**AI in Crime Records Management System for Crime prediction, prevention and detection**

**Ankit Mishra\*1, Ambalika\*2, Ritesh Kumar\*3,**

**Prof Ritu Sindhu 4\***

**\*1,2,3 Student , Department of Computer Science and Engineering, Lingaya’s Vidyapeeth, Faridabad, Haryana, India**

**4\* Associate Dean & Professor, Department of Computer Science and Engineering, Lingaya’s Vidyapeeth, Faridabad, Haryana, India**

**Abstract:**

Artificial Intelligence (AI) has made significant advancements in different sectors. In today's constantly evolving world, the intersection between technology and various industries has become increasingly prominent and one such area where it is gaining popularity is the criminal justice system. With its great ability to analyse vast amounts of data and identify patterns, AI has the potential to revolutionize the way crimes are investigated, defendants are evaluated, and sentences are determined.AI technologies like machine learning, predictive analytics, and data mining are at the forefront of this change. Machine learning is a type of AI that creates computer algorithms to be more accurate as large data is processed.  Predictive analytics is a type of analysis that uses tools and techniques to forecast outcomes.  AI's pattern recognition and data processing capabilities allow it to identify crime trends, correlations, and anomalies that may be difficult for human analysts to detect. These systems analyse varied data, including crime rates, locations, demographic information, and socio-economic indicators. By identifying patterns and correlations, AI algorithms can forecast potential crime hotspots and trends.

**Keywords:** Machine Learning, Data Mining, Crime

**Introduction:** Artificial intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems. Though the humanoid robots often associated with AI (think *Star Trek: The Next Generation’s* Data or *Terminator’s*  T-800) don’t exist yet, you’ve likely interacted with machine learning-powered services or devices many times before. At the simplest level, machine learning uses [algorithms](https://www.coursera.org/articles/machine-learning-algorithms) trained on data sets to create [machine learning models](https://www.coursera.org/articles/machine-learning-models) that allow computer systems to perform tasks like making song recommendations, identifying the fastest way to travel to a destination, or translating text from one language to another. Some of the most common examples of AI in use today include:

[**ChatGPT**](https://www.coursera.org/articles/chatgpt)**:** Uses large language models (LLMs) to generate text in response to questions or comments posed to it.

**Google Translate:** Uses deep learning algorithms to translate text from one language to another.

**Netflix:** Uses machine learning algorithms to create personalized recommendation engines for users based on their previous viewing history.

**Tesla:** Uses computer vision to power self-driving features on their cars.

**AI in crime prediction:**

The integration of AI in predictive policing offers several key advantages:

1. **Proactive Crime Prevention:** By predicting potential crime hotspots and trends, AI empowers law enforcement to take proactive measures, preventing crimes before they occur.
2. **Resource Efficiency:** AI-driven resource allocation helps law enforcement agencies optimize manpower, time, and budgets, maximizing the impact of crime prevention efforts.
3. **Real-Time Insights:** AI continuously analyses new data, providing law enforcement with up-to-date and actionable insights to respond swiftly to changing crime patterns.
4. **Objective Decision-Making:**AI models are designed to be objective and data-driven, reducing the potential for human bias in crime prevention strategies.

**AI in crime detection:**

Artificial Intelligence helps policing in Crime Detection. Artificial Intelligence is slowly but surely becoming a proficient tool to punish the criminal and to check unlawful actions. Many of the Law Enforcing Agencies across the world are using the most up-to-date solutions to prevent crime. One such solution is the ‘facial recognition’ which is being widely implemented in various sectors other than the law to maintain security. Artificial intelligence in policing is a framework which is evaluated with the help of computers. It can also be utilized to make decisions regarding final rulings. It is the technology that holds great promise for the future in crime detection.

These days Law Enforcing Agencies are taking the help of Artificial Intelligence to enhance the workability of their officers. It is turning out to be an indispensable part of the law enforcers or the police as it can support them in various ways. AI technology is used for surveillance, to monitor the crowd for an anomaly, evaluate video footage for crime and apply facial recognition to optimum effect. Artificial intelligence in policing is expected to bring about changes in security and assurance to a society. The most important objective of the police force is to not only to prevent crime but also to solve it. City infrastructure is becoming smarter and more connected. This provides cities with sources of real time information, ranging from traditional security cameras to smart lamps, which it can use to detect crimes as they happen. With the help of AI, the data collected can be used to detect gunfire and pinpoint where the gunshots came from.

we cover a range of present applications:

### Gunfire Detection – ShotSpotter

The company ShotSpotter uses smart city infrastructure to triangulate the location of a gunshot

According to ShotSpotter, only about 20 percent of gunfire events are called in to 911 by individuals, and even when people do report the event they often can only provide vague or potentially inaccurate information. They claim their system can alert authorities in effectively real time with information about the type of gunfire and a location that can be as accurate as 10 feet. Multiple sensors pick up the sound of a gunshot and their machine learning algorithm triangulates where the shot happened by comparing data such as when each sensor heard the sound, the noise level, and how the sound echoed of building.

### AI Security Cameras – Hikvision

While ShotSpotter listens for crime, many other companies are using cameras to watch for it. Last year [Hikvision](http://www.hikvision.com/), a Chinese company which is a major security camera producer, [announced](https://www.movidius.com/news/movidius-strikes-deal-with-hikvision-to-bring-artificial-intelligence-to-in) they would be using chips from Movidius (an Intel company) to create cameras able to run deep neural networks right on board.

They say the new camera can better scan for license plates on cars, run facial recognition to search for potential criminals or missing people, and automatically detect suspicious anomalies like unattended bags in crowded venues. Hikvision claims they can now achieve 99% accuracy with their advanced visual analytics applications.

With [21.4% of the market share](http://www.hikvision.com/en/Press-Release-details_74_i1518.html) for for CCTV and Video Surveillance Equipment worldwide Hikvision was the number supplier for video surveillance products and solution  in 2016 according to IHS.

## **An Important Part of AI**

One of the most common elements of AI is Facial Recognition. This technology has been applied extensively to receive help for identifying criminals. Many countries have applied facial recognition device like the close-circuit cameras in public areas to identify and apprehend trouble makers. It is also a method to monitor the citizens and catch the criminals while committing any kind of crime. In some cities it is being used for surveillance in sensitive areas like the airport or the railway station. Artificial intelligence in policing brings out positive results which enhances enforcing of the law. Due to which the amount of users for AI has been rising gradually.

## **Conclusion**

As the rate of crime is growing, the use of existing programs of Artificial Intelligence is turning out to be of great advantage. These programs help in predicting crime as well as the criminal to larger extent. But, it is also important to make sure that the working structure is rational and translucent. Many researchers are of the opinion that a committee should be constructed at international level to regulate the use of AI. Every country is required to contribute in the development of this AI system. One more aspect needs to be addressed is the preservation of the human rights. It is becoming quite obvious that the law keepers would need more assistance from Artificial Intelligence. It is going to be common practice but it must be made certain that the laws and other codes don’t invade the privileges of human.