

ARTIFICIAL INTELLIGENCE AND CRIMINAL JUSTICE SYSTEM IN INDIA

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Abstract

The integration of Artificial Intelligence (AI) into the criminal justice system in India represents a significant paradigm shift with far-reaching implications. This article explores the multifaceted intersection of AI and the criminal justice system in the Indian context, investigating the potential benefits and challenges associated with the deployment of AI technologies. The article begins by providing an overview of the key areas where AI applications can enhance efficiency, accuracy, and fairness and identifies current state of the criminal justice system in India. It delves into the utilization of AI in crime prevention, investigation, and adjudication processes, highlighting the promising outcomes and improvements witnessed in these domains. With every progressing day Artificial Intelligence (AI) is getting a grip in every sphere of our daily life. In such an environment, Criminal Justice System, which is an ever-expanding domain trying to cater to the contemporary need of the society to make it a safer place to live, it tries to adopt every possible method and technique to accomplish this objective. AI too has been adopted in the functioning of the criminal justice system to adopt more scientific and sophisticated approach to crime prevention and crime detection. Artificial intelligence (AI) has been making waves across various industries worldwide, and the criminal justice system is no exception. In this article, we'll explore the role of AI in the criminal justice system in India and the benefits it can bring. Drawing on best practices, the article offers insights into the various models of AI integration in criminal justice systems globally, considering their applicability within the Indian socio-legal framework. It concludes by highlighting the importance of an ongoing dialogue between technologists, legal experts, and policymakers to strike a balance between harnessing the transformative potential of AI and safeguarding fundamental rights within the Indian criminal justice context.

Keywords: Investigation, prosecution, justice, prison, proceedings

Introduction

Technological improvement stands out for its potential to revolutionize civilization in the vast domain of scientific advancements. AI has invaded many facets of our life, from self-driving cars to virtual personal assistants, drastically affecting how we work, communicate, and even perceive reality. As we approach the dawn of a new century, it is critical to investigate how artificial intelligence (AI) can affect the future of the criminal justice system—a world fraught with complexities, injustices, and the pursuit of justice.

A judicial system, in which prejudices are minimized and resources are more efficiently distributed, is to be considered in administration of justice system. AI has the ability to bring this vision to life, providing a more equitable and effective administration of justice. However, such revolutionary potential necessitates careful study, stringent laws, and ethical safeguards to avoid unforeseen outcomes. One of the most significant ways AI can transform the criminal justice system is through its ability to reduce human prejudices. Human judges and law enforcement agents are all prone to bias, whether conscious or unconscious. AI's ability to analyse massive volumes of data and identify patterns can assist in detecting and correcting systemic biases that have long plagued the system. AI can establish a more level playing field for all individuals, regardless of race, gender, or socio-economic background, by basing choices on objective data rather than subjective beliefs. Furthermore, AI can improve the criminal justice system's efficiency by streamlining operations, optimizing resource allocation, and providing predictive analytics. Time-consuming procedures like document analysis and data processing can be automated, allowing legal practitioners to concentrate on more important areas of their work. Machine learning algorithms can help law enforcement recognize patterns and trends in criminal behavior, allowing them to prevent crimes before they happen. By integrating AI technologies, law enforcement agencies may strategically allocate resources, resulting in faster reaction times and more successful crime prevention initiatives.

While the potential benefits of AI in the criminal justice system are enormous, they must be approached with prudence. To avoid the deterioration of rights and freedoms and the reinforcement of existing biases, the use of AI must be directed by explicit ethical frameworks and strong laws. Transparency and accountability should be central to the use of AI in the legal system. Decision-making algorithms should be auditable, and systems for detecting and correcting algorithmic biases should be in place. It is critical to find a careful balance between AI's ability to improve the system and the protection of human rights, justice, and due process.

Finally, the intersection of artificial intelligence and the criminal justice system provides a tantalizing look into a future in which equity and efficiency coexist. AI has the ability to reduce biases, optimize resource allocation, and change the way justice is delivered. This journey, however, must be performed with extreme caution, with the ideals of transparency, accountability, and fairness guiding every step ahead. By viewing AI as a tool rather than a cure, we may harness its potential to create a criminal justice system that is a beacon of justice, equity, and genuine societal progress.¹

AI in Crime Prevention

Artificial Intelligence (AI) is emerging as a potent weapon in the field of crime prevention in an era characterized by rapid technical breakthroughs. As communities attempt to assure safety and security, artificial intelligence (AI) offers novel ways to supplement existing law enforcement practices and handle developing difficulties. We can revolutionize crime prevention tactics, empower communities, and build a safer society by leveraging AI's capabilities.

