Concept Of Artificial Intelligence In Criminal Justice Administration

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ARTICLE INFO	ABSTRACT
	Humans get tired working, but technology makes it easier. Over the previous few decades, technology has outperformed people in every industry, including safety, finance, health care, and transportation. AI is a fast-growing technology that might transform several industries, including law enforcement. Document review, case management, and other regular duties can be automated by AI. Large amounts of data can be analyzed to discover trends and generate forecasts to aid decision-making. Law enforcement performs risk assessment, predictive policing, and sentencing. Despite its benefits, technology has created new obstacles for legal systems trying to restrict its use and protect individual rights. Artificial intelligence and machine learning in criminal justice provide issues as legal systems learn how they affect legal decision-making and their limitations. AI has great potential to improve law enforcement efficiency and fairness. Careful consideration and regulation are needed to use these technologies morally and not propagate biases or hurt underprivileged communities **Keywords:** Criminal Justice System, Law enforcement agencies, Judiciary, Artificial Intelligence, Law Firms, Technology.

1. Introduction

It is a well-known fact that the Indian legal system remains unreformed because of case backlogs, insufficient judges and staff, extended hearing schedules, and protracted court processes. The consequences of these issues are the delay of justice, which is equivalent to its negation. Integration of Artificial Intelligence (AI) into the justice administration system would increase the effectiveness of law enforcement and the judicial systems. Former Chief Justice of India S.A. Bobde[1] stated that the court system could potentially benefit from the application of artificial intelligence. The importance of AI in maximising expeditious justice and minimising avoidable delays is emphasised. In conjunction with the concept of e-courts, Artificial Intelligence is anticipated to accomplish the objective of integrating Information and Communication Technologies (ICT) into the judicial system. The article explores the application of AI within the legal domain and the measures implemented by state governments to modernise the system. By analysing various court decisions, it informs readers of the benefits and drawbacks of AI in the judicial system and stresses the significance of integrating AI into the legal system[2].

1.1 Artificial Intelligence
John McCarthy, known as the founder of AI, used the phrase AI to refer to "the science and engineering of making intelligent machines." AI theoretically involves the computational and processing aspects of laborious work using machines, without requiring direct human involvement. AI algorithms mimic human intelligence by engaging in planning, problem-solving, and knowledge representation. The systems gather user preferences by analyzing their images, behaviors, trends, and impressions. AI is utilized in several sectors such as agriculture, industry, education, finance, communication, and healthcare. Furthermore, AI can become a permanent fixture in the criminal justice system, enhancing investigation techniques and crime forecasting.

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[1] AI can improve judicial system's efficiency — full text of CJI Bobde's Constitution Day speech (ThePrint, 27 November 2019)
[2]Darrell West and John Allen, 'How artificial intelligence is transforming the world' (Brookings, 24 April 2018)

The next section delves into the key areas where AI can be utilized in real-world situations to enhance the criminal justice system in India.

1.2 Criminal Justice System

The purpose of any nation's criminal justice system is to punish offenders, keep the peace, and enforce the law. Protecting the rights of victims and facilitating their pursuit of redress is the fundamental function of the legal system.[1]The Indian Penal Code (IPC), 1860 is essential to India's criminal justice system. All the rules and regulations regarding criminal conditioning in the country are outlined in this statute. Punishing offenders and providing victims with fair treatment are the dual functions of the law enforcement system. All of a person's legal rights are protected, and those who are believed to have been subjected to criminal conditioning are dealt equitably, according to the system. [2].India's system for maintaining order includes the police, the judiciary, and the correctional system. Law enforcement officers are responsible for investigating and apprehending wrongdoers, as well as serving as the initial contact for individuals affected by criminal activities. The rehabilitation system aims to help criminals avoid repeating offenses, while the legal system administers justice through trials and penalties [3].

1.3 Components of the law enforcement system

The major function of the law enforcement system is to prevent and control crime through activities such as arrest, legal proceedings, verdicts, sentencing, rehabilitation, and reparative measures. The legislature enacts laws to establish fundamental principles. The essential elements of the criminal justice system include law enforcement, judicial system, and correctional facilities. They are regulated by criminal regulations, which strive to safeguard society from wrongdoers and offenders. The legislative branch is essential in the enforcement system as it establishes all legislative actions. The judiciary interprets laws, whereas the police enforce them. They are interconnected and impact each other's actions [4].Police are responsible for law enforcement, crime investigation, and apprehending criminals. The bar is responsible for ensuring the fairness of a trial and the proper administration of justice. The correctional system focuses on rehabilitating convicts and reducing repeat offenses. Two key regulations that govern the handling of criminal matters in our country are the Criminal Procedure Code and the IPC [5].

