Machine Learning Forensics For Law Enforcement Security And Intelligence

Methods and Solutions
First International Conference, ICIIA 2021, Ota, Nigeria, November 25-27, 2021 : Revised Selected Papers
Confluence of AI, Machine, and Deep Learning in Cyber Forensics
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Advances in Digital Forensics XIV
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Machine Learning and Deep Learning in Real-Time Applications
Computer and Intrusion Forensics
How to Tell a Prince from a Frog
Concepts, Methodologies, Tools, and Applications
Dark Web Pattern Recognition and Crime Analysis Using Machine Intelligence
Cyber Warfare and Terrorism: Concepts, Methodologies, Tools, and Applications
Information Security Management Handbook, Volume 5
Advances in Malware and Data-Driven Network Security
14th IFIP WG 11.9 International Conference, New Delhi, India, January 3-5, 2018, Revised Selected Papers
ICPR 2018 International Workshops, CVAUI, IWCF, and MIPPSNA, Beijing, China, August 20-24, 2018, Revised Selected Papers
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Counter-Terrorism, Ethics and Technology
2020 13th International Conference on Systematic Approaches to Digital Forensic Engineering (SADFE)
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“The” Three Brides
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Advances in Digital Forensics VII
Machine Learning Forensics for Law Enforcement, Security, and Intelligence
Security Challenges, Technical and Ethical Issues, Forensic Investigative Challenges
Modern Principles, Practices, and Algorithms
From Reactive to Proactive Process, Second Edition

ANGIE MONROE

Methods and Solutions IGI Global
Implementing Digital Forensic Readiness: From Reactive to Proactive Process, Second Edition presents the optimal way for digital forensic and IT security professionals to implement a proactive approach to digital forensics. The book details how digital forensic processes can align strategically with business operations and an already existing information and data security program. Detailing proper collection, preservation, storage, and presentation of digital evidence, the procedures outlined illustrate how digital evidence can be an essential tool in mitigating risk and redusing the impact of both internal and external, digital incidents, disputes, and crimes. By utilizing a digital forensic readiness approach and stances, a company’s preparedness and ability to take action quickly and respond as needed. In addition, this approach enhances the ability to gather evidence, as well as the relevance, reliability, and credibility of any such evidence. New chapters to this edition include Chapter 4 on Code of Ethics and Standards, Chapter 5 on Digital Forensics as a Business, and Chapter 10 on Establishing Legal Admissibility. This book offers best practices to professionals on enhancing their digital forensic program, or how to start and develop one the right way for effective forensic readiness in any corporate or enterprise setting.
First International Conference, ICIIA 2021, Ota, Nigeria, November 25-27, 2021 : Revised Selected Papers Walter de Gruyter GmbH & Co KG
Shades of Blue - 30 Years of (un) Ethical Policing is an entertaining and interesting journey into the moral/ethical dilemmas that challenge police officers. It is written as the memoir of the main character and contains accounts of riveting events in the author's career. The authentic presentation places readers right in the middle of the action. If you have ever wondered about the real culture of law enforcement, this book lets you walk in their shoes. The author's street philosophy, acquired over 30 years as a police officer, makes for engaging and humorous reading.
Confluence of AI, Machine, and Deep Learning in Cyber Forensics John Wiley & Sons
The book first explores the cybersecurity’s landscape and the inherent susceptibility of online communication system such as e-mail, chat conversation and social media in cybercrimes. Common sources and resources of digital crimes, their causes and effects together with the emerging threats for society are illustrated in this book. This book not only explores the growing needs of cybersecurity and digital forensics but also investigates relevant technologies and methods to meet the said needs. Knowledge discovery, machine learning and data analytics are explored for collecting cyber-intelligence and forensics evidence on cybercrimes. Online communication documents, which are the main source of cybercrimes are investigated from two perspectives: the crime and the criminal. AI and machine learning methods are applied to detect illegal and criminal activities such as bot distribution, drug trafficking and child pornography. Authorship analysis is applied to identify the potential suspects and their social linguistics characteristics. Deep learning together with frequent pattern mining and link mining techniques are applied to trace the potential collaborators of the identified criminals. Finally, the aim of the book is not only to investigate the crimes and identify the potential suspects but, as well, to collect solid and precise forensics evidence to prosecute the suspects in the court of law.
Data Analytics in Project Management IGI Global
This volume constitutes selected papers presented at the First International Conference on Informatics and Intelligent Applications, ICIIA 2021, held in Ota, Nigeria, in November 2021. The 22 full papers were thoroughly reviewed and selected from 108 submissions. The papers are organized in the following topical sections: AI applications; information security; emerging technologies in informatics. .
Artificial Intelligence in Cyber Security: Impact and Implications CRC Press
This book presents a comprehensive study of different tools and techniques available to perform network forensics. Also, various aspects of network forensics are reviewed as well as related technologies and their limitations. This helps security practitioners and researchers in better understanding of the problem, current solution space, and future research scope to detect and investigate various network intrusions against such attacks efficiently. Forensic computing is rapidly gaining importance since the amount of crime involving digital systems is steadily increasing. Furthermore, the area is still underdeveloped and poses many technical and legal challenges. The rapid development of the Internet over the past decade appeared to have facilitated an increase in the incidents of online attacks. There are many reasons which are motivating the attackers to be fearless in carrying out the attacks. For example, the speed with which an attack can be carried out, the anonymity provided by the medium, nature of medium where digital information is stolen without actually removing it, increased availability of potential victims and the global impact of the attacks are some of the aspects. Forensic analysis is performed at two different levels: Computer Forensics and Network Forensics. Computer forensics deals with the collection and analysis of data from computer systems, networks, communication streams and storage media in a manner admissible in a court of law. Network forensics deals with the capture, recording or analysis of network events in order to discover evidential information about the source of security attacks in a court of law. Network forensics is not another term for network security. It is an extended phase of network security as the data for forensic analysis are collected from security products like firewalls and intrusion detection systems. The results of this data analysis are utilized for investigating the attacks. Network forensics generally refers to the collection and analysis of network data such as network traffic, firewall logs, IDS logs, etc. Technically, it is a member of the already-existing and expanding the field of digital forensics. Analogously, network forensics is defined as "The use of scientifically proved techniques to collect, fuses, identifies, examine, correlate, analyze, and document digital evidence from multiple, actively processing and transmitting digital sources for the purpose of uncovering facts related to the planned intent, or measured success of unauthorized activities meant to disrupt, corrupt, and or compromise system components as well as providing information to assist in response to or recovery from these activities." Network forensics plays a