Traditional approaches to crime prevention frequently focus on reactive tactics, in which law enforcement responds after a crime has been committed. AI, on the other hand, facilitates a paradigm shift towards proactive and preventive approaches. AI systems may find patterns, detect abnormalities, and provide vital insights into potential criminal activities by analyzing massive amounts of data. This proactive approach enables law enforcement to engage before crimes occur, reducing risks and protecting communities. One of AI's primary capabilities in crime prevention is its capacity to process and analyse large datasets from a variety of sources. AI algorithms can generate real-time insights by combining data from surveillance systems, social media, public records, and other relevant sources. This allows law enforcement to more effectively identify hotspots, forecast crime patterns, and allocate resources. For example, AI-powered predictive policing models can assist law enforcement agencies in identifying locations with increased crime probability, allowing them to deploy officers proactively, avert events, and establish confidence within communities.

Furthermore, AI has the potential to significantly improve the capabilities and efficiency of existing surveillance systems. AI-powered video analytics can monitor and analyse video feeds automatically, indicating questionable activity and decreasing the burden on human

¹ OJP.GOV, <https://www.ojp.gov/pdffiles1/nij/252038.pdf> (last visited on Oct. 2, 2023).

operators. Facial recognition technologies can help to identify individuals involved in criminal activity, aid investigations, and speed up suspect apprehending. Law enforcement can cover bigger regions, reduce response times, and boost the effectiveness of crime prevention efforts by incorporating AI into surveillance systems. Engagement and collaboration within the community are critical components of effective crime prevention. In this case, AI can act as a catalyst, strengthening links between law enforcement agencies and the communities they serve. AI-powered chatbots and virtual assistants can give community members with accessible and personalized information, addressing their issues and disseminating crime prevention suggestions. AI algorithms can analyse community-generated data, such as reports of suspicious activity, to aid in recognizing emerging trends and permitting targeted responses. Community members can actively participate in crime prevention initiatives through AI-enabled platforms, contributing to safer neighborhoods and encouraging a sense of shared responsibility.²

However, as we adopt AI in crime prevention, ethical concerns and privacy precautions must be prioritized. It is critical to strike a balance between public safety and individual liberties. Policies and laws must be in place to guarantee that AI systems are deployed responsibly, that privacy is respected, and that biases and data exploitation are avoided. Transparency in AI algorithms and decision-making processes is critical for building public trust and avoiding potential abuses.

We can proactively combat crime, empower communities, and establish a safer society by leveraging AI's analytical powers, predictive insights, and community engagement tools. As we navigate the possibilities offered by artificial intelligence, it is critical to prioritize ethical issues, maintain openness, and create collaboration among technology specialists, law enforcement agencies, and the communities they serve. AI in crime prevention has the ability to build a world where everyone can prosper in safe and harmonious environments if used responsibly and inclusively.

Preventing crime is the first line of defense against crime. AI can help law enforcement agencies predict and prevent crimes by analyzing patterns in criminal activity. AI algorithms can also help police in identifying high-risk areas and individuals based on crime patterns and

² Puneet G., Sony R., the Role of Artificial Intelligence in Improving Criminal Justice: Indian Perspective, 3 Legal Issues in the Digital Era 78, 84-93 (2020), https://www.researchgate.net/publication/350346087_The_Role_of_Artificial_Intelligence_in_Improving_Criminal_Justice_System_Indian_Perspective.

other data sources. AI can also help in identifying potential threats and vulnerabilities in critical infrastructure, transportation systems, and public places. For example, AI can analyze CCTV footage and identify suspicious activities, track missing people, and monitor crowds at events.

AI in Investigation

One of the most significant challenges in the criminal justice system is the lack of resources to investigate and solve crimes. AI can assist in speeding up the investigation process by analyzing large amounts of data and identifying patterns and connections that would be difficult for humans to do alone. This can help law enforcement agencies in identifying suspects and gathering evidence in a more efficient and accurate manner.

AI can also assist in forensic analysis, which is crucial in solving many crimes. For instance, AI can analyze DNA samples, fingerprints, and other evidence to identify suspects or link crimes to previous incidents.

AI in Prosecution

The use of AI in prosecution can help in streamlining the legal process, reducing delays, and ensuring that justice is served quickly and effectively. AI can help in analyzing evidence and identifying key pieces of information that can help in building a case.

AI can also assist in identifying trends and patterns in criminal behavior, which can help prosecutors in making informed decisions about plea bargaining and sentencing. AI can analyze data on previous cases, including outcomes, to help prosecutors in building stronger cases and achieving better outcomes.

The Supreme Court of India launched its first Artificial Intelligence portal SUPACE (Supreme Court Portal for Assistance in Courts Efficiency) in April, 2021. During the launch, the then Hon'ble Chief Justice Of India, S. A. Bobde, said the Supreme Court is embracing Artificial Intelligence in its routine work. He referred to the incident of defeat of grandmaster Garry Kasparov at the hands of Deep Blue in 1997, while explaining how little known AI had come close to common man. At the launch of SUPACE, Hon'ble CJI S. A. Bobde made it clear that this AI portal would not be used for decision making but would be restricted to collection and analysis of data.³ As reported in May, 2021, According to the National Judicial

³ INDIA TODAY.IN, <https://www.indiatoday.in/india/story/supreme-court-india-sc-ai-artificial-intelligence-portal-supace-launch-1788098-2021-04-07> (last visited on Oct. 2, 2023).

