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ROLE OF TECHNOLOGY INTO CRIMINAL JUSTICE SYSTEM IN INDIA

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Introduction

Technology is the greatest weapon today in the 21st century, which has its inherent quality of progress. The application of scientific knowledge to the problems of daily life had accentuated the creation of something bigger, which proved to be of immense value for the life of mortals to carry out their ordinary and sophisticated works. Technical innovations had become an effective substitute for manual work both in the ordinary course of life as well in the ongoing process of administration, which resulted in the effective mitigation of different problems the department faced. The use of technology can be implemented into the wider stream by potentially using its potential and by making a revolutionary change, the scope of crime prevention can be widened.¹

The Recent Developments In modern technology with regards to AI

More than development with the technology, the technology had incorporated in itself the mode of Artificial Intelligence (AI), which had widened the sphere of operation of technology. The AI has revolutionized the way we live our lives. AI had been there since some years back, particularizing to the mid-21st century, which marked its beginning. The initial usage of AI for solving mathematical problems, had subverted itself to the different core areas which came to know that it needs it only when it had its application. The machine learning was indeed a new course-altering concept. The ability of AI to analyze vast multitude of data and convert it to the needed version is actually commendable. Natural language processing, Computer Vision, Reinforcement learning, etc. had increased the significance further. The future of AI has for sure, immense possibilities. The ability to calculate mathematical problems faster, the usage of AI in health care, the ability of AI for faster decision making, etc. has made the future more hooked up. Despite all the achievements, AI has several defects of its own which make it quite

¹ Krit Jiarawattanakul, *The Technological Advancement of Artificial Intelligence*, LinkedIn (Oct. 7, 2023), <https://www.linkedin.com/pulse/technological-advancement-artificial-intelligence-jjarawattanakul>.

susceptible to the very centre. The immense capabilities added by the various levels of demerits have made the new initiative much more neutral in opinion. But all the support it provides cannot go without consideration. Multimodal AI, the new uprising in 2024, is providing comprehensive experiences after analyzing and combining data related sources across the web and merging it accordingly.²

The AI had been of great help for different spheres, especially, as mentioned earlier, in the administrative sphere. Providing immediate reference to the related data, computerizing meetings, readying appointments and providing reminder of the same, gathering of the similar cases and incidents for the easy facilitation of functioning for the administrative authorities, AI has been playing within its boundaries very well. Election conduction and the counting had been made at ease with the help of AI which provides for the advanced voting system and automatized counting apparatus. The most obliging change can be found in the administration and mitigation of criminal justice system and crimes respectively. The main aim of criminal justice system, obviously is to solve the crime rates and provide justice to the affected. Introduction of several modes of AI has helped successfully solve crimes and bring peace to the society.³

The role of technology into the criminal justice system:

1. Slight introduction into the criminal justice system in India

The Criminal justice system in India comprises all the essential machinery for solving crimes in the country and for the establishment of law and order in the society. It protects the citizens from violation of their rights, liberties and to be more specific, it serves as a guardian angel to their Right to Life in particular. Its main aim is to find the crimes in society, punish the criminals and establish peace in the nation by adjudication of crimes and various other cruelties. It helps in the rehabilitation of criminals from their criminal tendencies by providing rehabilitation facilities. It prevents the offenders from committing any crimes in the future and deters the like-minded individuals from committing the same. It has its own way of administering justice by adhering strictly to the norms and provisions of the constitution. The criminal administration in India has several laws in it. It can be broadly substantiated based on whether they are substantive or procedural in their aspect. Some examples are; The Code of Civil Procedure (1908) which is a procedural law, which lays down the procedural aspect of

² *Jiarawattanakul*, supra note 1.

³ *Ibid.*

adjudicating crimes. It has been renamed as Bharatiya Nagarik Suraksha Sanhita, which will be in effect from July 1st. The Indian Penal Code (1860), which is a substantive law which defines rights, liberties and certain do's and don'ts concerning citizens of the country. It has been renamed as Bharatiya Nyaya Sanhita, 2023, with the initiation of certain additions. The Protection of Civil Rights Act (1955), also is a part of this comprehensive system. It was passed to abolish practices such as untouchability and to secure equal rights for every citizen in the country regardless of their distinctions based on caste, creed, colour, etc. ⁴

The structure of the criminal justice system consists of four main pillars: The investigative process by the police department, the process of prosecution of the case by the prosecutor, the determinative process of the court (guilty or not guilty), and finally the process of correction (mens rea) through prison and other systems existing within the purview of the centers which are accepted by the government. Article 246 has placed certain factors associated with it in the State List, including: police, courts, prisons, etc.

