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**Malware** - Ed Skoudis 2004

Describes various types of malware, including viruses, worms, user-level RootKits, and kernel-level manipulation, their characteristics and attack method, and how to defend against an attack.

**Handbook of Research on Network Forensics and Analysis Techniques** - Shrivastava, Gulshan 2018-04-06

With the rapid advancement in technology, myriad new threats have emerged in online environments. The broad spectrum of these digital risks requires new and innovative methods for protection against cybercrimes. The Handbook of Research on Network Forensics and Analysis Techniques is a current research publication

that examines the advancements and growth of forensic research from a relatively obscure tradecraft to an important part of many investigations. Featuring coverage on a broad range of topics including cryptocurrency, hand-based biometrics, and cyberterrorism, this publication is geared toward professionals, computer forensics practitioners, engineers, researchers, and academics seeking relevant research on the development of forensic tools.

**Information Security** - Hein Venter 2019-01-24

This book constitutes the refereed proceedings of the 17th International Conference on Information Security, ISSA 2018, held in Pretoria, South Africa, in August

2018. The 13 revised full papers presented were carefully reviewed and selected from 40 submissions. The papers are dealing with topics such as authentication; access control; digital (cyber) forensics; cyber security; mobile and wireless security; privacy-preserving protocols; authorization; trust frameworks; security requirements; formal security models; malware and its mitigation; intrusion detection systems; social engineering; operating systems security; browser security; denial-of-service attacks; vulnerability management; file system security; firewalls; Web protocol security; digital rights management; distributed systems security.

**Internet of Things and Cyber Physical Systems** - Keshav Kaushik 2022-12-30

The quantity, diversity, and sophistication of Internet of Things (IoT) items are rapidly increasing, posing significant issues but also innovative solutions for forensic science. Such systems are becoming increasingly common in public locations, businesses, universities, residences, and other shared offices, producing enormous amounts of data at rapid speeds in a variety of forms. IoT devices can be used as suspects, digital witnesses, or instruments of crime and cyberattacks, posing new investigation problems, forensic issues, security threats, legal concerns, privacy concerns, and ethical dilemmas. A cyberattack on IoT devices might target the device itself or associated systems, particularly vital infrastructure. This book discusses the advancements in IoT and Cyber Physical Systems (CPS) forensics. The first objective is to learn and understand the fundamentals of IoT forensics. This objective will answer the question of why and how IoT has evolved as one of the most promising and widely accepted

technologies across the globe and has many widely accepted applications. The second objective is to learn how to use CPS to address many computational problems. CPS forensics is a promising domain, and there are various advancements in this field. This book is structured so that the topics of discussion are relevant to each reader's particular areas of interest. The book's goal is to help each reader to see the relevance of IoT and CPS forensics to his or her career or interests. This book not only presents numerous case studies from a global perspective, but it also compiles a large amount of literature and research from a database. As a result, this book effectively demonstrates the concerns, difficulties, and trends surrounding the topic while also encouraging readers to think globally. The main goal of this project is to encourage both researchers and practitioners to share and exchange their experiences and recent studies between academia and industry.

**Countering Cyberterrorism** - Reza Montasari 2023-01-01  
This book provides a comprehensive analysis covering the confluence of Artificial Intelligence (AI), Cyber Forensics and Digital Policing in the context of the United Kingdom (UK), United States (US) and European Union (EU) national cybersecurity. More specifically, this book explores ways in which the adoption of AI algorithms (such as Machine Learning, Deep Learning, Natural Language Processing, and Big Data Predictive Analytics (BDPAs) transforms law enforcement agencies (LEAs) and intelligence service practices. It explores the roles that these technologies play in the manufacture of security, the threats to freedom and the levels of social control in the surveillance state. This book also examines the malevolent use of AI and

associated technologies by state and non-state actors. Along with this analysis, it investigates the key legal, political, ethical, privacy and human rights implications of the national security uses of AI in the stated democracies. This book provides a set of policy recommendations to help to mitigate these challenges. Researchers working in the security field as well as advanced level students in computer science focused on security will find this book useful as a reference. Cyber security professionals, network security analysts, police and law enforcement agencies will also want to purchase this book.