Data Grid, around 3.81 crore cases were pending in various district and taluka courts in India and more than one lakh cases had been pending for more than 30 years.⁴ AI has proved to be a big boon in the health care sector, farming and agriculture, mitigation of climate change and prediction of natural disasters, good governance etc. But along with this the use of AI has also raised question due to its potential for mass surveillance leading to lack of privacy and protection, spread of disinformation etc.

Criminal Justice System

The criminal justice system is the foundation of any democratic society, ensuring fairness, upholding the rule of law, and defending individuals' rights. In India's huge and diversified nation, the criminal justice system is critical to maintaining social order and providing justice to its residents. However, India's system, like that of many other countries, faces severe issues that necessitate new and transformative solutions. By confronting these issues head on and embracing progressive reforms, India may create a criminal justice system that promotes equality, efficiency, and equitable access to justice for all.

The issue of backlog and delays in judicial procedures is one of the most serious challenges confronting India's criminal justice system. Long delays have resulted from overburdened courts, procedural difficulties, and a huge amount of outstanding cases, denying justice to many people and damaging public trust. To address this difficulty, a multifaceted approach that harnesses technology, simplifies processes, and improves judicial infrastructure is required. Case management systems and e-filing platforms can help to speed up legal proceedings, minimize paperwork, and increase efficiency. Investing in the recruitment and training of judges and legal experts can also help the system handle cases more effectively.⁵

Another significant issue is ensuring that marginalized and poor segments of society have access to justice. Disparities in legal representation, a lack of awareness of legal rights, and budgetary restraints frequently impede individuals' capacity to seek justice in a country as diverse as India. To overcome these obstacles, India's criminal justice system must accept novel solutions.

Community legal aid programmes, legal clinics, and mobile courts can help bridge the gap by delivering legal services to underserved and remote locations. Furthermore, utilising

⁴ ANALYTICSINDIAMAG.COM, <https://analyticsindiamag.com/behind-the-ai-portal-of-the-supreme-court-of-india/>, (last visited on Oct. 5, 2023).

⁵ OJP.GOV, <https://www.ojp.gov/ncjrs/virtual-library/abstracts/functions-criminal-justice-procedures-tasks-and-personnel> (last visited on Oct. 10, 2023).

technology through virtual courts and teleconferencing capabilities can improve access to justice, especially for individuals living in remote places.⁶ Furthermore, eliminating racism and discrimination within the criminal justice system is critical. India, like any other civilization, must contend with inherent biases that can interfere with fair and impartial decision-making. It is critical to educate court personnel, law enforcement officers, and legal professionals about cultural diversity, gender issues, and human rights. Furthermore, embracing technology solutions such as artificial intelligence (AI) can aid in bias reduction by enabling data-driven decision-making and minimising subjectivity. However, in order to avoid the amplification of biases, the use of AI must be governed by ethical standards and thorough inspection.

An increasing emphasis on rehabilitation and restorative justice can also help India's criminal justice system. Recognizing that punishment is insufficient, efforts should be made to rehabilitate and reintegrate offenders into society. Alternative dispute resolution procedures, such as mediation and arbitration, can provide faster and more amicable results, relieving the court system of its burden. India may move towards a more humane and holistic approach to criminal justice by prioritizing rehabilitation and restorative justice.

India can establish a criminal justice system that is a paragon of fairness, efficiency, and societal growth by embracing technology, streamlining processes, and prioritizing equality and access to justice. India has the opportunity to reshape its criminal justice environment through progressive reforms and adherence to the principles of the rule of law, ensuring that justice is accessible to all and building public faith in the system.⁷

Cardinal Principles of Criminal Justice System:

There are four major principles of criminal law:

1. Until a person is found guilty, they are presumed innocent;
2. A person's guilt must be proven "beyond reasonable doubt";
3. A person can be required to incriminate himself or herself;
4. A person who has been acquitted cannot be tried again for the same offence.

⁶ OJP.GOV., <https://www.ojp.gov/ncjrs/virtual-library/abstracts/functions-criminal-justice-procedures-tasks-and-personnel> (last visited on Oct. 10, 2023).

⁷ BJS.OJP.GOV, <http://bjs.ojp.gov/content/pub/pdf/wfbcjsin.pdf> (last visited on Nov. 13, 2023).

Every individual should be assumed to be innocent unless and until they are proven guilty beyond a reasonable doubt, which is a key premise underlying the right to a fair trial. In the case of *Woolmington v DPP*⁸ the presumption of innocence was re-consolidated.