The investigation process includes the registration of the complaint in the police station by the affected, the process starts thereafter. The investigation starts thus, leading it to the provision of ability of the police to investigate anyone related to the facts and circumstances of the case. This is provided in the section 161 of CrPC (section 180 of Bharatiya Nagarik Suraksha Sahita (BNSS), 2023). The next step is of immense value. On behalf of the state, the public prosecutor prosecutes the offender, thus proving the guilt of the offender. Mentioned likewise, it leads to the next process that is, determination by the court. The court, based on the facts and evidences presented before the itself, gives the verdict. If, the court gives the verdict as the accused being guilty, the corrective systems take charge. They include prison systems and rehabilitative facilities which the court specifies. ⁵

Through this process, the criminal administrative system administers the adjudication regarding the crimes in society. These methods are of intrinsic value to form a conclusion regarding mitigation of the crimes. In order for the speedy disposal of justice, these methods, which naturally takes time and are exhaustive, the inclusion of technology into the system would help in untroubled inquiry of issues, which adds to its necessity that cannot be

⁴ Jiarawattanakul, supra note 1.

⁵ Lou Burton, *How AI Is Used to Streamline Administrative Tasks in the Modern Office*, *SwipedOn Blog* (Feb. 14, 2024), <https://www.swipedon.com/blog/how-ai-is-used-to-streamline-administrative-tasks-in-the-modern-office>

neglected.⁶

2. What all technology can be incorporated into the different arenas of criminal justice system? Answering with the help of a slight peek into the facilities available within itself

The usability of the modern sophisticated technology in the crime related administrative process is very much discussed for the past few years. The feasibility of the modes of technology are very much wide.⁷

The initial step lies in the speedy conduction of investigative processes. The development of forensic technology in understanding the irregularities which are unnatural related to the crime scenes are a start. The improvement in face recognition software which is on the move now. The face recognition technology which delegates to the entire data of a citizen, producing the DNA related information for the easy identificatory process is a mechanism which helps. This mechanism is of use now. Moreover, the improvement in the field of biometrics, voice technology, AI, vehicle related combined data, GPS tracking, etc. can be thought of and would be really helpful.⁸

The initiative of predictive policing via technology-related methods are in increase these days. Using AI algorithms, predictive policing is able to successfully prevent, to an extent, a number of crimes in the country. Predictive policing aims to predict when and where crimes are likely to occur. It makes use of geographical, climatic forecasting and various other AI algorithms to predict the hotspot and deploy forces to the site where the incident is likely to happen, in order to avoid it. The use of predictive policing should be improved thoroughly.

Cyber wing is a beacon for the criminal justice system as it helps in the timely response to various crimes and also helps in the capturing of criminals. This should be strengthened.⁹

DNA profiling is the most common method used in investigative processes to identify the details regarding a person on whom the investigation is concentrated upon. The difference in DNA actually gives an advantage for the forces engaged in investigation.

⁶ Burton, supra note 5.

⁷ Ibid.

⁸ Ibid.

⁹ *Artificial Intelligence in Governance*, CII Blog (May 17, 2023), <https://ciiblog.in/artificial-intelligence-in-governance>

3D imaging of the crime scene allows the forces to research the crime scene in much more magnified manner. It is of increase these days in particular. The development of DNA related findings would help in the capturing of culprits.¹⁰

The next step is the trial. These days, some of the trials are taking place via google meet. The courts take online evidences for the adjudicative process. During the pandemic times in general, the courts have embedded in itself new technology for the speedy redressal of issues. The inclusion of speech to text system while judges write the arguments in the court would save a lot of time in the court. Even if the process had been made faster with many judges resorting to use laptops instead of relying entirely on writing, it will become much faster if the speech to text would be included. The paper works should be relied entirely on the electronic mode in most of the courts and advocate offices, which even though, the courts have resorted to E-filing, it needs to be eased up as per its procedure is concerned, to save the time and effort of the lawyers, so that their paper works are done properly without them having to intensely sweat up for it. Also, it would make the situation much easier if it is made uniform over the entire country. The identificatory systems that are similar to security systems in appearance should be used for gathering of data related to the cases, which if left unaccumulated and unordered, would lead to chaos in dealing with them.¹¹

The next discussion should be about detention. Jail breaking is a critical issue that needed to be addressed. To prevent that, automatic recognition software should be included which fetches the information of the offenders using their fingerprints or retina scans. After fetching the information, we will be able to understand the various information regarding the criminals which, excluding the most confidential details, should be made available to the public ensuring their safety. Separate jail system for the offenders based on the grievousness of the crime would help the security of the nation. The scanning of jails could be a factor for consideration to make sure that the offenders are still inside the jail.¹²

3. Implications of technology (more particularly, the role of AI) in legal profession in India with special consideration to criminal law.

