

Digital Criminal Investigations in the Era of Artificial Intelligence: A Comprehensive Overview

Kayla Thompson

Professor Aslan

Old Dominion University

March 13, 2024

Digital Criminal Investigations in the era of Artificial Intelligence

Artificial intelligence has skyrocketed within the last 20 years of technological advancement aiding integrated digital criminal investigations and legal proceedings. In the study they suggest the importance of implementing Artificial intelligence within the sectors of criminal justice in aspects of release decisions, sentences, identifying criminals, and criminal patterns. The study also alludes to optimizing the utilization of AI in digital criminal investigations through a system of diverse data sources to facilitate well-informed decision-making within the justice system. This implementation of artificial intelligence-powered biometric identification can prevent criminal activities using visual analysis.

Method

The research investigates the potential integration of artificial intelligence in criminal digital investigation using the qualitative methodology. This develops a theoretical framework for applying AI techniques in criminal investigations. The researchers use descriptive analysis and analytical research to support their argument of implementing AI. Data methods include normative juridical and scientific research methods using legal documents and legislative opinions and secondary sources like literature review on forensic investigation and criminal procedural laws focusing on AI integration. Literature review was conducted using reputable law journals and databases. AI techniques have several applications to assist the legal agencies in combating cybercrimes like computational intelligence, neural networks, artificial immune systems, machine learning, data mining, pattern recognition, and more. Neural networks help

detect denial of service detection, computer worm detection, spam, and malware detection.

Pattern recognition utilizes methods such as image recognition to uncover real concealed details; the software efficacy depends on managing extensive data through statistical analysis and probability. These deal with grammatical structures and facial patterns to detect patterns.

Bioprinting plays an important role in criminal investigations by aiding suspect identification and connecting individuals to crimes through biometric data like fingerprints, DNA, voice, and behavior.

Results and Conclusion

In addition the study highlights the widespread use of artificial intelligence techniques in law enforcement for protecting against cybercrime specifically in facial recognition and vocal analysis to evaluate criminal patterns amongst society. AI assists law enforcement in various legal documents, arrest, release, and sentencing. AI enhances criminal justice surveillance by analyzing real-time footage to identify potential criminal actions. Machine learning advances case data analysis, modeling, and organization resulting in informed decisions for various legal issues. Criminal courts in Anglo-Saxon and Latino legal systems should prioritize digital evidence as a condition for admissibility.

The study formulates a series of recommendations regarding the use of artificial intelligence. Prioritizing high-risk cases by leveraging diverse data sources, using AI to predict crime patterns in an area, potential suspects, effectiveness of AI-driven biometric identification like facial recognition and vice analysis, surveillance systems, and enhancing case management with machine learning capabilities like data analysis and decision optimization.

Discussion

The topic relates to the principles of social sciences because we look at this from a philosophical, human behavior, social institutions, culture, and interaction standpoint to understand why there is a need of Artificial intelligence especially in law enforcement to grant citizens right to fair trial and also serves as evidence to help with court hearings, rulings, and sentences. This impacts marginalized peoples like the African-American and Latin community tremendously in the years of hate crimes and racism. Many African-Americans and Latin people are subjected to unfair trials and are falsely prosecuted for crimes they had not committed because of the lack of evidence to support their innocence.

Latin and African-American peoples are marginalized in the face of justice in America which is why there is a push to implement artificial intelligence in law enforcement. This relates to the weeks PowerPoints because of the discussion of cyber criminal subculture committing different types of cyber offenses many of the patterns noticed appear to be teams of people, individuals can easily communicate through email, criminals can interact with people from a safe physical distance through the internet that can be sex offenders or worse. This can be minimized if the implementation of Artificial intelligence is incorporated into law enforcement because they will be able to track the patterns of these criminals to understand their movements. The overall contribution of this study to society is to inform and persuade law enforcement to implement artificial intelligence and the benefits of it.

References

Faquir , Raed. "International Journal of Cyber Criminology." *Cyber Criminal Journal* ,
www.cybercrimejournal.com/previousissue.html. Accessed 26 Mar. 2024.

<https://cybercrimejournal.com/menuscript/index.php/cybercrimejournal/article/view/189/71>