significant role in the security of today’s organizations. On the one hand, it helps to learn the details of external attacks ensuring similar future attacks are thwarted. Additionally, network forensics is essential for investigating insiders’ abuses that constitute the second costliest type of attack within organizations. Finally, law enforcement requires network forensics for crimes in which a computer or digital system is either being the target of a crime or being used as a tool in carrying a crime. Network security protects the system against attack while network forensics focuses on recording evidence of the attack. Network security products are generalized and look for possible harmful behaviors. This monitoring is a continuous process and is performed all through the day. However, network forensics involves post mortem investigation of the attack and is initiated after crime notification. There are many tools which assist in capturing data transferred over the networks so that an attack or the malicious intent of the intrusions may be investigated. Similarly, various network forensic frameworks are proposed in the literature.

Privacy, Security And Forensics in The Internet of Things (IoT) CRC Press

Within modern forensic science and criminal investigation, experts face several challenges including managing huge amounts of data, handling miniscule pieces of evidence in a chaotic and complex environment, navigating traditional laboratory structures, and, sometimes, dealing with insufficient knowledge. These challenges must be overcome to avoid failure in investigation or miscarriage of justice. Technologies to Advance Automation in Forensic Science and Criminal Investigation provides a platform for researchers to present state-of-the-art technologies within forensic science and criminal investigation. Covering topics such as financial fraud, machine learning, and source camera identification, this book is an essential reference for criminal investigators, justice departments, law enforcement, legislators, computer scientists, automation professionals, researchers, academicians, and students and educators in higher education.

Advances in Digital Forensics XIV Springer Nature

Developing a knowledge model helps to formalize the difficult task of analyzing crime incidents in addition to preserving and presenting the digital evidence for legal processing. The use of data analytics techniques to collect evidence assists forensic investigators in following the standard set of forensic procedures, techniques, and methods used for evidence collection and extraction. Varieties of data sources and information can be uniquely identified, physically isolated from the crime scene, protected, stored, and transmitted for investigation using AI techniques. With such large volumes of forensic data being processed, different deep learning techniques may be employed. Confluence of AI, Machine, and Deep Learning in Cyber Forensics contains cutting-edge research on the latest AI techniques being used to design and build solutions that address prevailing issues in cyber forensics and that will support efficient and effective investigations. This book seeks to understand the value of the deep learning algorithm to handle evidence data as well as the usage of neural networks to analyze investigation data. Other themes that are explored include machine learning algorithms that allow machines to interact with the evidence, deep learning algorithms that can handle evidence acquisition and preservation, and techniques in both fields that allow for the analysis of huge amounts of data collected during a forensic investigation. This book is ideally intended for forensics experts, forensic investigators, cyber forensic practitioners, researchers, academicians, and students interested in cyber forensics, computer science and engineering, information technology, and electronics and communication.