AI, one of the most controversial technological reforms, has its fair share of task within the

¹⁰ Ibid.

¹¹ Ibid.

¹² *Indian Kanoon*, <https://indiankanoon.org/> (last visited Feb. 12, 2026).

legal spectrum. They have been used widely in the legal profession relating to contracts reviews, documents, legal research and data analysis. But, unlike other profession, AI hasn't been used widely in a wider scope since it is believed that it isn't able to handle complex tasks. AI has been a continuous source of conflict in India, which had been seen in some of the past few cases such as: *Dipti Deodhare v Drdo*, *Jai Bharat College of Management v The State of Kerala*, etc.¹³

Since 2001, technology had been used by the courts to provide processed information to judges for the facilitation of decisions on their part. But, as already mentioned, they have a limit in its usage as it does not fully participate in the decision making process. A tool which is used by the Supreme Court of India is SUVAS (Supreme Court Vidhik Anuvaad Software) which has the ability to transform English legal papers to the respective vernacular languages of people.¹⁴ To know the wider perspective in a case, the presiding judge of Punjab and Haryana High court of the case *Jaswinder Singh v State of Punjab*, used the help of ChatGPT. The reference by the court was completely for having a broader perspective of the case which didn't had an effect to expressly imply the merits and other facets of the same.

Thus, we can simplify by stating that the application of technology in law field, particularly criminal law field can be useful due to its provision of wider perspective to various cases that comes before the honorary courts of India.¹⁵

4. The presence of technology in the Evidence Act,1872 and the various inferences drawn from it

The inclusion of the Evidence Act of 1872 was intended here just to point out the significance of technology and its relation to the law field.¹⁶

According to Section 65B (1) of the Evidence Act, any information in an electronic record printed on paper or stored or recorded or copied in optical or magnetic media produced by a computer shall be deemed as a document.¹⁷

¹³ Ibid.

¹⁴ Ibid.

¹⁵ *Indian Kanoon*, supra note 13.

¹⁶ *Burton*, supra note 5.

¹⁷ *Jiarawattanakul*, supra note 1.

Electronic related evidences these days are proving to be much more reliable than any other manual evidences owing to its accuracy. The Evidence Act of 1872 had supported the importance and significance of electronic evidences since it has the ability to change the course of different cases.¹⁸

This itself exemplifies the importance of the addition of technology in various fields relating to law especially to the criminal law arena and how it has the ability to transform certain variables within the field.¹⁹

The inclusion of technology in the evidence act has other implications as well. The present century is witnessing humongous increase in crime rates with majority being executed with the help of cosmopolitan technologies that is still on the decipherment process by the expert. Since, there is a popular saying that modern problems require modern solutions, we can say that in order to tackle such complicated issues, the process requires the help from technology. Technology not only aid crimes, but also to its mitigation. The century needs it desperately, even how bad we try to avoid it profusely. With the help of technology and its related evidence, we will be able to find solutions for various cases that are still persisting due to it's unintelligibility. Many cases of the past still exist undone due to the lack of such advanced tools to decipher complex phenomena of the cases. The use of it would be definitely a helping hand for the solutions.²⁰

Conclusion

Since the dawn of humankind, they had been in continuous speculation on how to transform their lives into ease and various ways to approach the idea. The development of modern technology has proved to be of one of the most revolutionizing discoveries that decades have witnessed. Several other associated discoveries of technology had also been immensely helpful. These all together helped the mankind achieve a dream they were trying to acquire since times immemorial. But, for every goodness, there is the existence of badness as well. The introduction has paved the way for several atrocities and various scams with the help of these technologies which were used while trying to find a way to remain anonymous. The very use of these tools to commit such offenses has necessitated the inclusion of the same within the

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ *Burton*, supra note 5.

tackling system. The use would facilitate the reduction in offences by helping to find the culprits easily and help in avoiding such crimes from happening in the near future. It can instil a sense of fear among the individuals who were planning on committing the same.

India, being a fast-developing economy, has seen lakhs of violations of law over the past decades. To provide a solution not only for the reduction of such crimes, but for the systematic working of the criminal administrative system in India, the inclusion of technology is very much comprehensive and obligatory, as the nation needs it for its smooth sustenance.