Information Security and Privacy Research - Dimitris Gritzalis 2012-06-06

This book constitutes the refereed proceedings of the 27th IFIP TC 11 International Information Security Conference, SEC 2012, held in Heraklion, Crete, Greece, in June 2012. The 42 revised full papers presented together with 11 short papers were carefully reviewed and selected from 167 submissions. The papers are organized in topical sections on attacks and malicious code, security architectures, system security, access control, database security, privacy attitudes and properties, social networks and social engineering, applied cryptography, anonymity and trust, usable security, security and trust models, security economics, and authentication and delegation.

**Confluence of AI, Machine, and Deep Learning in Cyber Forensics** - Misra, Sanjay 2020-12-18

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.

*16th International Conference on Information Technology-New Generations (ITNG 2019)* - Shahram Latifi 2019-05-22

This 16th International Conference on Information Technology - New Generations (ITNG), continues an annual event focusing on state of the art technologies pertaining to digital information and communications.

The applications of advanced information technology to such domains as astronomy, biology, education, geosciences, security and health care are among topics of relevance to ITNG. Visionary ideas, theoretical and experimental results, as well as prototypes, designs, and tools that help the information readily flow to the user are of special interest. Machine Learning, Robotics, High Performance Computing, and Innovative Methods of Computing are examples of related topics. The conference features keynote speakers, the best student award, poster award, service award, a technical open panel, and workshops/exhibits from industry, government and academia.

Distributed Applications and Interoperable Systems - Jim Dowling 2013-05-29

This book constitutes the refereed proceedings of the 13th IFIP WG 6.1 International Conference on Distributed Applications and Interoperable Systems, DAIS 2013, held in Florence, Italy, in June 2013, as part of the 8th International Federated Conference on Distributed Computing Techniques, DisCoTec 2013. The 12 revised full papers and 9 short papers presented were carefully reviewed and selected from 42 submissions. The papers present state-of-the-art research results and case studies in the area of distributed applications and interoperable systems focussing on cloud computing, replicated storage, and peer-to-peer computing.

The Death of the Internet - Markus Jakobsson 2012-07-11  
Fraud poses a significant threat to the Internet. 1.5% of all online advertisements attempt to spread malware. This lowers the willingness to view or handle advertisements, which will severely affect the structure of the web and its viability. It may also destabilize online commerce. In addition, the Internet is

increasingly becoming a weapon for political targets by malicious organizations and governments. This book will examine these and related topics, such as smart phone based web security. This book describes the basic threats to the Internet (loss of trust, loss of advertising revenue, loss of security) and how they are related. It also discusses the primary countermeasures and how to implement them.

Managing Cyber Threats - Vipin Kumar 2006-03-30

Modern society depends critically on computers that control and manage the systems on which we depend in many aspects of our daily lives. While this provides conveniences of a level unimaginable just a few years ago, it also leaves us vulnerable to attacks on the computers managing these systems. In recent times the explosion in cyber attacks, including viruses, worms, and intrusions, has turned this vulnerability into a clear and visible threat. Due to the escalating number and increased sophistication of cyber attacks, it has become important to develop a broad range of techniques, which can ensure that the information infrastructure continues to operate smoothly, even in the presence of dire and continuous threats. This book brings together the latest techniques for managing cyber threats, developed by some of the world's leading experts in the area. The book includes broad surveys on a number of topics, as well as specific techniques. It provides an excellent reference point for researchers and practitioners in the government, academic, and industrial communities who want to understand the issues and challenges in this area of growing worldwide importance.

Machine Learning for Authorship Attribution and Cyber Forensics - Farkhund Iqbal 2020-12-04

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.

