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AI IN CRIMINAL JUSTICE: A FORCE FOR PROGRESS OR A THREAT TO FAIRNESS?

AUTHORED BY - SRINIVASULA GOUTHAM

INTRODUCTION:

The criminal justice system serves as a cornerstone of a safe and secure society. It upholds the rule of law by deterring crime through punishment, protecting innocent individuals through fair trials and striving to rehabilitate offenders to prevent future harm. This detailed network of law enforcement ensures a balanced response to criminal activity, fostering a sense of security and order that allows communities to thrive. The criminal justice system hinges on a series of critical decisions made at every stage. From law enforcement on the streets to judges in courtrooms, these choices determine who is investigated, arrested, charged and ultimately punished. Ideally, these decisions are made fairly, objectively and based on a thorough examination of evidence. However, human biases and limitations creep into the process. Enter Artificial Intelligence (AI), a rapidly developing technology with the potential to revolutionize decision-making within the criminal justice system. AI can analyse vast datasets and identify patterns invisible to the human eye and has the potential to lead to fairer and consistent outcomes. However, it is pertinent to understand that AI has its disadvantages and should be taken into consideration before using it in the decision-making in the criminal justice system.

In this article, I will establish the potential of AI in moving the criminal justice system in both positive and negative directions, based on the way it's used. I argue that the usage of AI in decision-making in the criminal justice system is progressive but has its limitations.

AI AND ITS PROGRESS:

AI has been booming in the current times. Andrea Roth in her article "Trial by Machine" examines the growing application of artificial intelligence (AI) in the criminal justice system.[1] In examining its use in areas such as evidence analysis and sentence, the author emphasizes the creation of AI-driven decision support systems that aid judges. This analysis reflects a rising recognition of AI's significance in these evaluations, as strictly clinical and retributive

[1] Andrea Roth, *Trial by Machine*, 104 GEORGETOWN LAW JOURNAL 1, 2-25 (2016).

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approaches are giving way to probabilistic and actuarial assessments in penology. The growth of "truth-in-sentencing" legislation and associated parole board guidelines which may incorporate AI decision-making are also discussed in detail. The author also looks at the application of AI software in forensic diagnosis and interpretation, speculating about a future in which the need for eyewitness testimony to prove guilt may be lessened. Nonetheless, the author highlights that a significant factor in deciding whether AI systems are accepted as reliable sources of evidence is institutional dynamics and deeply held beliefs inside the legal system. By providing instances of faulty computer-assisted legal reasoning in administrative law and faults found in software used for sentencing under federal guidelines, the author admits the possibility of errors in AI.

The criminal justice system works with a plethora of data, ranging from witness accounts and crime reports to DNA evidence and recurrence rates. In order to increase productivity and data analysis in these duties, artificial intelligence (AI) provides a potent set of tools that could result in a more effective and efficient legal system. Here's an overview of several important fields where artificial intelligence can have a big impact:

Automating Repetitive Tasks:

The legal system is burdened by a multitude of time-consuming and repetitive tasks. Data entry, case management, and evidence assessment are just a few examples that can bog down progress and limit the focus on core legal issues. Artificial intelligence (AI) offers a powerful solution, automating these tasks and freeing up valuable time for human law enforcement officials and legal professionals. Imagine a scenario where AI systems handle the initial drudgery of data entry. Police reports, witness statements, and case documents can be automatically scanned and categorised, saving officers and lawyers countless hours spent on manual data input. This allows them to dedicate more time to complex investigations, strategic case planning, and client interaction. Beyond data entry, AI can delve into the heart of legal work: evidence assessment. AI-powered tools can analyse vast amounts of evidence, including witness testimonies, video footage, and digital records. These tools can identify patterns, inconsistencies, and potential leads that human reviewers might miss due to time constraints or cognitive biases. For example, AI might detect inconsistencies in witness accounts based on subtle language cues or flag inconsistencies in timelines across different pieces of evidence. This can significantly expedite investigations and direct human investigators towards areas requiring closer scrutiny. A prime example of AI automation in action is Kira Systems. This company offers AI-powered legal review tools that automate the tedious process of contract analysis. By using natural language

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processing (NLP), Kira Systems can extract key information from contracts, identify potential risks or clauses requiring negotiation, and highlight areas for further review.[2] This not only saves lawyers significant time but also improves the accuracy and consistency of contract reviews.