2. Application of Artificial Intelligence in the legal industry

Below are the primary areas where AI is currently being utilized or has potential applications in the near future.

2.1 Use of AI by law enforcement agencies

AI has the potential to greatly improve the efficiency of law enforcement in various ways. This entails using biometric data, such as fingerprints, blood type, facial traits, speech patterns, and fingerprints, to help in investigations and identifying criminals. When it comes to carrying out investigation activities, artificial intelligence technology can be a huge help. There is a lower chance of officials making errors in procedures. Violations, techniques, and information from comparable incidents in different locations can be stored in a digital database powered by AI. ABHED, an advanced face recognition system created by Staqu technologies in collaboration with the Punjab and Rajasthan Police, Odisha Police has integrated AI-driven tools for analyzing crime data, while Uttar Pradesh Police has introduced the TRINETRA face recognition application. The government of Andhra Pradesh has launched the E-Pragati database, while the Delhi Police has partnered with IIT Delhi to set up an AI center [6]

By utilizing forensic analysis, an AI system can detect biological components found at a crime scene. Hair, semen, fingerprints, blood, saliva, urine, and more are all part of the materials. Cognitive data analytics, "AI, and the ability to identify and extract similarity patterns are the tools used to do this. The combination of big data and AI programming allows for the study of spatial and temporal data, which can help identify crime hotspots. Similarly, a surge in larceny in a certain location can indicate potential for like incidents in other locations. The evidence gathered at the crime scene can offer insight into the previous usage of the weapon by utilizing an AI-powered database. AI systems can assist in identifying distinctive patterns in gunshot analysis. This technology is utilized to identify bullet trajectories in order to ascertain the kind of firearms involved and assess the likelihood of law enforcement involvement in the inquiry [7].

With the use of AI, jail officials can keep tabs on any criminal behavior happening on or around prison property. Within prisons, artificial intelligence (AI) surveillance devices and drone technology can be utilized to swiftly and effectively track illegal activities. An artificial intelligence (AI) video analytics platform called JARVIS was launched by the UP Govt in partnership with Staqu technologies. Its primary function is to inspect video recorded in correctional facilities.

2.2 Use of AI by the judicial system

In India, the principle of stare decisis is substantial in influencing judicial rulings. It necessitates following the rulings of superior courts as a guide for making decisions. An AI-driven database containing a replica of judgments might simplify this arduous effort. AI technology can accurately record court statements without

any human errors. It enables transparency in carrying out trials. Manually carrying out processes such as issuing summons/notices, arranging witness appearances, scheduling next hearing dates, etc. causes unnecessary delays. An AI system can decrease latencies and streamline the testing procedure. AI may summarize legal documents, making them more precise and allowing judges to issue interim orders promptly [8].

When presiding over criminal proceedings, a judge must make choices such as granting bail to the accused. AI-powered machines simplify decision-making processes, assisting courts in reaching case verdicts. An AI tool commonly used in US courts is the Public Safety Assessment (PSA) created by the Arnold Foundation.

The Supreme Court has introduced SUVAS, an AI-powered translation tool, to translate judicial documents written in English into nine regional languages. It will make the court's legal documents & proceedings easier to understand for those who aren't professionals in the field. A new official multilingual mobile app has been launched by the Supreme Court and the National Informatics Centre. This app will provide litigants, lawyers, and the general public with instant access to information regarding the status of court processes, circulars, reports, and more. You may access the software on iOS in six different regional languages in addition to English and Hindi. The Supreme Court's SUPACE portal is useful for evaluating large amounts of case filing data, which justices can use to better understand the problems and facts at play in new cases [9].

3. Artificial Intelligence: Boon or Bane

The ongoing discussion revolves around whether AI is beneficial or harmful. The main concept behind using AI in the legal field and everyday activities is to streamline and simplify procedures. AI is likely to replace monotonous employment and human labor involved in addressing these repetitive duties in the near future. AI will enhance the precision and attention of lawyers and law companies within the legal system. Utilizing AI can enhance efficiency and expedite the delivery of justice by saving time. It can lead to increased productivity and higher outputs, enabling legal professionals and legal firms to complete more tasks in a shorter period. It can streamline repetitive tasks such as generating standard-form contracts and checking for errors [10].