In criminal law the case identifies the metaphorical "golden thread" running through that domain of the presumption of innocence that the burden of proof lies with the prosecution to establish beyond a reasonable doubt that the crime was committed, and the accused is not required to demonstrate his innocence. In this entire process of criminal trial the role of a judge is not a mere spectator. Just as the prosecutor or the defense council has the duty to present the case of their client considering and studying each case as a unique one, the judge or the judicial officer, also has the prime responsibility of deciding each case as a separate one in the light of unique facts and circumstances of the particular case concerned. Hon'ble Mr. Justice P.Sathasivam, in his speech on "ROLE OF JUDICIAL OFFICERS IN CRIMINAL JUSTICE ADMINISTRATION" (05.01.2013) at Tamil Nadu State Judicial Academy for the Newly Recruited Civil Judges, referred to the observation of Former Chief Justice Ranganath Mishra in a writ petition relating to conditions of subordinate judiciary in the case of *All India Judges' Association vs. Union of India*⁹.

Ranganath Mishra, the Chief Justice, noted: "The Trial judge is the kingpin in the hierarchical system of administration of justice. He directly comes in contact with the litigant during the proceedings in court. On him lies the responsibility of building up of the case appropriately and on his understanding of the matter the cause of justice is first answered. The personalities, knowledge, judicial restraint, capacity to maintain dignity are the additional aspects which go into making the Court's functioning successful". Mentioning the high expectations of society from the judges, he further advises: "A judge ought to be wise enough to know that he is fallible and therefore, ever ready to learn and be courageous enough to acknowledge his errors."

The Indian Evidence Act's Section 165 gives the judge broad authority to ask inquiries. Giving such broad authority is justified in order to ascertain the truth and persuasive evidence. Counsel simply wants their client to succeed, but the judge must see justice prevail. The responsibilities and duties of judicial magistrates are defined by the Code of Criminal Procedure at each step, including pre-trial, trial, and post-trial. Everyone is presumed innocent

⁸ *Woolmington v DPP* (1935) AC 462.

⁹ *All India Judges' Association vs. Union of India* (1992) 1 SCC 119.

unless their guilt is proven beyond a reasonable doubt in a trial before an unbiased and competent court, which is one of the fundamental principles of criminal law. Judiciary officials play a role in ensuring that no one is punished without having a fair trial, as is required by justice. Active participation and application of mind of the judicial officers within the contours of law is very significant. Hon'ble Justice Abhijit Ganguly, Judge, Calcutta High Court, in an interview given to ABP Ananda in 2022, emphasized on the potency of section 165 of Indian Evidence Act and said that he insists on applying the authority vested through this provision and also lamented the fact that many present in court are oblivious of such provision. Even if the magistrate lacks jurisdiction in the matter, Section 164 gives him the authority to record any confession or statement made during an investigation. The magistrate must inform the individual making the confession that: (a) He is not obligated to make this kind of confession; and (b) If he does, it may be used as evidence against him. Hon'ble Mr. Justice P. Sathasivam, clearly expressed that The magistrate must have reason to believe that it is being made voluntarily. He observed, judges, must exercise their judicial knowledge and wisdom to ensure that the confession is made voluntarily.

Sec 235 of Cr. PC also provides for a provision according to which if the judge convicts the accused after hearing all the arguments, he first has an obligation to hear the accused on determining the sentence before pronouncing the sentence unless he proceeds according to sec 360 Cr. PC. According to Kelkar, based on an observation from various Apex Court judgments, " A proper sentence is the amalgam of many factors such as the nature of the offence, the circumstances- extenuating or aggravating- of the offence; the prior criminal record, if any of the offender; his age and educational background; his record as to employment, home life, sobriety and social adjustment; his emotional and mental condition; the prospects for his rehabilitation and return to a normal life in the community; the possibility of treatment or training of the offender". In *Dhananjay Chatterjee v. State of West Bengal*¹⁰ the Supreme Court observed, "The measure of punishment in a given case must depend upon the atrocity of the crime, the conduct of the criminal and the defenseless and unprotected state of the victim". Thus, implementation of sec 235 Cr. PC is not a mechanical process but involves various considerations which vary from case to case and situation to situation.