Evolutionary Computing and Mobile Sustainable Networks - V. Suma 2020-07-31

This book features selected research papers presented at the International Conference on Evolutionary Computing and Mobile Sustainable Networks (ICECMSN 2020), held at the Sir M. Visvesvaraya Institute of Technology on 20–21 February 2020. Discussing advances in evolutionary

computing technologies, including swarm intelligence algorithms and other evolutionary algorithm paradigms which are emerging as widely accepted descriptors for mobile sustainable networks virtualization, optimization and automation, this book is a valuable resource for researchers in the field of evolutionary computing and mobile sustainable networks.

*Cyber Crime and Forensic Computing* - Gulshan Shrivastava 2021-09-07

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.

**Computational Intelligence in Digital Forensics: Forensic Investigation and Applications** - Azah Kamilah Muda 2014-04-01

Computational Intelligence techniques have been widely explored in various domains including forensics. Analysis in forensic encompasses the study of pattern analysis that answer the question of interest in security, medical, legal, genetic studies and etc. However, forensic analysis is usually performed through experiments in lab which is expensive both in cost and time. Therefore, this book seeks to explore the progress and advancement of computational intelligence technique in different focus areas of forensic studies. This aims to build stronger connection between computer scientists and forensic field experts. This book, Computational Intelligence in Digital Forensics: Forensic Investigation and Applications, is the first volume in the Intelligent Systems Reference Library series. The book presents original research results and innovative

applications of computational intelligence in digital forensics. This edited volume contains seventeen chapters and presents the latest state-of-the-art advancement of Computational Intelligence in Digital Forensics; in both theoretical and application papers related to novel discovery in intelligent forensics. The chapters are further organized into three sections: (1) Introduction, (2) Forensic Discovery and Investigation, which discusses the computational intelligence technologies employed in Digital Forensic, and (3) Intelligent Forensic Science Applications, which encompasses the applications of computational intelligence in Digital Forensic, such as human anthropology, human biometrics, human by products, drugs, and electronic devices.

*Legal Principles for Combatting Cyberlaundering* - Daniel Adeoyé Leslie 2014-07-18

This volume deals with the very novel issue of cyber laundering. The book investigates the problem of cyber laundering legally and sets out why it is of a grave legal concern locally and internationally. The book looks at the current state of laws and how they do not fully come to grips with the problem. As a growing practice in these modern times, and manifesting through technological innovations, cyber laundering is the birth child of money laundering and cybercrime. It concerns how the internet is used for 'washing' illicit proceeds of crime. In addition to exploring the meaning and ambits of the problem with concrete real-life examples, more importantly, a substantial part of the work innovates ways in which the dilemma can be curbed legally. This volume delves into a very grey area of law, daring a yet unthreaded territory and scouring undiscovered paths where money laundering, cybercrime,

information technology and international law converge. In addition to unearthing such complexity, the hallmark of this book is in the innovative solutions and dynamic remedies it postulates.

*Cyber Security: Issues and Current Trends* - Nitul Dutta 2021-10-30

This book presents various areas related to cybersecurity. Different techniques and tools used by cyberattackers to exploit a system are thoroughly discussed and analyzed in their respective chapters. The content of the book provides an intuition of various issues and challenges of cybersecurity that can help readers to understand and have awareness about it. It starts with a very basic introduction of security, its varied domains, and its implications in any working organization; moreover, it will talk about the risk factor of various attacks and threats. The concept of privacy and anonymity has been taken into consideration in consecutive chapters. Various topics including, The Onion Router (TOR) and other anonymous services, are precisely discussed with a practical approach. Further, chapters to learn the importance of preventive measures such as intrusion detection system (IDS) are also covered. Due to the existence of severe cyberattacks, digital forensics is a must for investigating the crime and to take precautionary measures for the future occurrence of such attacks. A detailed description of cyberinvestigation is covered in a chapter to get readers acquainted with the need and demands. This chapter deals with evidence collection from the victim's device and the system that has importance in the context of an investigation. Content covered in all chapters is foremost and reported in the current trends in several journals and cybertalks. The proposed book is helpful

for any reader who is using a computer or any such electronic gadget in their daily routine. The content of the book is prepared to work as a resource to any undergraduate and graduate-level student to get aware about the concept of cybersecurity, various cyberattacks, and threats in the security. In addition to that, it aimed at assisting researchers and developers to build a strong foundation for security provisioning in any newer technology which they are developing.

