

The Basics Of Digital Forensics Second Edition The Primer For Getting Started In Digital Forensics

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Big Data Analytics and Computing for Digital Forensic Investigations Suneeta Satpathy 2020-04-07 Digital forensics has recently gained a notable development and become the most demanding area in today's information security requirement. This book investigates the areas of digital forensics, digital investigation and data analysis procedures as they apply to computer fraud and cybercrime, with the main objective of describing a variety of digital crimes and retrieving potential digital evidence. Big Data Analytics and Computing for Digital Forensic Investigations gives a contemporary view on the problems of information security. It presents the idea that protective mechanisms and software must be integrated along with forensic capabilities into existing forensic software using big data computing tools and techniques. Features Describes trends of digital forensics served for big data and the challenges of evidence acquisition Enables digital forensic investigators and law enforcement agencies to enhance their digital investigation capabilities with the application of data science analytics, algorithms and fusion technique This book is focused on helping professionals as well as researchers to get ready with next-generation security systems to mount the rising challenges of computer fraud and cybercrimes as well as with digital forensic investigations. Dr Suneeta Satpathy has more than ten years of teaching experience in different subjects of the Computer Science and Engineering discipline. She is currently working as an associate professor in the Department of Computer Science and Engineering, College of Bhubaneswar, affiliated with Biju Patnaik University and Technology, Odisha. Her research interests include computer forensics, cybersecurity, data fusion, data mining, big data analysis and decision mining. Dr Sachi Nandan Mohanty is an associate professor in the Department of Computer Science and Engineering at ICFAI Tech, ICFAI Foundation for Higher Education, Hyderabad, India. His research interests include data mining, big data analysis, cognitive science, fuzzy decision-making, brain-computer interface, cognition and computational intelligence.

Implementing Digital Forensic Readiness Jason Sachowski 2021-03-31 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 reducing 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.

Implementing Digital Forensic Readiness Jason Sachowski 2019-06-07 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 reducing 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.

Digital Forensics Explained Greg Gogolin 2021-04-12 This book covers the full life cycle of conducting a mobile and computer digital forensic examination, including planning and performing an investigation as well as report writing and testifying. Case reviews in corporate, civil, and criminal situations are also described from both prosecution and defense perspectives. Digital Forensics Explained, Second Edition draws from years of experience in local, state, federal, and international environments and highlights the challenges inherent in deficient cyber security practices. Topics include the importance of following the scientific method and verification, legal and ethical issues, planning an investigation (including tools and techniques), incident response, case project management and authorization, social media and internet, cloud, anti-forensics, link and visual analysis, and psychological considerations. The book is a valuable resource for the academic environment, law enforcement, those in the legal profession, and those working in the cyber security field. Case reviews include cyber security breaches, anti-forensic challenges, child exploitation,

and social media investigations. Greg Gogolin, PhD, CISSP, is a Professor of Information Security and Intelligence at Ferris State University and a licensed Professional Investigator. He has worked more than 100 cases in criminal, civil, and corporate environments.

The Best Damn Cybercrime and Digital Forensics Book Period Jack Wiles 2011-04-18 Electronic discovery refers to a process in which electronic data is sought, located, secured, and searched with the intent of using it as evidence in a legal case. Computer forensics is the application of computer investigation and analysis techniques to perform an investigation to find out exactly what happened on a computer and who was responsible. IDC estimates that the U.S. market for computer forensics will be grow from \$252 million in 2004 to \$630 million by 2009. Business is strong outside the United States, as well. By 2011, the estimated international market will be \$1.8 billion dollars. The Techno Forensics Conference has increased in size by almost 50% in its second year; another example of the rapid growth in the market. This book is the first to combine cybercrime and digital forensic topics to provides law enforcement and IT security professionals with the information needed to manage a digital investigation. Everything needed for analyzing forensic data and recovering digital evidence can be found in one place, including instructions for building a digital forensics lab. * Digital investigation and forensics is a growing industry * Corporate I.T. departments investigating corporate espionage and criminal activities are learning as they go and need a comprehensive guide to e-discovery * Appeals to law enforcement agencies with limited budgets