Sec 167 Cr. PC provides for a very important provision from the perspective of police investigation. As provided in the above-mentioned provision, if the police is unable to

¹⁰ *Dhananjay Chatterjee v. State of West Bengal*, 1994 SCR (1) 37.

complete its investigation within 24 hrs. Of arresting a person, then as per section 57 of Cr. PC the Police may plead before the court to extend the detention of the accused for a period however not exceeding 15 days as provided in the law. This provision of extending the detention of the accused for a period up to 15 days is known as the 'Remand Order'. This detention of custody can be in nature of police custody or judicial custody. Further, section 167 also states that if the Judicial Magistrate is convinced that in the interest of justice and proper investigation, further detention beyond the period of 15 days is required, on completion of the period of extended detention of 15 days, he may further, grant such detention provided it shall not be in nature police custody i.e. this time it shall be judicial custody and the total period of detention (including the earlier periods of detention) shall not exceed 90 days or 60 days as the case may be. However, grant of remand in police custody cannot be a mechanical process. "The magistrate has to exercise his judicial mind while deciding whether or not the detention of the accused in any custody is necessary. The order of detention is not to be passed mechanically as a routine order on request of the police for remand. The need for making the case diary available to the Magistrate before he decides on detention or remand has been stressed by some courts."¹¹

The judiciary has in various cases referred to the role of the judges and the need to apply their mind in the conduct of criminal justice system. Referring to Art. 22(2), Justice Bhagwati stated in *Khatri II v. State of Bihar*¹² that the "provision enables the magistrates to keep check over the police investigation and it is necessary that the magistrates should try enforcing this requirement and, where it is found to be disobeyed, come down heavily upon the police." However, the magistrate is under no compulsion to grant remand on a regular basis. To prove that, the police must present evidence. The order cannot be automated. The Hon'ble Supreme Court ruled in *Sheela Barse v. State of Maharashtra* that the magistrate¹³ must tell the apprehended accused person of his right to a medical examination under section 54. In this instance, the High Court instructed the magistrates to inquire with the person who was arrested about any complaints of torture or other mistreatment while in police custody. According to the ruling in *Hussainara Khatoon's' case*¹⁴ the magistrate has a responsibility to inform the accused of his entitlement to be freed on bail following the statutory waiting period of 90 or 60 days, as the case may be. Thus, it follows that the magistrates are the most qualified

¹¹ *Dhananjay Chatterjee v. State of West Bengal*, 1994 SCR (1) 37.

¹² *Khatri II v. State of Bihar*, (1981) 1 SCC 627.

¹³ *Sheela Barse v. State of Maharashtra*, (1983) 2 SCC 96.

¹⁴ *Hussainara Khatoon & Ors vs Home Secretary, State Of Bihar* (1980) 1 SCC 108.

individuals to ensure that the accused is not denied their rights. In a most recent case of *Ghulam Hassan Beigh v. Mohammad Maqbool Magrey*¹⁵ (decided on 26.07.2022), the SC while explaining the importance of the role of trial courts, opined that, “the trial court is enjoined with the duty to apply its mind at the time of framing of charge and should not act as a mere post office. The endorsement on the charge sheet presented by the police as it is without applying its mind and without recording brief reasons in support of its opinion is not countenanced by law.”

The trial court and the High Court of J&K, discharged the accused persons of the offence of murder punishable under Section 302 of the IPC and charged the accused under Section 304 of the IPC for culpable homicide.

The Supreme Court observed that the trial court discharged the accused persons from the offence of murder and proceeded to frame charge for the offence of culpable homicide under Section 304 of the IPC by only taking into consideration the medical evidence on record which stated that the cause of death of the deceased was “cardio respiratory failure” but in the opinion of the Apex Court such approach of the trial court was not appropriate and cannot be countenanced in law. The post mortem report by itself cannot be considered to be a substantive evidence. “Whether the “cardio respiratory failure” had any nexus with the incident in question would have to be determined on the basis of the oral evidence of the eye witnesses as well as the medical officer concerned i.e. the expert witness who may be examined by the Prosecution as one of its witnesses.”

SC expressed, “The postmortem report can be used only to corroborate his statement under Section 157, or to refresh his memory under Section 159, or to contradict his statement in the witness-box under Section 145 of the Evidence Act, 1872.”

“Ultimately, upon appreciation of the entire evidence on record at the end of the trial, the trial court may take one view or the other i.e. whether it is a case of murder or case of culpable homicide. But at the stage of framing of the charge, the trial court could not have reached to such a conclusion merely relying upon the post mortem report on record. The High Court also overlooked such fundamental infirmity in the order passed by the trial court and preceded to affirm the same.”

So, based on such illustrations and instances, it is evident that the role of a judge or a magistrate in a trial court is immense. His involvement in the case cannot be ignored or

¹⁵ *Ghulam Hassan Beigh v. Mohammad Maqbool Magrey*, 2022 SCC Online SC 913.

minimized for real rendition of justice in a Criminal Justice System. A Judge in a criminal trial mainly deals with human behavior and law. Strict application of algorithmic representation of human behavior will defeat the cardinal principle of criminal justice and the goal of rendering justice. The decision of a judge decides the fate of the accused and the victim and thus going by the cardinal principles of criminal justice system, it would be highly inappropriate to rely on algorithmic mechanically formulated system for delivery of final decision. Once again we may refer to the interview given to ABP Ananda in 2022 by Hon'ble Justice Abhijit Ganguly, Judge, Calcutta High Court, where he stated referring to Hon'ble Justice P.B.Mukhopadhyay that 'Law is blind but judge is not'.¹⁶