Critical Concepts, Standards, and Techniques in Cyber Forensics Springer Nature

Increasingly, crimes and fraud are digital in nature, occurring at breakneck speed and encompassing large volumes of data. To combat this unlawful activity, knowledge about the use of machine learning technology and software is critical. Machine Learning Forensics for Law Enforcement, Security, and Intelligence integrates an assortment of deductive

John Wiley & Sons

"This book describes some of the recent notable advances in threat-detection using machine-learning and artificial-intelligence with a focus on malwares, covering the current trends in ML/statistical approaches to detecting, clustering or classification of cyber-threats extensively"--

Machine Learning for Authorship Attribution and Cyber Forensics CRC Press

Machine Learning Forensics for Law Enforcement, Security, and Intelligence.

Digital Forensics and Investigations IGI Global

Digital forensics and multimedia forensics are rapidly growing disciplines whereby electronic information is extracted and interpreted for use in a court of law. These two fields are finding increasing importance in law enforcement and the investigation of cybercrime as the ubiquity of personal computing and the internet becomes ever-more apparent. Digital forensics involves investigating computer systems and digital artefacts in general, while multimedia forensics is a sub-topic of digital forensics focusing on evidence extracted from both normal computer systems and special multimedia devices, such as digital cameras. This book focuses on the interface between digital forensics and multimedia forensics, bringing two closely related fields of forensic expertise together to identify and understand the current state-of-the-art in digital forensic investigation. Both fields are expertly attended to by contributions from researchers and forensic practitioners specializing in diverse topics such as forensic authentication, forensic triage, forensic photogrammetry, biometric forensics, multimedia device identification, and image forgery detection among many others. Key features: Brings digital and multimedia forensics together with contributions from academia, law enforcement, and the digital forensics industry for extensive coverage of all the major aspects of digital forensics of multimedia data and devices Provides comprehensive and authoritative coverage of digital forensics of multimedia data and devices Offers not only explanations of techniques but also real-world and simulated case studies to illustrate how digital and multimedia forensics techniques work Includes a companion website hosting continually updated supplementary materials ranging from extended and updated coverage of standards to best practice guides, test datasets and more case studies

Shades of Blue - 30 Years of (Un) Ethical Policing CRC Press

In recent years, industries have transitioned into the digital realm, as companies and organizations are adopting certain forms of technology to assist in information storage and efficient methods of production. This dependence has significantly increased the risk of cyber crime and breaches in data security. Fortunately, research in the area of cyber security and information protection is flourishing; however, it is the responsibility of industry professionals to keep pace with the current trends within this field. The Handbook of Research on Cyber Crime and Information Privacy is a collection of innovative research on the modern methods of crime and misconduct within cyber space. It presents

novel solutions to securing and preserving digital information through practical examples and case studies. While highlighting topics including virus detection, surveillance technology, and social networks, this book is ideally designed for cybersecurity professionals, researchers, developers, practitioners, programmers, computer scientists, academicians, security analysts, educators, and students seeking up-to-date research on advanced approaches and developments in cyber security and information protection.

Technologies to Advance Automation in Forensic Science and Criminal Investigation Springer Nature

Annotation A comprehensive and broad introduction to computer and intrusion forensics, covering the areas of law enforcement, national security and corporate fraud, this practical book helps professionals understand case studies from around the world, and treats key emerging areas such as stegoforensics, image identification, authorship categorization, and machine learning.

