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The Forensic Swing of Things: The Current Legal and Technical Challenges of IoT Forensics

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Abstract : The inability of organizations to put in place management control measures for Internet of Things (IoT) complexities persists to be a risk concern. Policy makers have been left to scamper in finding measures to combat these security and privacy concerns. IoT forensics is a cumbersome process as there is no standardization of the IoT products, no or limited historical data are stored on the devices. This paper highlights why IoT forensics is a unique adventure and brought out the legal challenges encountered in the investigation process. A quadrant model is presented to study the conflicting aspects in IoT forensics. The model analyses the effectiveness of forensic investigation process versus the admissibility of the evidence integrity; taking into account the user privacy and the providers’ compliance with the laws and regulations. Our analysis concludes that a semi-automated forensic process using machine learning, could eliminate the human factor from the profiling and surveillance processes, and hence resolves the issues of data protection (privacy and confidentiality).

Keywords : cloud forensics, data protection Laws, GDPR, IoT forensics, machine Learning
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