Application of AI in Criminal Justice System

However, AI can be a very potent means for making the working of Criminal Justice System more efficient. Some of the difficulties faced in the effective operation of the Criminal Justice System are huge number of pending cases, huge manual labour involved in procedural details, dearth of technological skill in investigation process etc. As a solution to such hurdles, various applications of AI have been used.¹⁷

1. E filing of cases and the opportunity to pay court fees from any point makes the job of the lawyers very convenient especially as they can access complete information regarding the case from any point.¹⁸
2. Further the inter operable criminal justice system (ICJS) enables seamless transfer of data between the various players of criminal justice system viz. court, police, prison etc much more smooth and hassle free . ICJS ensures quick access to documents like FIR, Case diary, charge sheet etc from one platform.¹⁹
3. NSTEP is a centralised process service tracking application comprising of a web application and a complementary mobile app designed to streamline the process of service of summons and notices. Introduction of AI has a great impact on disposal of cases.²⁰

¹⁶ BENGALI ABPLIVE.COM, <https://bengali.abplive.com/topic/justice-abhijit-ganguly> (last visited on Nov.13, 2023).

¹⁷ OJP.GOV, <https://www.ojp.gov/pdffiles1/nij/252038.pdf> (last visited on Nov.13, 2023).

¹⁸ PIB.GOV.IN <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1907546> (last visited on Nov.13, 2023).

¹⁹ DISTRICTS. ECOURTS.GOV.IN, <https://districts.ecourts.gov.in> (last visited on Nov.13, 2023).

²⁰ E COMMITTEESCI.GOV.IN <https://ecommitteesci.gov.in/nstep/#:~:text=NSTEP%20is%20a%20centralised%20process,designed%20to%20streamline%20the%20process> (last visited on Nov.13, 2023).

4. National Judicial Data Grid (NJDG) is a database of orders, judgments and case details of 18,735 District & Subordinate Courts and High Courts created as an online platform under the eCourts Project. Data is updated on a near real-time basis by the connected District and Taluka courts. It provides data relating to judicial proceedings/decisions of all computerized district and subordinate courts of the country. All High Courts have also joined the National Judicial Data Grid (NJDG) through web services, providing easy access facility to the litigant public. NJDG works as a monitoring tool to identify, manage & reduce pendency of cases. It helps to provide timely inputs for making policy decisions to reduce delays in disposing of cases and helps in reducing case pendency. It also facilitates better monitoring of court performance and systemic bottlenecks, and, thus, serves as an efficient resource management tool.²¹
5. In India, the use of AI for policing is very common. JARVIS, or Joint AI Research for Video Instances and Streams, is a video analytics platform that was introduced by the start-up Staqu in November 2019. It can assist law enforcement agencies in tracking each violent occurrence that occurs in a certain location. The Police may be able to mobilise officers to prevent any escalation of the incident and to contain any possible dangers to property and human life with the aid of such real-time event identification. This software's goal is to produce valuable data from lengthy CCTV video footage with brief, clear real-time notifications utilising AI and computer vision, greatly cutting the time it takes to produce useful data. Eight states and union territories, including Punjab, Haryana, Rajasthan, Bihar, and Telangana, are currently receiving services from Staqu. Punjab Police (2018) employed a similar programme and the Police Artificial Intelligence System (PAIS), which was created by Staqu. A database of more than 1 lakh records of criminals being held in jails around the state of Punjab is made available by the functionality of this product, which also allows for options like face and text searches. Product with identical features, called Trinetra has been also helping the UP Police.²²
6. AI can be employed in DNA evidence, pattern recognition, crime scene

²¹ BJS. OJP. GOV, <http://bjs.ojp.gov/content/pub/pdf/wfbcjsin.pdf> (last visited on Nov.13, 2023).

²² APPSOURCE.MICROSOFT, https://appsource.microsoft.com/en-us/product/web-apps/staquetechnologiesprivatelimited1584519310889.jarvis_staqu?tab=overview (last visited on Nov.13, 2023).

reconstruction, digital forensics, image-processing, psycho/narco-analysis etc.²³

7. AI can be used in a variety of fields, including digital forensics, image processing, psycho/ narcoanalysis, pattern recognition, crime scene reconstruction, and DNA analysis. By creating logical evidence, reconstructing crime scenes in 3D, handling evidence skillfully, and evaluating it to achieve logical conclusions at various levels of investigation, AI is assisting forensic specialists and investigators. AI-based algorithms are utilised for detection, prevention, and even prediction of future crime or criminal conduct since they can identify risk in large amounts of data.²⁴
8. AI is also incredibly helpful for managing prisons. Using AI, it is possible to allocate cells depending on a variety of criteria, including the accused or convicted person's age, criminal history, family background, and type of crime committed. AI-based monitoring is the perfect remedy for:
 - Put an end to the violence inside the prison
 - Crowd research
 - Threats to security are identified
 - Detection of breaches or unauthorised entry into prisons.²⁵

