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Cybersecurity and the Social Sciences

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A Social Science Approach to Forensic Investigations

What is a Digital Forensics Investigator?

A Digital Forensics Investigator plays a major role in cybersecurity and cyberwarfare. Cooperating with law enforcement, they collect, analyze, and preserve digital evidence to aid in the investigations of cybercrimes and security incidents. Despite the large focus on technical expertise, Digital Forensics Investigators are intertwined with the field of social sciences. Professionals must take into account external aspects when investigating an incident; Understanding human behaviors, adherence to legal and ethical standards, effective communication, and consideration of cultural and societal contexts.

How the Career Benefits Society

Digital Forensics is a critical addition to the justice system and one that looks to become more prevalent in the future. As suggested by Lillis, the increased reliance on technology has increased the likelihood of digital devices playing a larger role in criminal activity and in investigations (Lillis et. al., 2016). Alongside law enforcement, professionals contribute to the preservation of justice and critical infrastructure that fulfill our basic and psychological needs. As the internet becomes a staple part of our daily lives, experts equipped to navigate the complexities of cyber technologies ensure the safety of citizens and maintain their trust in the digital world.

Relation to The Principles of Social Science

When delving into the operations of Digital Forensics Investigators, the adherence to the principles of social science becomes evident. While investigating a cyber incident, maintaining an objective mindset is key to effectively resolving cases. However, a flexible mind helps in adapting to new threats that push the limitations of cybertechnologies. Utilizing digital evidence, interviewing witnesses, and considering human factors to determine connections to the case is a fundamental procedure in investigations. Investigators must also incorporate rational legal decisions to protect the rights and respect of the people.

Throughout their investigations, Digital Forensics Investigators produce reports documenting their findings. Similar to scientific research reports, these documents must remain objective and relevant as they may also serve as archival documents that benefit future investigations. Understanding how critical quality reports are, Forensic Science International's *On the importance of standardising the process of generating digital forensic reports* article details the push to a standardized format of reporting investigations that minimize disparities between forensic organizations' documents (Karie et. al, 2019). These reports serve as testimony in legal proceedings; emphasizing the need to be able to communicate investigator knowledge to the court system in terms understood by the public.

Investigating the Motives and Human Factors

When investigators incorporate the perspectives of psychological motives, they can correlate the motives to cybercrimes. It is advised that investigators consider understanding the motives of suspects and the behaviors of the victims as cyber-attacks are suggested to be social events that are associated with real-world conflict (Kumar et. al., 2016). By piecing together the

motives and factors of the case, investigators gain valuable insights that contribute to the effective resolution of cybercrimes.

While it was considered to integrate artificial intelligence into investigations to make the identification of offenders faster, it was questioned whether the gathering of data this way posed a legal challenge that infringed upon privacy laws (Dunsin et. al., 2024). The use of AI in investigations may perpetuate discrimination against marginalized groups if based on discriminatory legal documentation (Upile, 2023). Technology-based security and investigation may not have the ability to call out their own biases as a professional would.

Conclusion

In conclusion, the interdisciplinary relationship between Digital Forensics and the social sciences enhances the accuracy and ethical integrity of digital forensic investigations. By integrating social science principles, Digital Forensics Investigators contribute to a safer and more secure digital environment.

Citations

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