However, AI's application in the legal sector is restricted due to machines' deficiency in originality, creativity, and innovation. AI is unable to provide logical judgments on new legal matters since it cannot match the reasoning abilities of the human brain. Utilizing technology always carries the inherent danger of a data breach. Confidentiality between clients and attorneys should never be violated, especially when dealing with sensitive legal material. Unemployment in the legal industry is likely to rise as a result of AI's increasing use. [11].

4. The Future of Artificial Intelligence in Criminal Justice

The integration of AI in the criminal justice system is expected to continue without deceleration. AI is expected to significantly influence human interactions with the criminal justice system in the 21st century by enhancing current technologies and introducing novel ones.

Progress in automated object and activity identification using drones and satellite images will greatly enhance law enforcement's capacity to identify and prevent crime by analyzing movement and patterns. Facial recognition technology will be integrated to identify suspects across many places and cameras, aiding detectives in suspect identification. Drones and robotics technology can offer law enforcement real-time context and situational awareness when responding to crimes[12].

Contemporary citizens share a lot of personal information on social media, giving criminal justice professionals access to more data about us than they have about previous generations. With the help of AI, this data will aid law enforcement in identifying crimes that may have otherwise gone unnoticed.

5. Advantages Of Introducing Artificial Intelligence

Expeditious work: Conventional approaches to identifying and stopping corporate misconduct required ongoing monitoring, thorough record-keeping, and examination of gathered information. By instructing computers on the specific goal of surveillance and directing them to concentrate solely on relevant actions, AI allows for the automation of tasks. Through the use of video content analytical tools, tracking financial transactions, and keeping tabs on suspects and their families, artificial intelligence in bribery surveillance can identify those who are involved in the exchange of gifts, money, or other assets.

Relevant extract with higher level of accuracy: AI doing data analytics or mining increases the report's correctness due to reduced human mistake and reliance on intelligent objective input for technical computations. AI has replaced traditional methods with machine learning, in which an advanced algorithm processes the input to provide a relevant output. Before, conducting data analysis from the beginning necessitated significant efforts to interpret the data, review films, analyze audio, and compile a conclusive report of main discoveries [13].

Predictions facilitating prevention: AI utilizes accurate data analytics and behavioural studies to analyze all pertinent information related to the specific crime, such as confirming the crime, the crime's antecedent and suspects, frequent and recurring circumstances, and aggravating factors, to generate the final report. This report possesses enhanced predictive capabilities, allowing legal authorities greater flexibility in detecting suspicious activities, implementing preventive steps, and eventually preventing the occurrence of the crime.

work at lower costs: By analyzing the backgrounds of suspects and offenses, decreasing the involvement of human intermediaries in the crime detection and prevention process will lower costs. Additionally, it offers simple data preparation for analysis in automated and supervised models.

Storage effective: AI offers extensive storage capacity compared to other software within its own area. It offers unlimited and cost-effective data storage and enables quick access to records at any time without restrictions. No human custodian is there to hinder entry. Furthermore, a physical location for record-keeping is unnecessary in the field of artificial intelligence [14].

Unbiased decisions: An AI system with objective input governed by a computed algorithm should not show bias towards any gender, ethnicity, religion, location, social class, etc. This would guarantee an impartial and factually accurate report generated after an objective review.

6. Drawbacks of Introducing Artificial Intelligence

Lesser intelligence: Homo sapiens are individuals who possess advanced cognitive abilities and exceptional intelligence. However, AI is a machine intelligence technology that possesses advanced capabilities in machine learning and problem-solving, with proficient operational skills. Being a substitute for a human remains a perilous endeavour. Artificial Intelligence is distinguished by its cognitive abilities in problem-solving and self-learning among technological advancements. Yet, it fails to reach the level of human intellect. While machines can assist humans with rational tasks, they cannot fully replace human capabilities.

Qualitative challenges: Law enforcement agencies' use of AI for prediction, detection, and prevention has the potential to lower job quality and cause major errors. This AI was developed for logistical use cases where a predetermined input is expected to yield a predetermined output. Because it lacks human logic, AI can't handle wholly new and unexpected situations [15].

Higher cost of deployment and maintenance: Artificial intelligence is an expensive investment due to its advanced technological nature. The intermediary cost is exorbitant. Employing individuals or technology requires significant investment. This includes costs associated with hiring personnel, purchasing data storage, and implementing data analysis mechanisms, all of which result in expenses for the organization. As the quality of the AI improves, the cost will increase. The upfront cost of implementing AI is significant for analyzing small amounts of data, but for large volumes of data, the cost of AI can be offset by reducing the requirement for human labor.