Enhanced Crime Pattern Detection:

Law enforcement has traditionally relied on detective work and patrol strategies to combat crime. However, Artificial Intelligence (AI) offers a powerful new approach: proactive crime prevention through pattern recognition. AI algorithms can analyze vast datasets of historical crime statistics, including locations, times of day, types of crimes committed, and even factors like gang activity or repeat offenders. By examining through this information, AI can identify hidden connections and emerging trends that human detectives might miss due to cognitive limitations and the sheer volume of data. Imagine a system that can not only pinpoint areas with historically high crime rates but also predict future hotspots. AI can detect seasonal fluctuations in crime (e.g., property crimes increasing during holidays), recognize patterns associated with specific criminal activities (e.g., identifying burglary methods used by serial offenders), and even account for external influences like social media activity that might signal gang activity or planned violence. This allows law enforcement to shift from reactive response to proactive prevention. By anticipating high-risk locations and potential criminal activities, resources can be deployed more effectively. This could involve strategically placing plainclothes officers or mobile surveillance units in predicted hotspots, increasing foot patrols in vulnerable areas during high-risk times, or even implementing targeted sting operations to disrupt criminal enterprises before they strike. Pattern recognition, which has been improved by AI and machine learning, is essential for law enforcement's threat assessment and strategic planning. It facilitates the strategic distribution of resources, patrol scheduling, and the use of crime prevention initiatives by assisting in the identification of crime patterns, hotspots, and common criminal tactics.[3]

Improved Data-Based Decision Making:

To create risk evaluations, AI may examine enormous databases containing information on social, demographic and criminal histories. Decisions regarding parole eligibility, sentence,

[2] Technology Evaluation Centres, Kira Systems Reviews, Pricing and Features - 2024 (technologyevaluation.com) (last visited Mar. 24, 2024).
[3] Sabine Gless, *AI IN THE COURTROOM: A COMPARATIVE ANALYSIS OF MACHINE EVIDENCE IN CRIMINAL TRIALS*, 51 GEORGETOWN LAW JOURNAL 195, 197-199 (2020).

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and pre-trial detention may be made using the results of these evaluations. Although there may be biases associated with these instruments, they can provide judges and parole boards with insightful information that helps them make better decisions. Also, the judicial system, while striving for fairness, is not immune to human biases. Landmark cases like Mahmood Farooqui v State,[4] where a woman's education and other background influenced the court's perception of her ability to deny consent, exemplify this challenge. Artificial intelligence (AI) has the potential to offer a valuable tool in mitigating such biases. AI algorithms, when trained on comprehensive datasets devoid of personal characteristics, can analyze evidence and legal precedents more objectively. This could potentially reduce the influence of unconscious biases that can creep into human decision-making.

Streamlining Evidence Analysis:

Artificial intelligence could help when forensic professionals are assessing complex evidence including DNA samples and video footage. AI systems can identify trends and speed up the analysis process resulting in quicker case resolutions. AI can also assist in locating tiny pieces of evidence that humans could possibly overlook, which could result in breakthroughs in cold cases. For example, Clearview AI has become very relevant in the USA and is used around 1 million times by the US police. "Clearview's system allows a law enforcement customer to upload a photo of a face and find matches in a database of billions of images it has collected. It then provides links to where matching images appear online. It is considered one of the most powerful and accurate facial recognition companies in the world".[5]

Beyond facial recognition, AI can also be applied to other areas of forensic science. For instance, AI algorithms can analyse vast datasets of fingerprints to identify patterns and potential matches more efficiently. In DNA analysis, AI can assist in interpreting complex genetic profiles and identifying potential suspects. Additionally, AI-powered systems can analyze video footage to detect anomalies, track objects, and enhance image quality, aiding in the investigation of crimes such as robberies and assaults. These applications of AI have the potential to revolutionize forensic science by improving the speed, accuracy, and efficiency of evidence analysis.

[4] Mahmood Farooqui v. State (Govt. of NCT of Delhi), MANU/DE/2901/2017.
[5] James Clayton & Ben Derico, *Clearview AI used nearly 1m times by US police, it tells the BBC,* BBC (Mar. 28, 2023), Clearview AI used nearly 1m times by US police, it tells the BBC.

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Enhanced Communication and Collaboration:

