



DIGITAL INVESTIGATION

The International Journal of Digital Forensics & Incident Response

AUTHOR INFORMATION PACK

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DESCRIPTION

Digital Investigation covers a broad array of subjects related to crime and security throughout the computerized world. The primary pillar of this publication is digital evidence, with the core qualities of provenance, integrity and authenticity.

This widely referenced publication promotes innovations and advances in utilizing digital evidence for legal purposes, including criminal justice, incident response, cybercrime analysis, cyber-risk management, civil and regulatory matters, and privacy protection. Relevant research areas include forensic science, computer science, data science, artificial intelligence, and smart technology.

This journal is used by investigative agencies and forensic laboratories, computer security teams, practitioners, researchers, developers, and lawyers from industry, law enforcement, government, academia, and the military to share their knowledge and experiences, including current challenges and lessons learned in the following areas:

Research and development: Novel research and development in forensic science, computer science, data science, and artificial intelligence applied to digital evidence and multimedia. New methods to deal with challenges in digital investigations, including applied research into analysing digital evidence and multimedia, exploiting specific technologies, and into preparing for and responding to computer security incidents.

Cyber-criminal investigation: develop new methods of online investigation and analysis of financially motivated cyber-crime such as banking Trojans, phishing, ransomware and other forms of cyber-fraud. In addition, researching future criminal activity involving peer-to-peer payments and crypto currencies.

Cyber-risk management: Improved ways of using digital evidence to address security breaches involving information systems, methods to find zero day attacks and to perform cyber threat intelligence. The techniques and findings of digital investigations are essential in drawing post-incident conclusions, which are vital feedback components of the security policy development process, and managing risk appetite.

Case Notes: Brief investigative case studies with practical examples of how digital evidence is being used in digital investigations, forensic analysis, and incident response. Case Notes can also describe current challenges that practitioners are facing in cybercrime and computer security, highlighting areas that require further research, development or legislation. The format for Case Notes is simple

and short: case background, any technical or legal challenges, the digital evidence involved, processes and/or tools used, and outcomes (e.g., solutions, barriers, need for R&D).

Scientific practices: Novel approaches to strengthening the scientific foundation and rigor of digital investigations, and to increasing the reliability of and confidence in processes, analysis methods, results, and conclusions involving digital evidence.

Effective practices: Studies that assess new practices in digital investigations and propose effective approaches to handling and processing digital evidence.

Survey papers: Discussion of current methods and future needs relevant to digital investigations, including analysing digital evidence and multimedia from computers, smart technology, mobile phones, memory, malware, network traffic, as well as systems that support enterprises, telecommunications, and satellites. In addition, advanced approaches to analysing digital evidence and multimedia, including novel applications of artificial intelligence and data analytics.

Application analysis: Novel approaches to analysing applications on mobile devices and computers from a digital forensic perspective. Analysis may include configuration and log data, network telemetry and cloud storage, live memory artifacts, and indications of compromised and abused applications. Proposed methods should go beyond a single version of an application and be generalized to multiple versions of an application, or a general category of applications (e.g. social networking), on multiple platforms (Android, iOS). In addition, strong work in this area will extend the functionality of an existing open source tool, or provide a new open source tool. Also of interest are approaches to performing validation and quality assurance of forensic software that must be updated frequently to support new applications. Such papers should be structured around investigative questions that are commonly encountered in digital investigations, concentrating on the users and their activities rather than only on technical elements.

Tool reviews: Evaluation and comparison of specialized software and hardware used to preserve, survey, examine, analyse or present digital evidence and multimedia, deepening our understanding of specific tools, and highlight any needed enhancements.

Future challenges: Analysis of new technologies, vulnerabilities and exploits which may create opportunities for criminality and/or computer security incidents, but which require further work in order to determine how their use can be investigated and the evidential opportunities they may create.

Registered reports: Studies that assess methods critically, and evaluating the reliability, statistical power, and reproducibility of results. Such reports can include tests and experiments with negative results, not just positive.

Legal analysis and updates: Carefully considered commentary by legal experts on recent cases involving digital evidence, forensic applications and computer security risk management, relevant legal developments, privacy issues, and legislative limitations.

Evidence accessibility: exploring safe, fair, and feasible methods of acquiring digital evidence from protected sources such as DRM, encrypted traffic, encrypted storage, and locked proprietary devices, while taking individual privacy and ethical aspects into consideration.

AUDIENCE

Digital Investigation will be essential reading for: Auditors, Information Security Officers, Forensic Accountants, Information Systems Managers, Independent Investigators, Lawyers, Fraud Examiners, Law Enforcement Officials, Systems and Data Security Analysts.

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