SSL and TLS: Theory and Practice, Second Edition Rolf Oppliger 2016-03-31 This completely revised and expanded second edition of SSL and TLS: Theory and Practice provides an overview and a comprehensive discussion of the Secure Sockets Layer (SSL), Transport Layer Security (TLS), and Datagram TLS (DTLS) protocols that are omnipresent in today's e-commerce and e-business applications and respective security solutions. It provides complete details on the theory and practice of the protocols, offering readers a solid understanding of their design principles and modes of operation. Updates to this edition include coverage of the recent attacks against the protocols, newly specified extensions and firewall traversal, as well as recent developments related to public key certificates and respective infrastructures. This book targets software developers, security professionals, consultants, protocol designers, and chief security officers who will gain insight and perspective on the many details of the SSL, TLS, and DTLS protocols, such as cipher suites, certificate management, and alert messages. The book also comprehensively discusses the advantages and disadvantages of the protocols compared to other Internet security protocols and provides the details necessary to correctly implement the protocols while saving time on the security practitioner's side.

Proceedings of the Sixth International Workshop on Digital Forensics and Incident Analysis (WDFIA 2011) 2011

Learn Computer Forensics William Oettinger 2022-07-29 Learn Computer Forensics from a veteran investigator and technical trainer and explore how to properly document digital evidence collected
Key Features Investigate the core methods of computer forensics to procure and secure advanced digital evidence skillfully Record the digital evidence collected and organize a forensic examination on it Perform an assortment of Windows scientific examinations to analyze and overcome complex challenges Book Description Computer Forensics, being a broad topic, involves a variety of skills which will involve seizing electronic evidence, acquiring data from electronic evidence, data analysis, and finally developing a forensic report. This book will help you to build up the skills you need to work in a highly technical environment. This book's ideal goal is to get you up and running with forensics tools and techniques to successfully investigate crime and corporate misconduct. You will discover ways to collect personal information about an individual from online sources. You will also learn how criminal investigations are performed online while preserving data such as e-mails, images, and videos that may be important to a case. You will further explore networking and understand Network Topologies, IP Addressing, and Network Devices. Finally, you will how to write a proper forensic report, the most exciting portion of the forensic exam process. By the end of this book, you will have developed a clear understanding of how to acquire, analyze, and present digital evidence, like a proficient computer forensics investigator. What you will learn Explore the investigative process, rules of evidence, legal process, and ethical guidelines Understand the difference between sectors, clusters, volumes, and file slack Validate forensic equipment, computer program, and examination methods Create and validate forensically sterile media Gain the ability to draw conclusions based on the exam discoveries Record discoveries utilizing the technically correct terminology Discover the limitations and guidelines for RAM Capture and its tools Explore timeline analysis, media analysis, string searches, and recovery of deleted data Who this book is for This book is for IT beginners, students, or an investigator in the public or private sector. This book will also help IT professionals who are new to incident response and digital forensics and are looking at choosing cybersecurity as their career. Individuals planning to pass the Certified Forensic Computer Examiner (CFCE) certification will also find this book useful.

Building a Digital Forensic Laboratory Andrew Jones 2011-04-19 The need to professionally and successfully conduct computer forensic investigations of incidents and crimes has never been greater. This has caused an increased requirement for information about the creation and management of computer forensic laboratories and the investigations themselves. This includes a great need for information on how to cost-effectively establish and manage a computer forensics laboratory. This book meets that need: a clearly written, non-technical book on the topic of computer forensics with emphasis on the establishment and management of a computer forensics laboratory and its subsequent support to successfully conducting computer-related crime investigations. Provides guidance on creating and managing a computer forensics lab Covers the regulatory and legislative environment in the US and Europe Meets the needs of IT professionals and law enforcement as well as consultants