*Digital Forensics and Forensic Investigations:*

*Breakthroughs in Research and Practice* - Management Association, Information Resources 2020-04-03

As computer and internet technologies continue to advance at a fast pace, the rate of cybercrimes is increasing. Crimes employing mobile devices, data embedding/mining systems, computers, network communications, or any malware impose a huge threat to data security, while cyberbullying, cyberstalking, child pornography, and trafficking crimes are made easier through the anonymity of the internet. New developments in digital forensics tools and an understanding of current criminal activities can greatly assist in minimizing attacks on individuals, organizations, and society as a whole. *Digital Forensics and Forensic Investigations: Breakthroughs in Research and Practice* addresses current challenges and issues emerging in cyber forensics and new investigative tools and methods that can be adopted and implemented to address these issues and counter security breaches within various organizations. It also examines a variety of topics such as advanced techniques for forensic developments in computer and communication-link environments and legal perspectives including procedures for cyber

investigations, standards, and policies. Highlighting a range of topics such as cybercrime, threat detection, and forensic science, this publication is an ideal reference source for security analysts, law enforcement, lawmakers, government officials, IT professionals, researchers, practitioners, academicians, and students currently investigating the up-and-coming aspects surrounding network security, computer science, and security engineering.

**The Legal Regulation of Cyber Attacks** - Ioannis Iglezakis 2020-03-19

This updated edition of a well-known comprehensive analysis of the criminalization of cyberattacks adds important new guidance to the legal framework on cybercrime, reflecting new legislation, technological developments, and the changing nature of cybercrime itself. The focus is not only on criminal law aspects but also on issues of data protection, jurisdiction, electronic evidence, enforcement, and digital forensics. It provides a thorough analysis of the legal regulation of attacks against information systems in the European, international, and comparative law contexts. Among the new and continuing aspects of cybersecurity covered are the following: the conflict of cybercrime investigation and prosecution with fundamental rights to privacy and freedom of expression; the 2016 Directive on security of network and information systems (NIS Directive); the General Data Protection Regulation (GDPR); the role of national computer security incident response teams (CSIRTs); the European Union (EU) response to new technologies involving payment instruments, including virtual currencies and digital wallets; the EU Commission's legislative proposals to enhance cross-border gathering of electronic evidence; internet



service providers' role in fighting cybercrime; measures combatting identity theft, spyware, and malware; states and legal persons as perpetrators of cybercrime; and the security and data breach notification as a compliance and transparency tool. Technical definitions, case laws, and analysis of both substantive law and procedural law contribute to a comprehensive understanding of cybercrime regulation and its current evolution in practice. Addressing a topic of growing importance in unprecedented detail, this new edition of a much-relied-upon resource will be welcomed by professionals and authorities dealing with cybercrime, including lawyers, judges, academics, security professionals, information technology experts, and law enforcement agencies.

*Handling and Exchanging Electronic Evidence Across Europe* - Maria Angela Biasiotti 2018-06-26

This volume offers a general overview on the handling and regulating electronic evidence in Europe, presenting a standard for the exchange process. Chapters explore the nature of electronic evidence and readers will learn of the challenges involved in upholding the necessary standards and maintaining the integrity of information. Challenges particularly occur when European Union member states collaborate and evidence is exchanged, as may be the case when solving a cybercrime. One such challenge is that the variety of possible evidences is so wide that potentially anything may become the evidence of a crime. Moreover, the introduction and the extensive use of information and communications technology (ICT) has generated new forms of crimes or new ways of perpetrating them, as well as a new type of evidence. Contributing authors examine the legal framework in place in various EU member states when dealing with electronic evidence, with prominence given to data

protection and privacy issues. Readers may learn about the state of the art tools and standards utilized for treating and exchanging evidence, and existing platforms and environments run by different Law Enforcement Agencies (LEAs) at local and central level. Readers will also discover the operational point of view of LEAs when dealing with electronic evidence, and their requirements and expectations for the future. Finally, readers may consider a proposal for realizing a unique legal framework for governing in a uniform and aligned way the treatment and cross border exchange of electronic evidence in Europe. The use, collection and exchange of electronic evidence in the European Union context and the rules, practises, operational guidelines, standards and tools utilized by LEAs, judges, Public prosecutors and other relevant stakeholders are all covered in this comprehensive work. It will appeal to researchers in both law and computer science, as well as those with an interest in privacy, digital forensics, electronic evidence, legal frameworks and law enforcement.