Will Science Remain Human? IGI Global

"The reference book will show the depth of Darkweb Environment by highlighting the Attackers techniques, crawling of hidden contents, Intrusion detection using advance algorithms, TOR Network structure, Memex search engine indexing of anonymous contents at Online Social Network, and more"--

Deep Learning Techniques for IoT Security and Privacy CRC Press

This volume constitutes selected papers presented at the Third International Conference on Artificial Intelligence and Speech Technology, AIST 2021, held in Delhi, India, in November 2021. The 36 full papers and 18 short papers presented were thoroughly reviewed and selected from the 178 submissions. They provide a discussion on application of Artificial Intelligence tools in speech analysis, representation and models, spoken language recognition and understanding, affective speech recognition, interpretation and synthesis, speech interface design and human factors engineering, speech emotion recognition technologies, audio-visual speech processing and several others.

Informatics and Intelligent Applications Walter de Gruyter GmbH & Co KG

Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Networked computing, wireless communications and portable electronic devices have expanded the role of digital forensics beyond traditional computer crime investigations. Practically every crime now involves some aspect of digital evidence; digital forensics provides the techniques and tools to articulate this evidence. Digital forensics also has myriad intelligence applications. Furthermore, it has a vital role in information assurance -- investigations of security breaches yield valuable information that can be used to design more secure systems. Advances in Digital Forensics VII describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: Themes and Issues, Forensic Techniques, Fraud and Malware Investigations, Network Forensics, and Advanced Forensic Techniques. This book is the 7th volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.9 on Digital Forensics, an international community of scientists, engineers and practitioners dedicated to advancing the state of the art of research and practice in digital forensics. The book contains a selection of 21 edited papers from the 7th Annual IFIP WG 11.9 International Conference on Digital Forensics, held at the National Center for Forensic Science, Orlando, Florida, USA in the spring of 2011. Advances in Digital Forensics VII is an important resource for researchers, faculty members and graduate students, as well as for practitioners and individuals engaged in research and development efforts for the law enforcement and intelligence communities. Gilbert Peterson is an Associate Professor of Computer Engineering at the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA. Sujeet Shenoi is the F.P. Walter Professor of Computer Science at the University of Tulsa, Tulsa, Oklahoma, USA.

Impact and Challenges Springer

The book provides a valuable reference for cyber security experts, digital forensic practitioners and network security professionals. In recent years, AI has gained substantial attention from researchers in both academia and industry, and as a result AI’s capabilities are constantly increasing at an extraordinary pace. AI is considered to be the Fourth Industrial Revolution or at least the next significant technological change after the evolution in mobile and cloud computing technologies. AI is a vehicle for improving the quality of our lives across every spectrum with a broad range of beneficial applications in various sectors. Notwithstanding its numerous beneficial use, AI simultaneously poses numerous legal, ethical, security and privacy challenges that are compounded by its malicious use by criminals. These challenges pose many risks to both our privacy and security at national, organisational and individual levels. In view of this, this book aims to help address some of these challenges focusing on the implication, impact and mitigations of the stated issues. The book provides a comprehensive coverage of not only the technical and ethical issues presented by the use of AI but also the adversarial application of AI and its associated implications. The authors recommend a number of novel approaches to assist in better detecting, thwarting and addressing AI challenges. The book also looks ahead and forecasts what attacks can be carried out in the future through the malicious use of the AI if sufficient defences are not implemented. The research contained in the book fits well into the larger body of work on various aspects of AI and cyber security. It is also aimed at researchers seeking to obtain a more profound knowledge of machine learning and deep learning in the context of cyber security, digital forensics and cybercrime. Furthermore, the book is an exceptional advanced text for Ph.D. and master’s degree programmes in cyber security, digital forensics, network security, cyber terrorism and computer science. Each chapter contributed to the book is written by an internationally renowned expert who has extensive experience in law enforcement, industry or academia. Furthermore, this book blends advanced research findings with practice-based methods to provide the reader with advanced understanding and relevant skills.

Third International Conference, AIST 2021, Delhi, India, November 12–13, 2021, Revised Selected Papers CRC Press

This book presents a comprehensive study of different tools and techniques available to perform network forensics. Also, various aspects of network forensics are reviewed as well as related technologies and their limitations. This helps security practitioners and researchers in better understanding of the problem, current solution space, and future research scope to detect and investigate various network intrusions against such attacks efficiently. Forensic computing is rapidly

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Machine Learning and Deep Learning in Real-Time Applications CRC Press

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Computer and Intrusion Forensics IGI Global

Updated annually to keep up with the increasingly fast pace of change in the field, the Information Security Management Handbook is the single most comprehensive and up-to-date resource on information security (IS) and assurance. Facilitating the up-to-date understanding required of all IS professionals, the Information Security Management Handbook

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