Digital Forensics in the Era of Artificial Intelligence Nour Moustafa 2022-07-18 Digital forensics plays a crucial role in identifying, analysing, and presenting cyber threats as evidence in a court of law. Artificial intelligence, particularly machine learning and deep learning, enables automation of the digital investigation process. This book provides an in-depth look at the fundamental and advanced methods in digital forensics. It also discusses how machine learning and deep learning algorithms can be used to detect and investigate cybercrimes. This book demonstrates digital forensics and cyber-investigating techniques with real-world applications. It examines hard disk analytics and style architectures, including Master Boot Record and GUID Partition Table as part of the investigative process. It also covers cyberattack analysis in Windows, Linux, and network systems using virtual machines in real-world scenarios. Digital Forensics in the Era of Artificial Intelligence will be helpful for those interested in digital forensics and using machine learning techniques in the investigation of cyberattacks and the detection of evidence in cybercrimes.

Guide to Computer Forensics and Investigations Bill Nelson 2009-09-28 Learners will master the skills necessary to launch and complete a successful computer investigation with the updated fourth edition of this popular book, GUIDE TO COMPUTER FORENSICS AND INVESTIGATIONS. This resource guides readers through conducting a high-tech investigation, from acquiring digital evidence to reporting its findings. Updated coverage includes new software and technologies as well as up-to-date reference sections. Learn how to set up a forensics lab, how to acquire the proper

and necessary tools, and how to conduct the investigation and subsequent digital analysis. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Practical Guide to Computer Forensics Darren R. Hayes 2020-03-10 Now extensively updated, this authoritative, intensely practical guide to digital forensics draws upon the author's wide-ranging experience in law enforcement, including his pioneering work as a forensics examiner in both criminal and civil investigations. Writing for students and other readers at all levels of experience, Dr. Darren Hayes presents comprehensive, modern best practices for capturing and analyzing evidence, protecting the chain of custody, documenting investigations, and more -- all designed for application in actual crime scenes. In this edition, Hayes tightly aligns his coverage with widely-respected government curricula, including NSA Knowledge Units; and with key professional certifications such as AccessData Certified Examiner (ACE). **A Practical Guide to Digital Forensics Investigations, Second Edition** presents more hands-on activities and case studies than any book of its kind, including short questions, essay questions, and discussion questions in every chapter. It addresses issues ranging from device hardware and software to law, privacy and ethics; scientific and government protocols to techniques for investigation and reporting. Reflecting his deep specialized knowledge, this edition offers unsurpassed coverage of mobile forensics, including a full chapter on mobile apps. It also adds new discussions of capturing investigatory data from today's ubiquitous Internet of Things (IoT) devices; as well as digital forensics techniques for incident response and related cybersecurity tasks. Throughout, Hayes presents detailed chapters on crucial topics that competitive books gloss over, including Mac forensics and investigating child endangerment.

Handbook of Electronic Security and Digital Forensics Hamid Jahankhani 2010 The widespread use of information and communications technology (ICT) has created a global platform for the exchange of ideas, goods and services, the benefits of which are enormous. However, it has also created boundless opportunities for fraud and deception. Cybercrime is one of the biggest growth industries around the globe, whether it is in the form of violation of company policies, fraud, hate crime, extremism, or terrorism. It is therefore paramount that the security industry raises its game to combat these threats. Today's top priority is to use computer technology to fight computer crime, as our commonwealth is protected by firewalls rather than firepower. This is an issue of global importance as new technologies have provided a world of opportunity for criminals. This book is a compilation of the collaboration between the researchers and practitioners in the security field; and provides a comprehensive literature on current and future e-security needs across applications, implementation, testing or investigative techniques, judicial processes and criminal intelligence. The intended audience includes members in academia, the public and private sectors, students and those who are interested in and will benefit from this handbook.

