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<center>Artificial Intelligence's Role in Criminology</center>

<center>Article #1</center>

Introduction

Raed S.A. Faqir's *Digital Criminal Investigations in the Era of Artificial Intelligence: A Comprehensive Overview* in the International Journal of Cyber Criminology discusses the concerns of integrating Artificial Intelligence into digital forensic investigations.

What led to the Research?

Research had begun when the concern for the credibility of artificial intelligence was brought into question when taking into account that many AI technologies utilize a vast amount of information that may not come from a reputable source such as social media platforms and network records. Researchers wanted to scrutinize the utilization of artificial intelligence to make sure its use is in line with the legal framework of criminal investigation proceedings. As described in the article, "This study attempts an in-depth analysis of the alignment of AI tools with established legal frameworks, and how this alignment impacts the pursuit of justice, and whether such AI advancements would help in the criminal investigations of cybercrimes" (Faqir, 2023).

How was the Research Conducted?

To evaluate the impact of integrating artificial intelligence into investigations, researchers focused on a qualitative approach by observing the use of artificial intelligence in investigations; along with a legality-focused research method that avoids opinionated material. As described by Faqir, "In the pursuit of data acquisition, this research adopted the "normative juridical research method" and the "scientific research method," both firmly established techniques in the domain of legal studies" (Faqir, 2023).

The data utilized was primarily gathered from legal documentation and prior investigations that used AI. Information was also gathered from other scholarly publications on artificial intelligence's impacts on other fields such as Network security, Psychology, and the Medical Industry. This interdisciplinary and multimethod approach helps draw insight from multiple disciplines and their unique experiences with the integration of AI technology.

How Does Artificial Intelligence Affect the Principles of Social Science?

The concerns with integrating artificial intelligence into our legal system are warranted as it grants technology a larger impact on how the nation is governed and our interactions with the legal system. Staying true to the principles of the social sciences is necessary. Staying objective and incorporating empiricism improves the credibility of investigations assisted by artificial intelligence. As described in the researchers' methods, opinionated data was unnecessary in determining the implications of integrating AI. The research aims for parsimony by offering a more simple explanation of the concerns of integrating artificial intelligence into the legal framework so that the common goal for professionals interacting with AI in the field is understood.

Not only could Artificial intelligence determine the cause/motive in an investigation, but it is also subject to determinism. Questioning concerns like this topic is important as accepting one explanation, especially from a technology that utilizes data from a multitude of sources, would be irresponsible without questioning its credibility and the effect on the rights of the individual.

It would be challenging to determine a "motive" as the subject is artificial intelligence, but we can question where the tool is pulling data and why that data is there. We could link machine learning and the concept of Behavioral theory together as AI learns from the behaviors and data other individuals have expressed. "The results an AI can produce can be susceptible to social biases from the data that it is learning from. AI bias, also referred to as machine learning bias or algorithm bias, refers to AI systems that produce biased results that reflect and perpetuate human biases within a society, including historical and current social inequality" (IBM data and AI Team, 2023).

How Would This Study Affect Society?

Data utilized by AI-assisted investigations may not uphold the objectivity required in legal proceedings and can incorporate unnecessary biases that are present in society.

Because artificial intelligence can pull data from historical documentation, it may not take into account the most updated amendments. For example, the Jim Crow laws that mandated racial segregation. Artificial Intelligence is susceptible to opinionated views on politics, race, and gender.

This study brings to light the importance of evaluating the incorporation of modern technology into established institutions; specifically digital forensic investigations. Reviewing the incorporation of modern technologies is necessary for upholding constitutional rights and deterring the use of opinionated and biased information in the legal system. A legal system that utilizes bias from an automated technology is unfair and will create hostility between the system and society.

This study also warrants the question of the validity of the works on the Internet and how it affects these AI technologies' abilities. The concern for filtering out misinformation while not

infringing on free speech is not a new discussion. Making an effort to call out the biases and misinformation online may improve the quality of these AI technologies in the legal space.

Final Thoughts

The integration of modern technologies such as Artificial intelligence is convenient for the fast-paced society that we live in today. It is a technology that can create a sense of safety knowing that it can automate the process of resolving a legal matter. However, leaving this technology without evaluating how it affects our interactions with the legal institution, can impede the legal system's purpose to uphold accurate justice while preventing the infringement of constitutional rights.

Citations

Fruhlinger, J. (2022, August 31). *Stuxnet explained: The first known cyberweapon*. CSO Online.
https://www.csoonline.com/article/562691/stuxnet-explained-the-first-known-cyberweap
on.html#:~:text=Stuxnet%20is%20a%20powerful%20computer,about%20its%20design
%20and%20purpose.
DOI: 10.5281/zenodo.4766 70 6

Team, I. D. and A. (2023, October 16). *Shedding light on AI bias with real-world examples*. IBM
Blog. https://www.ibm.com/blog/shedding-light-on-ai-bias-with-real-world-examples/