AI is used mostly for legal research and data base creation. Westlaw, Lexis Nexis, Google Scholar, Fastcase, Ross Intelligence are most recognized platforms providing legal research tools.²⁶

Kiren Rijiju, the law minister, responded to the question of whether artificial intelligence (AI) can be used in judicial processes to shorten the length of time cases remain pending, stating that while implementing phase two of the e Courts projects, which have been in operation since 2015, a need was felt to adopt new, cutting-edge technologies of Machine Learning (ML) and Artificial Intelligence (AI) was felt to increase the efficiency of the justice delivery system. He said, "To explore the use of AI in judicial domain, the Supreme

²³ In *Selvi v. State of Karnataka*, the Supreme Court has laid down that Narcoanalysis test can be conducted on the accused person after seeking their consent. If the test is conducted on the accused without the consent of the person, it would violate Article 20(3) of the Indian Constitution. Further, it was held that the test should be conducted in the presence of the expert.

²⁴ Eman Ahmed Alaa El-Din, *Artificial intelligence in forensic science: invasion or revolution?*, 10 *ESCTJ* 20, 21-30 (2022), https://esctj.journals.ekb.eg/article_272046_4694247be2fec3aa3f89e32768714bae.pdf.

²⁵ *RM.COE.IN*, <https://rm.coe.int/ai-in-prisons-2030-acjournal/1680a40b83> (last visited on NOV.13, 2023).

²⁶ *LEGAL.THOMSONREUTERS.COM*, <https://legal.thomsonreuters.com/en/insights/articles/best-ai-for-legal-research> (lastvisitedonNOV.13, 2023).

Court of India has constituted Artificial Intelligence Committee which has mainly identified application of AI technology in Translation of judicial documents; Legal research assistance and Process automation.”

A number of law firms are now eager to test out new technologies for an instant reference on judicial precedents and pronouncements on cases with related legal issues at stake. The first law office in India to implement AI in legal research, analysis, and documentation was Cyril Amarchand Mangaldas. In order to improve and modernise their legal services and make them more effective and precise, they entered into an arrangement with Canada-based technology startup Kira Systems in 2017. Mumbai-based A "legal tech" company called Riverus has created ML software that, in a fraction of the time, can read through vast amounts of cases, "understand" them, and parse instances with similar content.²⁷

- SUPACE, a hybrid of human and artificial intelligence that was previously described in the article, would not be employed in decision-making, according to Hon. CJI Justice Bobde. The gathering and processing of data will be the exclusive function of AI. Through this gateway, the Supreme Court plans to use machine learning to manage the volume of data it receives from case filings.²⁸
- The Supreme Court created SCI-Interact software in 2020 to eliminate paper from all 17 of its benches. This computer programme enables judges to retrieve papers, add annexures to petitions, and take notes.²⁹
- Earlier, the Ministry of Law and Justice's Department of Legal Affairs (DoLA) had unveiled a web-based programme named LIMBS, or Legal Information Management & Briefing System. The software might keep track of cases uploaded by the relevant Commissionerate's from high courts and tribunals. The goal was to efficiently follow a case's entire life cycle.³⁰
- The Apex Court introduced SUVAAS, a locally developed neural translation tool, in November 2019 to more quickly and accurately translate judicial orders and

²⁷ ECONOMICTIMES.INDIATIMES.COM, <https://economictimes.indiatimes.com/news/politics-and-nation/kiren-rijju-justice-sanjay-kishan-kaul-point-to-significance-of-artificial-intelligence-in-arbitration/articleshow/98072092.cms?from=mdr> (last visited on NOV.13, 2023).

²⁸ HBR.ORG, <https://hbr.org/2022/09/ai-isnt-ready-to-make-unsupervised-decisions> (last visited on NOV.13, 2023).

²⁹ ECONOMICTIMES.INDIATIMES.COM, <https://economictimes.indiatimes.com/news/politics-and-nation/supreme-court-develops-software-to-paperless/articleshow/75989143.cms?from=mdr> (last visited on NOV.13, 2023).

