

The Role of AI in Criminal Justice: Enhancing Objectivity or Reinforcing Inequities

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ABSTRACT

Artificial Intelligence (AI) is promotively changing the criminal justice system, providing both an extraordinary opportunities and complicated challenges. From lab work to courtroom and investigations, AI technologies are being joined to support and in cases, automate critical decision-making process. In forensic science analysis, AI-functioned tools are used to interpret fingerprints, facial feature, voice patterns, and digital data with remarkable speed and details, aiming to improve investigative efficiency and reduce human mistake. Meanwhile, in judicial contexts, AI- tool like COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) are being used to help decide sentences and parole by predicting how likely someone is to commit another crime, based on the past data.

These new AI tools may help improve the legal process and even let people watch court cases live with this they also have problems with how the rules, fairness work. AI proof is not always correct; they can be sometime be unfair. if people are not aware of how these tools work to make choice, it's difficult to tell if they are being treated fairly. This becomes a big problem because the justice system should be fair for all people. If suppose the courts use AI to give punishment without even properly checking it, it will lead to being unfair results.

This paper focuses on how the AI is being used in the criminal justice system. It looks at how these tools work and what problems do they have and how they impact the people and the community. The focus is on to find out if the usage of AI is helpful to the criminal justice system or if it is making it worst

KEYWORDS: Artificial intelligence, criminal justice system, transparency, enhancing objective, reinforcing inequities., COMAPS,

INTRODUCTION

ARTIFICIAL INTELLIGENCE

Artificial intelligence also known as AI is a type of technology which make the machine to think and act like a human being AI is used in many ways in our day-to-day life. It makes the task to be finished faster, easier, and detailed. It is a part of the computer science that creates the programs which can solve problems and make decisions. It brings many great benefits but also creates new challenges. There are many kinds of machine learning technologies or algorithms, including linear regression, logistic regression, decision forest, support vector machine (SVMs) and more. Each of these is suited for different kinds of problems and data. But one of the most popular types of machine learning algorithm is called 'Neural network'. They are modeled after the human brain's structure and function. It consists of interconnected layers of

nodes that work together to process and analyze complex patterns and relationships in large amounts of data.

The concept of AI was first introduced in 1956 and has been evolved quickly due to the high advancements in the computer science, data analytical and machine learning. Although it has many benefits the usage of AI also raises important ethical, legal and social concern. Issues such as data privacy, IPR rights and etc.

CRIMINAL JUSTICE

In law, “criminal justice” refers to the entire systems used by the government to maintain law and order, protect people and punish who break the law. It consists of three main bodies which police, the court, and the correction(prisons). It deals with people who break the law. The main goal of the criminal justice system is to keep people safe, make sure laws are followed, and give fair punishments to those who commit crimes. It also works to protect the rights of the involved parties (victims and offenders).

The police are the ones with, whom the public have the direct contact with, they are the one who investigate crimes, arrest suspects, and work to keep the society safe from harm. Then the courts take over. They are the one who give punishment based on the crimes. Then the corrections systems steps in. this system aims to help the guilty avoid committing the crimes again. However, the system does face some challenges such as unfair treatment, delays in court, overcrowd prisons. In modern times, technology like Artificial intelligence(AI) is based to support criminal justice. they help in police investigation crimes faster, assist in court decisions and manage records. But it must be used very delicately to avoid mistakes or unfair outcome. In conclusion, justice system is important to maintain the peace and justice in the society.

IMPORTANCE OF CRIMINAL JUSTICE SYSTEM

The criminal justice system plays an important role in maintaining law and order in our society. The criminal justice is all about supporting the rule of law, protecting basic human rights, and punish the wrong doers fairly. The criminal justice works to prevent and investigate the crimes in the society. It is the one of the foundations in a society. A fair and effective criminal justice system helps the government and the people to build trust between them. The functions of criminal justice can also be seen as a distinct of criminology. The criminal justice system is flexible as it has evolved over time with new forms of punishments, rights and policies according to the society.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN CRIMINAL JUSTICE

Today, artificial intelligence (AI) has evolved to fit into and structure many sectors in our society. One of the main sectors which the AI has evolved is in criminal justice system. AI is now being used to many parts in the criminal justice system, like helping with investigations for the police and investigators and many more. Currently AI is being used to improve the need and fairness of the criminal justice.

THE USE OF AI IN CRIMINAL JUSTICE

In the early times, AI was only used for simple works like collecting crime records and helping with data analysis. As the AI improved, it began to help in investigations by doing facial features, voice recordings and DNA faster and more details. Now, AI is being used to suggest and being able to think on their own on crime investigations. From simple works the AI has evolved to helping the lawyers and judges with legal researches by finding and studying the cases and documents in a quick manner. As AI continues to transform, it can be both easy to use and it also should be used carefully to avoid making any mistake in punishment which may result in unfairness.

