses Natural Language Processing (NLP) to grasp inquiries posed in natural language and provide pertinent legal insights [21].

6. Remote Hearings and Virtual Courtrooms: Artificial Intelligence (AI) technologies facilitate secure video conferencing, immediate transcription, and language interpretation, among other functionalities that enhance the operation of virtual courtrooms and remote

hearings. This becomes especially significant in situations necessitating remote adjudications [22].

7. Assistance Systems for Decision-Making: Artificial Intelligence (AI) systems can function as supportive tools for judges by supplying relevant information, precedents, and legal evaluations to assist in their decision-making processes [23]. However, it is fundamental to emphasize that Artificial Intelligence (AI) is merely a supplementary instrument, with the ultimate decision remaining in the judge's hands across all cases. Challenges The integration of Artificial Intelligence into the judicial framework presents both prospects and hurdles. While Artificial Intelligence (AI) has the capability to enhance efficiency and decision-making, several challenges must be addressed. Below are the challenges related to implementing Artificial Intelligence (AI) in the judiciary:

    1) **Issues of Bias and Equity:** AI systems might unintentionally perpetuate or exacerbate biases embedded in historical legal data, raising concerns regarding fairness and bias. AI algorithms could result in skewed results, leading to unjust or discriminatory verdicts and infringement of fundamental rights [24].

    2) **Lack of Transparency:** Numerous AI algorithms operate as "black boxes," making it challenging for humans to decipher their decision-making processes. Concerns about accountability may arise from the opacity of AI systems. This lack of transparency could directly impact litigants and cause difficulties for judges [25].

    3) **Risks to Information Security and Privacy:** Securing and safeguarding sensitive legal data is notably challenging, especially as malicious entities may exploit vulnerabilities within AI systems.

    4) **High Resource Demands and Expenses:** The development, implementation, and upkeep of AI systems can incur substantial costs. For AI solutions to be broadly and equitably embraced within the legal environment, their cost-effectiveness and scalability need to be meticulously assessed.

    5) **Technical Constraints and Mistakes:** Artificial Intelligence (AI) systems are not infallible and can be prone to errors. It’s possible that the AI system may miss legal updates or misinterpret legal texts. Additionally, like all technology, Artificial

Intelligence (AI) may have bugs or glitches that result in erroneous judgments or forecasts.

6) **Reception by Judges:** The adoption of Artificial Intelligence (AI) within legal proceedings is also shaped by the willingness or reluctance of judges to accept it. Younger judges are often more inclined to embrace AI technology.

In contrast, senior judges may think that AI will not aid them in case management and are therefore resistant to its acceptance. Some judges believe it is not appropriate for impersonal robots to govern litigation matters that necessitate human interaction. They prefer to invest considerable time in making their own judgments rather than relying on AI technology for automatic decision-making [26]. Ethical Principles for Artificial Intelligence in Legal Practice:[27]

1) **Fundamental Rights:** Prioritize essential rights when creating and deploying AI services and tools, ensuring adherence to critical principles like privacy, equal treatment, and the right to a fair trial. This means that the design and application of AI technologies should align with and protect these fundamental rights at all stages.

2) **Equal Treatment:** Ensure equitable treatment by averting discrimination among individuals and groups in algorithm usage. The data utilized in algorithms may harbor biases, and the algorithms themselves might unknowingly incorporate prejudices. It’s paramount to confront both data and algorithmic biases to guarantee fair and unbiased outcomes.

3) **Data Protection:** Guarantee data security in judicial processing and data handling by using verified sources and immutable data. Implement cross-disciplinary models within a secure tech framework to bolster the system's overall integrity.

8. **Clarity:** Methods of data processing should be transparent and comprehensible, including options for external evaluations. Legal standards now require clarity. Algorithm users must publicly reveal their selections, information, and premises in a thorough, prompt, and suitable manner, guaranteeing that they are available to outside parties. This detailed and timely revelation facilitates an examination of the choices, information, rationale, and premises, thus providing solid legal safeguards and allowing judicial examination by the

courts. Conclusion In summary, the incorporation of Artificial Intelligence (AI) within the judicial system, especially to tackle the backlog of cases, is becoming increasingly essential in contemporary legal structures. AI possesses the ability to enhance overall effectiveness, reduce congestion, and accelerate legal processes. Although the Indian Government has already rolled out e-courts, their scope must expand to manage the current caseload. With improved case and courtroom oversight, electronic courts present a more efficient and time-conserving avenue for administering justice. Enhanced case administration, data-informed insights for decision-making, and streamlined document scrutiny are a few benefits of integrating AI in the courtroom. Nonetheless, challenges such as biases, data privacy, and the need for transparency must be thoroughly addressed. To create a fair, efficient, and technologically advanced justice system that meets the requirements of our evolving legal context, it's crucial to balance harnessing AI's potential advantages and mitigating its drawbacks. The application of Artificial Intelligence across different sectors and its prospective use in the legal arena would aid judges and lawyers, who are considered vital components of the justice delivery network. It is evident that no technology, regardless of its advancement, can entirely substitute a human judge. However, they could assist judges in the decision-making process and ensure that managing a large volume of cases does not undermine justice, ultimately helping to shorten the typical duration of a trial. Time savings would logically translate to improved efficiency in resolving cases, which in turn would contribute to alleviating the backlog of pending cases within the legal framework. By achieving this, the commendable aim of providing the public with efficient and enduring justice will be realized.

Conclusion

The integration of Artificial Intelligence into the Indian judiciary represents an important step toward addressing the persistent issue of case backlogs and delayed justice. While AI cannot replace the discernment and fairness of human judges, it can significantly enhance efficiency by streamlining processes, reducing routine burdens, and facilitating quicker access to legal resources.

At the same time, concerns related to bias, transparency, and data security must be carefully managed to ensure that technological advancement does not compromise fundamental rights. If implemented with accountability and foresight, AI can serve as a supportive tool that

strengthens judicial capacity, promotes timely justice, and restores public confidence in the legal system.

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