**Wiley Handbook of Science and Technology for Homeland Security, 4 Volume Set** - John G. Voeller 2010-04-12

The Wiley Handbook of Science and Technology for Homeland Security is an essential and timely collection of resources designed to support the effective communication of homeland security research across all disciplines and institutional boundaries. Truly a unique work this 4 volume set focuses on the science behind safety, security, and recovery from both man-made and natural disasters has a broad scope and international focus. The Handbook: Educates researchers in the critical needs of the homeland security and intelligence communities and the potential contributions of their own disciplines Emphasizes the role of fundamental science

in creating novel technological solutions Details the international dimensions of homeland security and counterterrorism research Provides guidance on technology diffusion from the laboratory to the field Supports cross-disciplinary dialogue in this field between operational, R&D and consumer communities

**CyberForensics** - Jennifer Bayuk 2010-09-10

Cyberforensics is a fairly new word in the technology our industry, but one that nevertheless has immediately recognizable meaning. Although the word forensics may have its origins in formal debates using evidence, it is now most closely associated with investigation into evidence of crime. As the word cyber has become synonymous with the use of electronic technology, the word cyberforensics bears no mystery. It immediately conveys a serious and concentrated endeavor to identify the evidence of crimes or other attacks committed in cyberspace. Nevertheless, the full implications of the word are less well understood. Cyberforensic activities remain a mystery to most people, even those fully immersed in the design and operation of cyber technology. This book sheds light on those activities in a way that is comprehensible not only to technology professionals but also to the technology hobbyist and those simply curious about the field. When I started contributing to the field of cybersecurity, it was an obscure field, rarely mentioned in the mainstream media. According to the FBI, by 2009 organized crime syndicates were making more money via cybercrime than in drug trafficking. In spite of the rise in cybercrime and the advance of sophisticated threat actors online, the cyber security profession continues to lag behind in its ability to investigate cybercrime and understand the root causes of cyber attacks. In the late 1990s I worked

to respond to sophisticated attacks as part of the U. S. **Handbook of Big Data and IoT Security** - Ali Dehghantanha 2019-03-22

This handbook provides an overarching view of cyber security and digital forensic challenges related to big data and IoT environment, prior to reviewing existing data mining solutions and their potential application in big data context, and existing authentication and access control for IoT devices. An IoT access control scheme and an IoT forensic framework is also presented in this book, and it explains how the IoT forensic framework can be used to guide investigation of a popular cloud storage service. A distributed file system forensic approach is also presented, which is used to guide the investigation of Ceph. Minecraft, a Massively Multiplayer Online Game, and the Hadoop distributed file system environment are also forensically studied and their findings reported in this book. A forensic IoT source camera identification algorithm is introduced, which uses the camera's sensor pattern noise from the captured image. In addition to the IoT access control and forensic frameworks, this handbook covers a cyber defense triage process for nine advanced persistent threat (APT) groups targeting IoT infrastructure, namely: APT1, Molerats, Silent Chollima, Shell Crew, NetTraveler, ProjectSauron, CopyKittens, Volatile Cedar and Transparent Tribe. The characteristics of remote-controlled real-world Trojans using the Cyber Kill Chain are also examined. It introduces a method to leverage different crashes discovered from two fuzzing approaches, which can be used to enhance the effectiveness of fuzzers. Cloud computing is also often associated with IoT and big data (e.g., cloud-enabled IoT systems), and hence a survey of the cloud security

literature and a survey of botnet detection approaches are presented in the book. Finally, game security solutions are studied and explained how one may circumvent such solutions. This handbook targets the security, privacy and forensics research community, and big data research community, including policy makers and government agencies, public and private organizations policy makers. Undergraduate and postgraduate students enrolled in cyber security and forensic programs will also find this handbook useful as a reference.