³⁰ LEGALAFFAIRS.GOV.IN, [//legalaffairs.gov.in/](https://legalaffairs.gov.in/) (last visited on NOV.13, 2023).

judgements from English to vernacular languages.³¹

Benefits of AI in the Criminal Justice System

The use of AI in the criminal justice system in India can bring several benefits, including:

- **Improved Efficiency:** AI can analyze large amounts of data quickly and accurately, which can help in speeding up investigations and reducing delays in the legal process.
- **Increased Accuracy:** AI algorithms can analyze data without bias, which can help in ensuring that justice is served fairly.
- **Cost Savings:** AI can assist in reducing costs by automating routine tasks, such as document analysis, freeing up human resources to focus on more complex tasks.
- **Crime Prevention:** AI can assist in predicting and preventing crime, helping to keep communities safer.
- **Enhanced Public Safety:** AI can assist in identifying potential threats and vulnerabilities, helping law enforcement agencies to respond quickly and effectively to keep the public safe.³²

Challenges in Implementing AI in the Criminal Justice System:

- Despite the potential benefits of AI in the criminal justice system in India, there are also challenges that need to be addressed. One of the most significant challenges is the lack of data and digital infrastructure in many parts of the country, which can limit the effectiveness of AI.
- There are also concerns around the use of AI, particularly around issues such as bias, privacy, and accountability. It is essential to ensure that AI is developed and implemented ethically and transparently, with appropriate oversight and regulation.³³

³¹

MAIN.SCI.GOV.IN, <https://main.sci.gov.in/pdf/Press/press%20release%20for%20law%20day%20celebratoin.pdf> (last visited on NOV. 13, 2023).

³² OJP.GOV, <https://www.ojp.gov/pdffiles1/nij/252038.pdf> (last visited on NOV.13, 2023).

³³ THEAMIKUSQRIAE.COM, <https://theamikusqriac.com/legal-implications-of-artificial-intelligence-in-the-criminal-justicesystem/#:~:text=Lack%20of%20human%20oversight%3A%20While,as%20when%20determining%20a%20sentence.> (Last visited on NOV.13, 2023).

Conclusion and Suggestion

The convergence of Artificial Intelligence (AI) and the criminal justice system represents once-in-a-lifetime chance to transform how justice is delivered in our society. Artificial intelligence has the potential to overcome innate biases, optimize resource allocation, and improve decision-making processes. However, while we embrace AI's transformational capacity, we must proceed with caution, ensuring that ethical principles, transparency, and accountability drive its adoption.

The symbiotic interaction between humans and AI has the potential to establish a fair, efficient, and just criminal justice system. We can reduce prejudices that have plagued the criminal justice system for decades by leveraging AI's analytical capabilities. Subjective judgements impacted by race, gender, or socioeconomic variables can be mitigated by objective data-driven decision-making.

Furthermore, using AI to automate time-consuming tasks can free up valuable human resources, allowing legal practitioners to focus on more important areas of their work.

While AI has enormous potential, its deployment must adhere to strict ethical guidelines. Transparent algorithms, auditability, and strong data protection procedures are required to avoid bias reinforcement or the erosion of human freedoms. Human oversight should continue to be an important part of the decision-making process, ensuring that AI algorithms are constantly examined, evaluated, and held responsible. Collaboration among AI experts, legal professionals, and policymakers is critical for striking a careful balance between the benefits of AI and the protection of human rights and due process.

To fully realize AI's promise in the criminal justice system, we must be proactive in its development, deployment, and regulation. Here are some ideas for maximizing AI's benefits while maintaining justice, openness, and individual rights:

a. Create extensive Ethical standards:

Create extensive ethical standards governing the use of AI in the criminal justice system. These standards should address prejudice, transparency, accountability, and privacy protection, ensuring that AI algorithms and decision-making processes adhere to core justice concepts.

Implement Thorough Testing and Validation Processes for AI Algorithms:

Implement rigorous testing and validation processes for AI algorithms. Audits should be

performed on a regular basis to identify and correct biases or unintended outcomes. Independent third-party evaluations can boost public trust in AI systems employed in criminal justice.

b. Human Oversight and Continuous Monitoring:

Human oversight should be an inherent aspect of AI systems. Regular monitoring and evaluation should be carried out in order to detect and correct any biases or errors that may occur. To maintain accountability and resolve any concerns, a clear feedback loop between human operators and AI algorithms should be built.

c. Collaborative Research and Development:

Encourage collaboration among AI experts, legal professionals, and policymakers in order to advance research and development in AI technology specialised for the criminal justice system. To achieve a holistic approach and to consider multiple perspectives, this partnership should comprise interdisciplinary teams.

Data Governance and Privacy Protection: Create strong data governance structures to safeguard the privacy and confidentiality of those involved in the criminal justice system. Strict processes for data collection, storage, access, and sharing should be in place, with a special emphasis on preventing unauthorised use or discrimination based on sensitive information.

d. Public knowledge and Education:

Support activities to increase public knowledge and comprehension of AI technologies in the criminal justice system. Engage communities, legal professionals, and civil society organisations in debates about the benefits, hazards, and ethical implications of artificial intelligence.

We can negotiate the incorporation of AI into the criminal justice system responsibly and successfully if we follow these recommendations. We can construct a system that preserves the concepts of fairness, equity, and justice by accepting AI as a tool that supplements human judgment. The potential for AI to improve the criminal justice system is enormous, and by building a route led by ethical considerations and public trust, this promise can be realized.