Language obstacles can be solved by AI-powered translation systems, allowing law enforcement organizations on other continents to communicate more easily. This is essential for international investigations and collaboration in the fight against transnational crime. AI can also be used to establish centralized databases that are only accessed by authorised staff and would enhance communication and cooperation amongst the criminal justice system. A real-life example of progress in this area is INTERPOL's I-24/7 secure global police communication system.[6] This system allows law enforcement agencies from member countries to share information and coordinate investigations in real time. While not solely reliant on AI for translation, such systems can be further enhanced by integrating AI-powered translation tools to streamline communication across language barriers. Language obstacles can be solved by AI-powered translation systems, allowing law enforcement organizations on other continents to communicate more easily. This is essential for international investigations and collaboration in the fight against transnational crime. AI can also be used to establish centralized databases that are only accessed by authorised staff and would enhance communication and cooperation amongst the criminal justice system. A real-life example of progress in this area is INTERPOL's I-24/7 secure global police communication system.[7] This system allows law enforcement agencies from member countries to share information and coordinate investigations in real time. While not solely reliant on AI for translation, such systems can be further enhanced by integrating AI-powered translation tools to streamline communication across language barriers. Beyond facilitating communication between law enforcement agencies, AI in translation can also assist with witness interviews and victim support. For instance, in a situation where a witness from a different country provides crucial information for a case. AI translation tools can break down language barriers in real-time, allowing investigators to gather accurate and timely statements. Similarly, for victims of crime who speak a different language, AI translation can ensure they receive proper support and understand their rights throughout the legal process. This fosters trust and cooperation within the criminal justice system, ultimately contributing to better outcomes for everyone involved.

[6] Naciones Unidas, ctc_cted_factsheet_law_enforcement_dec_2021.pdf (un.org) (last visited Mar. 1, 2024).
[7] Naciones Unidas, ctc_cted_factsheet_law_enforcement_dec_2021.pdf (un.org) (last visited Mar. 1, 2024).

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THE SHADY SIDE OF AI: BIAS, TRANSPARENCY AND INEQUALITY:

Even though AI has a lot of potential for use in criminal justice, there are still concerns about bias, there are still concerns about bias, lack of transparency, and the possibility of escalating already existing disparities. Here's a closer look at these important concerns:

Biases Lurking in Data:

The quality of AI algorithms depends on the quality of the training data. Unfortunately, when real-world data is used in AI systems for criminal justice, it frequently replicates societal biases, producing unfair results. Biases like historical biases can creep in. For example, AI may be able to forecast future crimes based on police arrest data that reflects racial profiling in neighbourhoods where minorities predominate. The problem lies with the data the algorithms feed upon. For one thing, predictive algorithms are easily skewed by arrest rates. For example, PredPol is a predictive policing software used by some police departments across the US and it analyzes historical crime data to identify areas with a higher likelihood of future crime. "According to US Department of Justice figures, you are more than twice as likely to be arrested if you are Black than if you are white. A Black person is five times as likely to be stopped without just cause as a white person". [8] Lack of information about socio-economic characteristics may distort risk evaluations, thereby ignoring low-risk individuals from underprivileged families. Consequentially, increased police presence and surveillance in minority areas might result from algorithmic prejudice, which can exacerbate feelings of alienation and mistrust. "The state's use of such proxies in criminal law to reduce false negatives and increase efficiency also conforms to a more general pattern of simplifying legal decision-making into determinable elements, with an eye toward efficiency and accuracy, but a tendency to oversimplify or entrench existing biases."[9]

Moreover, the reliance on historical data can perpetuate existing systemic biases. For instance, if an algorithm is trained on arrest data that disproportionately targets marginalized communities, it may erroneously predict higher crime rates in those areas. This can lead to a self-fulfilling prophecy, as increased police presence and surveillance can exacerbate tensions and lead to more arrests. Additionally, the lack of diversity in the development teams behind these algorithms can contribute to blind spots and biases.

[8] Will Doughlas Heaven, *Predictive policing algorithms are racist. They need to be dismantled*, MIT TECHNOLOGY REVIEW (Jul. 17, 2020), Predictive policing algorithms are racist. They need to be dismantled. | MIT Technology Review.
[9] SABINE, *supra* note 3, at 211.

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The Black Box of AI Decisions:

A large number of AI algorithms used in criminal justice lack transparency in their decision-making process. "This situation is commonly referred to as the black box problem in AI. Without understanding how AI reaches its conclusions, it is an open question to what extent we can trust these systems".[10] This lack of transparency raises various issues. Questions regarding fairness and due process arise when human monitoring is rendered less effective due to a lack of comprehension of the reasoning behind AI choices. "The use of technology with inherent black box problems, i.e., an inability to explain a certain result, in a criminal proceeding comes at a price. Triers of fact will have to decide whether to trust an AI-generated statement that can only partially be explained by experts."[11]

Recent studies (2018-2019) by MIT, Microsoft Research, and the US National Institute of Standards and Technology (NIST) revealed significant racial and gender biases in facial recognition algorithms. These algorithms, often used by law enforcement for identification purposes, exhibited a higher error rate when analysing faces of colour, particularly for women. The largest error rate, reaching 35%, was identified for female faces of colour according to the MIT/Microsoft study.[12] This highlights a crucial concern regarding "black box" AI decisions. Facial recognition algorithms function as black boxes because the internal decision-making processes are not readily apparent. These studies demonstrate how such opaque AI systems can perpetuate biases within the training data, leading to discriminatory outcomes in real-world applications.