*Critical Concepts, Standards, and Techniques in Cyber Forensics* - Husain, Mohammad Shahid 2019-11-22

Advancing technologies, especially computer technologies, have necessitated the creation of a comprehensive investigation and collection methodology for digital and online evidence. The goal of cyber forensics is to perform a structured investigation while maintaining a documented chain of evidence to find out exactly what happened on a computing device or on a network and who was responsible for it. *Critical Concepts, Standards, and Techniques in Cyber Forensics* is a critical research book that focuses on providing in-depth knowledge about online forensic practices and methods. Highlighting a range of topics such as data mining, digital evidence, and fraud investigation, this book is ideal for security analysts, IT specialists, software engineers, researchers, security professionals, criminal science professionals, policymakers, academicians, and students.

**Advances in Digital Forensics XIV** - Gilbert Peterson 2018-08-29

ADVANCES IN DIGITAL FORENSICS XIV Edited by: Gilbert Peterson and Sujeet Shenoj Digital forensics deals with the acquisition, preservation, examination, analysis and

presentation of electronic evidence. Computer networks, cloud computing, smartphones, embedded devices and the Internet of Things 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 in legal proceedings. 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 and resilient systems. *Advances in Digital Forensics XIV* 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; Network Forensics; Cloud Forensics; and Mobile and Embedded Device Forensics. This book is the fourteenth 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 nineteen edited papers from the Fourteenth Annual IFIP WG 11.9 International Conference on Digital Forensics, held in New Delhi, India in the winter of 2018. *Advances in Digital Forensics XIV* 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, Chair, IFIP WG 11.9 on Digital Forensics, is a 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 and a Professor of Chemical Engineering at the University of Tulsa, Tulsa, Oklahoma, USA.

Advances in Digital Forensics - Mark Pollitt 2005-11-15

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 describes original research results and innovative applications in the emerging 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 in Digital Forensics Investigative Techniques Network Forensics Portable Electronic Device Forensics Linux and File System Forensics Applications and Techniques This book is the first volume of a new 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 twenty-five edited papers from the First Annual IFIP WG 11.9 Conference on Digital Forensics, held at the National Center for Forensic Science, Orlando, Florida, USA in February 2005. Advances in Digital Forensics 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. Mark Pollitt is President of Digital Evidence Professional Services, Inc., Ellicott City, Maryland, USA. Mr. Pollitt, who is retired from the Federal Bureau of Investigation (FBI), served as the Chief of the FBI's Computer Analysis Response Team, and Director of the Regional Computer Forensic Laboratory National Program. Sujeet Shenoi is the F.P. Walter Professor of Computer Science and a principal with the Center for Information Security at the University of Tulsa, Tulsa, Oklahoma, USA. For more information about the 300 other books in the IFIP series, please visit [www.springeronline.com](http://www.springeronline.com). For more information about IFIP, please visit [www.ifip.org](http://www.ifip.org).

**Information Security and Assurance** - Tai-Hoon Kim  
2011-09-08

This book constitutes the proceedings of the International Conference on Information Security and Assurance, held in Brno, Czech Republic in August 2011.

**Proceedings of Fifth International Congress on Information and Communication Technology** - Xin-She Yang  
2020-10-21

This book gathers selected high-quality research papers

presented at the Fifth International Congress on Information and Communication Technology, held at Brunel University, London, on February 20–21, 2020. It discusses emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of Things (IoT) and e-mining. Written by respected experts and researchers working on ICT, the book offers a valuable asset for young researchers involved in advanced studies.