The various aspects of criminal justice are:

- **Predictive policing:**

It is a type of an AI, where it is used to help the investigator to help in predicting where and when the crime will happen. It does so by studying the past crimes like where and when it happened. For example: looking through an individual past records, like if they ever had any or did any crime in the past.

- **Facial recognition:**

It is a type of an AI which is used to find people by looking or scanning their face and comparing it to the faces stored in the data. It is used to find suspects and missing persons through advance image processing technology. This type of AI is mostly used in police and security agencies. This AI is not very trusted as this can be easily mistaken due to the data quality or other concerns. For example: locating missing person or collecting evidence of a suspect through CCTV cameras in the crime scene.

- **Risk assessment tools:**

These types of tools help the people or the criminal justice system decide if they are safe to be back in the society. These tools look into the records of the said person's history, behavior and other things to decide. This is mostly used in to decide on the suspects bail and punishment sentences. This device is not 100% reliable, if an unfair and biased data is given, the results may become unfair. For example: judges deciding on bail, parole or sentencing. One well known tool is called COMPAS, which gives a result based on how the said person's behavior is to commit the crime.

- **Automated case management:**

It is type of a system of AI which manages the cases in an organized manner in the criminal justice system. It helps in managing the case details, important dates, documents, and court schedules. This system is used to make the work of the police and jury faster and more organized. This system operates on its own. This is the most used modern ai in the current period by every country criminal justice system. For example: sorting the case information, send reminder, updating files. And protecting sensitive legal information from any threats.

WAYS AI ENHANCES THE OBJECTIVITY IN CRIMINAL JUSTICE

AI enhance the objectivity in criminal justice by handling the works of human in a faster manner more thoroughly than humans. It also improves the quality and the accuracy of the proofs analysis and investigations.

- **Helping law enforcement do their job better:**

This is one of the main reasons of using AI in criminal justice system. It has the ability to improve the efficiency of law enforcement better. The AI can analyze the data in a more organized and structured patterns allowing them to enforce the law in an easier manner.

- **Objective analysis**

Since the AI could not be influenced by human biases and judgments, this could lead to AI giving a more objective, fair and equal results. So, the judges in courts use AI devices like COMPAS (Correctional Offender Management Profiling for (Alternative Sanctions) for fair judgements like for sentencing recommendations and other important decisions.

- **Transparent analysis**

The analysis of an AI is transparent and explainable. This is so the users can always be able to look into the minor details of the data and how the results were made. This helps and ensures that the decision made by the results are not unfair under any means, this creates a trust in the system and belief among the people.

- **Crime pattern analysis:**

AI helps in identify the clues and connections from different views and cases. This helps in solving the unsolved cases and identify various networks in the systems. Its analysis the similar patterns of the previous crimes and forms results. Like identifying serial offenses, etc.

- **Digital evidence analysis:**

AI can go through a large amounts of data like emails, messages, videos in a faster speed than humans. This saves hundreds of hours of manual investigation. AI can also translate languages, and also decode encrypted data. AI is most useful in cybercrime, fraud and terrorism cases.

- **Judicial automation:**

AI can manage routine tasks in judiciary on its own, such as organizing the case files, scheduling the dates and hearing, legal researches, send reminders to the lawyers and court staffs related to their hearings.

- **Enhanced forensic accuracy**

AI also helps in investigating evidence like fingerprints , DNA , and other forensic data in a faster and more organized manner than the human. It also ensures that there are no human mistakes in the collected data. And provide more objective scientific results for the court proceeding.

- **Early detection of system issues**

As can go through a large amount of data than the humans to identify systemic patterns in the evidence , corruptions and etc. AI can detect systemic issues early which allows the institution to address those issues actively into a more objective justice system.

WAYS AI REINFORCES INEQUITIES IN CRIMINAL JUSTICE

Although AI enhance the objectivity in criminal justice systems, they also reinforce the existing inequities in the criminal justice system in many ways. Because since AI is being trained on showing the results by going through the history data which might be filled with more inequities of bias and unfairness, they can copy and can even cause a discrimination results for the crimes. AI can be useful in many positive ways but it is not always a trusted option to use. AI can sometimes unintentionally cause more social problem to the already existing ones.

Here are some ways:

- **Unfairness in training data**

Has stated above, AI system learns and uses the history data. If the past history data is filled with biased, unfair, racial and gender racial bias, the AI might learn ,collect , arrange and predict data in that similar manner. Example: if the history of arrest data shows data targeting of black communities, a predictive policing algorithm will continue to direct police patrol to those areas, which results in a loop of discrimination.