AI Amplifying Inequality:

If AI systems are not properly developed and applied, they run the potential of escalating already existing racial and socio-economic disparities in the criminal justice system. Minorities may be subjected to harsher penalties if AI risk assessments repeatedly classify them as high-risk, which would result in additional data points supporting the initial prejudice in subsequent training cycles. Low-income people or those who live in high-crime regions may be unfairly disadvantaged by AI algorithms that rely on variables like zip code or work history. AI-driven risk evaluations may be a factor in the increase in mass imprisonment that unfairly affects

[10] Warren J. von Eschenbach, *Transparency and the Black Box Problem: Why We Do Not Trust AI,* 34 PHILOSOPHY AND TECHNOLOGY 1607, 1607-1622 (2021).
[11] SABINE, *supra* note 3, at 207.
[12] Sidney Perkowitz, *The Bias in the Machine: Facial Recognition Technology and Racial Disparities,* MIT SCHWARZMAN COLLEGE OF COMPUTING (Feb. 06, 2021), The Bias in the Machine: Facial Recognition Technology and Racial Disparities · Winter 2021 (pubpub.org).

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minority communities. For instance, in Detroit, a growing trend of using facial recognition software by police led to a wrongful arrest in January 2020.[13] Robert Williams, an African American man, was mistakenly identified by the software as a suspect who stole watches from a Shinola store. This incident wasn't isolated, as Michael Oliver and Nijeer Parks faced similar situations in 2019 due to facial recognition misidentification. These cases highlight the potential dangers of this technology, especially when it leads to wrongful accusations.

However, one way to improve algorithmic decision-making in criminal justice to ensure racial equity is to use risk assessment tools that are neutral concerning race. For example, the Public Safety Assessment (PSA) is a tool that assesses an individual's risk factors without taking into account gender, race, or economic conditions.[14]

Another improvement could be to reduce the reliance on biased data in algorithms. The ab origine collection of discriminatory data, such as mapping certain urban areas or collecting data on potential criminals or victims, can consolidate prejudices and lead to unequal treatment. Ensuring that algorithms are not based on discriminatory data can help prevent bias and promote racial equity.[15]

In addition to these measures, it is crucial to implement robust auditing and oversight mechanisms to monitor the performance of AI algorithms in the criminal justice system**.** Regular audits can help identify and address biases that may emerge over time. Moreover, transparency in the development and deployment of AI systems is essential to ensure public trust and accountability. By making the algorithms and data used in decision-making processes public, stakeholders can scrutinize their fairness and identify potential sources of bias. Furthermore, it is imperative to involve diverse teams in the development and testing of AI systems to ensure that they are representative of the populations they serve. By incorporating diverse perspectives, developers can help mitigate biases and ensure that the algorithms are equitable and effective. Ultimately, the goal is to create a criminal justice system that is fair, just, and free from racial and socioeconomic disparities.

[13] *Id.*
[14] Maria Stefania Cataleta, *Humane Artificial Intelligence: The Fragility of Human Rights Facing AI* 5-7 (East-West Center, Working Paper No. 2, 2020).
[15] *Id.*

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Conclusion:

The integration of Artificial Intelligence (AI) into the criminal justice system presents a fascinating paradox. On one hand, AI offers a multitude of progressive tools: automating repetitive tasks, streamlining workflows, and leveraging data analysis to predict and prevent crime. From Kira Systems' automated contract review to AI-powered crime prediction models, the potential for efficiency and proactive crime-fighting is undeniable. On the other hand, the limitations and ethical considerations surrounding AI require careful attention. Biases within training data can perpetuate discrimination, while the opaque nature of some algorithms hinders accountability. Additionally, the spectre of AI replacing human judgment entirely raises concerns about fairness and the erosion of due process. The path forward lies in acknowledging both the promise and peril of AI. We must embrace AI as a powerful supplement to human expertise, not a replacement. Law enforcement officials and legal professionals must remain at the steering, utilizing AI tools for data analysis, pattern recognition, and communication facilitation, while reserving human judgment for critical decision-making and ethical considerations. Furthermore, robust regulations and oversight mechanisms are crucial. Data privacy must be a top priority, with safeguards in place to prevent misuse and discrimination. Transparency in AI algorithms needs to be addressed, ensuring explainable AI models that allow for human scrutiny and accountability.

Ultimately, AI in criminal justice holds immense potential to improve efficiency, reduce crime, and streamline legal processes. However, responsible development, ethical considerations, and unwavering human oversight will be paramount in ensuring that AI serves as a force for progress, not a detriment to the very justice system it seeks to enhance.