Reducing employment opportunities: AI software operates with machines and technology, minimizing human involvement, which decreases employment and ultimately cuts costs. Introducing AI may reduce the need for human involvement in the enforcement mechanism system. It poses a risk of raising the unemployment rate in a country with an abundance of human resources. Utilizing AI in the judicial system could lead to a decrease in the value of human assets.

Cyber threats: AI faces technological limitations and is vulnerable to manipulation, theft, or sabotage by authorized entities or through unauthorized access due to the agency's negligence. Data theft or modification might result in criminal activities, extortion, or slander. It is crucial to maintain records of AI-driven data analysis for a specific case to protect the confidentiality of individuals and corporations. In sensitive situations, some records may contain confidential information related to the state, especially when the corporation is involved in security, defence, or other state-related businesses. Any mistakes made by surveillance or custodian agencies could have a negative impact on the state's interests and security. One drawback of maintaining records is the constant need for a stringent protection mechanism[16].

Privacy concern: An invasion of personal privacy and freedom might result from the use of AI for surveillance purposes in the fight against crime. Following a suspect's digital footprint is the principal goal of data mining and analysis. A person's right to privacy can be invaded if they are suspected of being monitored without their knowledge.

7. Legal Position of AI in Criminal justice

India currently lacks formal legislation to regulate AI. The "Ministry of Electronics and Information Technology (MEITY)" is the governing body responsible for developing and implementing AI-related plans. It has established committees to provide a policy framework for AI.

The Niti Ayog has formulated a comprehensive set of seven ethical principles for AI2az. These principles encompass "safety and reliability, fairness, inclusivity and non-discrimination, privacy and security, transparency, accountability, and the preservation and promotion of good human values". The Information Technology Act, together with its associated guidelines, serves as the main legislation for data protection in India. In addition, the Ministry of Electronics and Information Technology (MEITY) has introduced the Digital Personal Data Protection Bill, which is currently pending formal passage. In the case of Justice K.S. Puttaswamy (Retd.) and Another v. Union of India and Others (2017), the Supreme Court of India established that the right to privacy is a basic right protected by the Indian Constitution. If it is determined that this judgement violates the right to privacy, it could potentially be utilised as grounds to contest the utilisation of AI in the criminal court system.

The Supreme Court of India has announced the integration of advanced technologies such as AI and ML. The inspiration behind it was the modernization of the Indian judiciary through the empowerment of courts using ICT. The pan-India Initiative is overseen and backed by the Department of Justice, which falls under the "Ministry of Law and Justice". The Supreme Court has established an AI board to create three AI portals, namely SUPACE, SUVAS, and LIMBS.

Conclusion

The topic of law and technology is rapidly evolving due to the emergence of new technologies and the corresponding adaptations in legal systems. No one can deny the pervasiveness of technology in our daily lives. The domains of healthcare, banking, security, and transportation have all benefited greatly from the use of machine learning and AI algorithms.

Law enforcement agencies may make good use of AI. Justice for victims can be achieved through improved crime prediction, prevention, and investigation made possible by incorporating AI into the criminal justice system.

AI systems can evaluate data to deploy law enforcement resources more efficiently, thereby preventing crime proactively. Moreover, AI can support law enforcement and aid in mitigating biases and discrepancies. This will also decrease the backlog in conventional judicial systems. Furthermore, by aiding lawyers and judges in guaranteeing impartial and open investigations, one plays a crucial function in the legal sector.

However, it cannot substitute for lawyers and judges due to its absence of emotional intelligence. Before AI is incorporated into India's legal system, concerns regarding possible infringements of the right to privacy guaranteed by the Indian Constitution must be addressed. Artificial intelligence systems require massive amounts of data to function. At this time, there is no codified system for collecting and preserving information for use in court proceedings. Legal officers and lawyers must have sufficient training before incorporating artificial intelligence into the judicial system. Furthermore, there are still questions about how artificial intelligence may affect human privacy and fundamental rights.

While the utilization of AI in criminal justice systems has significant promise, there are also accompanying problems that must be resolved. The potential of AI in this subject is extensive. Its potential benefits should not be dismissed. It is crucial to control the use of it to prevent abuses, safeguard individual rights, and ensure responsible and ethical usage. Thus, instead of employing a trial-and-error approach, the implementation of artificial intelligence should rely on evidence.

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