**Cybercrime and Digital Forensics** - Thomas J. Holt  
2022-05-31

This book offers a comprehensive and integrative introduction to cybercrime. It provides an authoritative synthesis of the disparate literature on the various types of cybercrime, the global investigation and detection of cybercrime and the role of digital information, and the wider role of technology as a facilitator for social relationships between deviants and criminals. It includes coverage of: • key theoretical and methodological perspectives; • computer hacking and malicious software; • digital piracy and intellectual theft; • economic crime and online fraud; • pornography and online sex crime; • cyber-bullying and cyber-stalking; • cyber-terrorism and extremism; • the rise of the Dark Web; • digital forensic investigation and its legal context around the world; • the law enforcement response to cybercrime transnationally; • cybercrime policy and legislation across the globe. The new edition has been revised and updated, featuring two new chapters; the first offering an expanded discussion of cyberwarfare and information operations online, and the second discussing illicit market operations for all

sorts of products on both the Open and Dark Web. This book includes lively and engaging features, such as discussion questions, boxed examples of unique events and key figures in offending, quotes from interviews with active offenders, and a full glossary of terms. It is supplemented by a companion website that includes further exercises for students and instructor resources. This text is essential reading for courses on cybercrime, cyber-deviancy, digital forensics, cybercrime investigation, and the sociology of technology.

*Inside Network Perimeter Security* - Stephen Northcutt  
2003

Examines how various security methods are used and how they work, covering options including packet filtering, proxy firewalls, network intrusion detection, virtual private networks, and encryption.

**Digital Forensics and Cyber Crime** - Claus Vielhauer  
2011-03-07

This book contains a selection of thoroughly refereed and revised papers from the Second International ICST Conference on Digital Forensics and Cyber Crime, ICDF2C 2010, held October 4-6, 2010 in Abu Dhabi, United Arab Emirates. The field of digital forensics is becoming increasingly important for law enforcement, network security, and information assurance. It is a multidisciplinary area that encompasses a number of fields, including law, computer science, finance, networking, data mining, and criminal justice. The 14 papers in this volume describe the various applications of this technology and cover a wide range of topics including law enforcement, disaster recovery, accounting frauds, homeland security, and information warfare.

National Cyber Summit (NCS) Research Track 2021 - Kim-

Kwang Raymond Choo 2021-08-08

This book presents findings from the papers accepted at the Cyber Security Education Stream and Cyber Security Technology Stream of The National Cyber Summit's Research Track, reporting on latest advances on topics ranging from software security to cyber-attack detection and modelling to the use of machine learning in cyber security to legislation and policy to surveying of small businesses to cyber competition, and so on.

Understanding the latest capabilities in cyber security ensures users and organizations are best prepared for potential negative events. This book is of interest to cyber security researchers, educators and practitioners, as well as students seeking to learn about cyber security.

*Cyber Security Policy Guidebook* - Jennifer L. Bayuk  
2012-04-24

Drawing upon a wealth of experience from academia, industry, and government service, *Cyber Security Policy Guidebook* details and dissects, in simple language, current organizational cyber security policy issues on a global scale—taking great care to educate readers on the history and current approaches to the security of cyberspace. It includes thorough descriptions—as well as the pros and cons—of a plethora of issues, and documents policy alternatives for the sake of clarity with respect to policy alone. The Guidebook also delves into organizational implementation issues, and equips readers with descriptions of the positive and negative impact of specific policy choices. Inside are detailed chapters that: Explain what is meant by cyber security and cyber security policy Discuss the process by which cyber security policy goals are set Educate the reader on decision-making processes related to cyber security

Describe a new framework and taxonomy for explaining cyber security policy issues Show how the U.S. government is dealing with cyber security policy issues With a glossary that puts cyber security language in layman's terms—and diagrams that help explain complex topics—*Cyber Security Policy Guidebook* gives students, scholars, and technical decision-makers the necessary knowledge to make informed decisions on cyber security policy.