- **Discriminatory risk assessment tools**

These tools are used to predict if the there is any re-offending or to determine the bail for the people. Even often these tools show racial disputes even if they use the race directly in the learning data. It might impose high-risk in the society. For example: Studies have shown that the COMPAS tool in the U.S. was most likely to falsely flag black defendant as high¹

¹ The article of the studies is in the given link <https://blogs.ischool.berkeley.edu/w231/2021/07/09/a-compas-thats-pointing-in-the-wrong-direction/>

- **Feedback loops in predictive policing:**

Giving biased data and over-policing an area based on those unfair data, which may lead to more unfair treatments and which later gets include more biased data into the system. For example: in Chicago's "heat list" project, it was predicted and were wrongly labeled many black and Latino residents as "likely criminal" without any proofs, leading to unwanted watching.

- **Lack of transparency("black box" system)**

Many ai systems are not open for inspection , making it hard for defendant or lawyers to know how and why a decision was made and challenge the biased decisions. AI decision-making processes are not often fully explained Cleary. For example: In State V. Loomis(2016), the defendant argued he could not challenge his COMPAS risk score because the system's formula was secret("black box"),possibly violating his due process rights.

- **Unequal impact on minority groups**

AI system has always worked well for the major groups but not for the minority groups, women, or immigrants . This leads to unfair treatment and injustice based on the flawed predictions. For example: facial recognition has technology shown to have error rates up to 34% higher when identifying black or Asian faces compared to white faces.

- **Economic barriers to defending against AI bias**

The wealthier defendant can afford experts to challenge biased outcomes, while poorer defendants often cannot. This creates deep inequality in court outcomes. For example: in many cases, such as bail hearing, public defenders struggle to contest AI-based risk assessment due to lack of resources.

- **Poorly regulated AI use**

Many jurisdictions adopt AI tools quickly without stabling proper regulations, bias audits, or public transparency requirements. For example: a 2019 investigation by "The New York Times" found that many cities in the U.S. deployed predictive policing tools without testing them for fairness or discriminations.

ETHICAL AND LEGAL CONCERNS ON THE USE OF AI IN CRIMINAL JUSTICE

ETHICAL CONCERNS

- **Bias and discrimination**

Has the AI system learns from the history data. If the data has bias. The AI will continue that bias. This can cause unfair treatment of the certain groups even if human think that AI is just being more objective than the humans.

For example: if the black people were over-policed in the past, a predictive policing AI might wrongly label those areas as "high-risk" today's.

- **Lack of transparency**

There are many AI systems, mainly those deep learning ones, which are a set of complexes that even their creators cannot fully explain why they made a certain decision. this is a serious problem in criminal justice because people have a right to know why they were that results. If we can't see the why the AI made the decision, it's very hard to challenge it in court.

- **Privacy violations**

AI often needs to collect various huge amounts of personal data like criminal records, CCTV footage, phone data , social media activity. This creates a very serious ricks that people's private lives are being watched to closely even if they have done nothing wrong. It challenges basic human right like the right to privacy.

- **Dehumanization of justice**

Criminal justice should treat people with fairness, compassion, and context. When decision is based mostly on AI analysis (numbers, risk, score), it can take away the humanism.

LEGAL CONCERNS

- **Right to due process and fair trial**

A basic principle of law is that every individual has a right to a fair and transparent trial. If an AI recommends a longer sentence or denies bail without clear explanations, it can violate the above-mentioned rights.

- **Regulatory gaps**

AI technology has transformed very fast over time. Criminal justice laws in many countries are still based on older assumptions, they assume human make the important decision. So, there is a lack of specific AI rules to handle issues like transparency, bias correction, and ethical use.

- **Anti-discrimination laws**

Many countries have laws that banned discrimination based on races, gender, religion and etc. if an AI system is always giving harsher predictions or penalties to minorities, it can break those laws even if the bias was unintentional.

SUGGESTIONS AND SOLUTIONS

- **Ensure transparency**

AI systems must be explainable. The people should understand how and why such decision are made.

- **Eliminate bias.**

Regularly test and audit AI for racial, gender, social biases and correct them.

- **Human oversight**

AI should assist, not replace human judgment, since humans have the capability to look over every details emotionally and rationally. So, the final decisions should be made by the experienced persons.

- **Legal regulation**

Update the laws regularly to control the use of ai, set clear standards and define accountability for AI mistakes.

- **Right to appeal**

The people must have the right to challenge AI based decisions in court.

CONCLUSION

The use of AI in criminal justice holds great potential to improve effectively and fair, but it also has serious risks =, like bias, lack of transparency and violations of some human rights. To ensure AI serves justice rather than harms it. ultimately, technology must remain a tool that supports human judgment, fairness, and respect for individual rights in the justice system.

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