**Cyber Forensics** - Albert J. Marcella 2021-09-12

Threat actors, be they cyber criminals, terrorists, hacktivists or disgruntled employees, are employing sophisticated attack techniques and anti-forensics tools to cover their attacks and breach attempts. As emerging and hybrid technologies continue to influence daily business decisions, the proactive use of cyber forensics to better assess the risks that the exploitation of these technologies pose to enterprise-wide operations is rapidly becoming a strategic business objective. This book moves beyond the typical, technical approach to discussing cyber forensics processes and procedures. Instead, the authors examine how cyber forensics can be applied to identifying, collecting, and examining evidential data from emerging and hybrid technologies, while taking steps to proactively manage the influence and impact, as well as the policy and governance aspects of these technologies and their effect on business operations. A world-class team of cyber forensics researchers, investigators, practitioners and law enforcement professionals have come together to provide the reader with insights and recommendations into the proactive application of cyber forensic methodologies and procedures to both protect data and to identify digital evidence related to the misuse of these data.

This book is an essential guide for both the technical and non-technical executive, manager, attorney, auditor, and general practitioner who is seeking an authoritative source on how cyber forensics may be applied to both evidential data collection and to proactively managing today's and tomorrow's emerging and hybrid technologies. The book will also serve as a primary or supplemental text in both under- and post-graduate academic programs addressing information, operational and emerging technologies, cyber forensics, networks, cloud computing and cybersecurity.

Emerging Research in Electronics, Computer Science and Technology - V. Sridhar 2019-04-24

This book presents the proceedings of the International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT) organized by PES College of Engineering in Mandya. Featuring cutting-edge, peer-reviewed articles from the field of electronics, computer science and technology, it is a valuable resource for members of the scientific research community.

**High Performance Architecture and Grid Computing** - Archana Mantri 2011-07-05

This book constitutes the refereed proceedings of the International Conference on High Performance Architecture and Grid Computing, HPAGC 2011, held in Chandigarh, India, in July 2011. The 87 revised full papers presented were carefully reviewed and selected from 240 submissions. The papers are organized in topical sections on grid and cloud computing; high performance architecture; information management and network security.

*Advanced Information Systems Engineering* - Matthias Jarke 2014-06-05

This book constitutes the proceedings of 26th International Conference on Advanced Information Systems Engineering, CAiSE 2014, held in Thessaloniki, Greece in June 2014. The 41 papers and 3 keynote presentations were carefully reviewed and selected from 226 submissions. The accepted papers were presented in 13 sessions: clouds and services; requirements; product lines; requirements elicitation; processes; risk and security; process models; data mining and streaming; process mining; models; mining event logs; databases; software engineering.

*Cyber and Digital Forensic Investigations* - Nhien-An Le-Khac 2020-07-25

Understanding the latest capabilities in the cyber threat landscape as well as the cyber forensic challenges and approaches is the best way users and organizations can prepare for potential negative events. Adopting an experiential learning approach, this book describes how cyber forensics researchers, educators and practitioners can keep pace with technological advances, and acquire the essential knowledge and skills, ranging from IoT forensics, malware analysis, and CCTV and cloud forensics to network forensics and financial investigations. Given the growing importance of incident response and cyber forensics in our digitalized society, this book will be of interest and relevance to researchers, educators and practitioners in the field, as well as students wanting to learn about cyber forensics.

Advances in Digital Forensics II - Martin S. Olivier 2010-04-02

Digital forensics deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Practically every crime now

involves some digital evidence; digital forensics provides the techniques and tools to articulate this evidence. This book describes original research results and innovative applications in the emerging discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations.

*Cyber Security, Cyber Crime and Cyber Forensics: Applications and Perspectives* - Santanam, Raghu  
2010-12-31

Recent developments in cyber security, crime, and forensics have attracted researcher and practitioner

interests from technological, organizational and policy-making perspectives. Technological advances address challenges in information sharing, surveillance and analysis, but organizational advances are needed to foster collaboration between federal, state and local agencies as well as the private sector. *Cyber Security, Cyber Crime and Cyber Forensics: Applications and Perspectives* provides broad coverage of technical and socio-economic perspectives for utilizing information and communication technologies and developing practical solutions in cyber security, cyber crime and cyber forensics.