Cyber Forensics Albert J. Marcella, Jr. 2012-05 An explanation of the basic principles of data This book explains the basic principles of data as buildingblocks of electronic evidential matter, which are used in a cyberforensics investigations. The entire text is written with noreference to a particular operation system or environment, thus itis applicable to all work environments, cyber investigationscenarios, and technologies. The text is written in astep-by-step manner, beginning with the elementary buildingblocks of data progressing upwards to the representation andstorage of information. It inlcudes practical examples andillustrations throughout to guide the reader.

Digital Evidence and Computer Crime Eoghan Casey 2011 "Digital Evidence and Computer Crime" provides the knowledge necessary to uncover and use digital evidence effectively in any kind of investigation. This completely updated edition provides the introductory materials that new students require, and also expands on the material presented in previous editions to help students develop these skills.

Digital Forensics for Handheld Devices Eamon P. Doherty 2012-08-17 Approximately 80 percent of the worlds population now owns a cell phone, which can hold evidence or contain logs about communications concerning a crime. Cameras, PDAs, and GPS devices can also contain information related to corporate policy infractions and crimes. Aimed to prepare investigators in the public and private sectors, **Digital Forensics**

Digital Forensics and Incident Response Gerard Johansen 2020-01-29 Build your organization's cyber defense system by effectively implementing digital forensics and incident management techniques **Key Features** Create a solid incident response framework and manage cyber incidents effectively Perform malware analysis for effective incident response Explore real-life scenarios that effectively use threat intelligence and modeling techniques **Book Description** An understanding of how digital forensics integrates with the overall response to cybersecurity incidents is key to securing your organization's infrastructure from attacks. This updated second edition will help you perform cutting-edge digital forensic activities and incident response. After focusing on the fundamentals of incident response that are critical to any information security team, you'll move on to exploring the incident response framework. From understanding its importance to creating a swift and effective response to security incidents, the book will guide you with the help of useful examples. You'll later get up to speed with digital forensic techniques, from acquiring evidence and examining volatile memory through to hard drive examination and network-based evidence. As you progress, you'll discover the role that threat intelligence plays in the incident response process. You'll also learn how to prepare an incident response report that documents the findings of your analysis. Finally, in addition to various incident response activities, the book will address malware analysis, and demonstrate how you can proactively use your digital forensic skills in threat hunting. By the end of this book, you'll have learned how to efficiently investigate and report unwanted security breaches and incidents in your organization. **What you will learn** Create and deploy an incident response capability within your own organization Perform proper evidence acquisition and handling Analyze the evidence collected and determine the root cause of a security incident Become well-versed with memory and log analysis Integrate digital forensic techniques and procedures into the overall incident response process Understand the different techniques for threat hunting Write effective incident reports that document the key findings of your analysis **Who this book is for** This book is for cybersecurity and information security professionals who want to implement digital forensics and incident response in their organization. You will also find the book helpful if you are new to the concept of digital forensics and are looking to get started with the fundamentals. A basic understanding of operating systems and some knowledge of networking fundamentals are required to get started with this book.

Cyber Forensics Albert Marcella, Jr. 2007-12-19 Designed as an introduction and overview to the field, **Cyber Forensics: A Field Manual for Collecting, Examining, and Preserving Evidence of Computer Crimes, Second Edition** integrates theory and practice to present the policies, procedures, methodologies, and legal ramifications and implications of a cyber forensic investigation. The authors guide you step-by-step through the basics of investigation and introduce the tools and procedures required to legally seize and forensically evaluate a suspect machine. Updating and expanding information on concealment techniques, new technologies, hardware, software, and relevant new legislation, this second edition delineates the scope and goals of cyber forensics to reveal

and track legal and illegal activity. Beginning with an introduction and definition of cyber forensics, chapters explain the rules of evidence and chain of custody in maintaining legally valid electronic evidence. They describe how to begin an investigation and employ investigative methodology, as well as establish standard operating procedures for the field and cyber forensic laboratory. The authors provide an in depth examination of the manipulation of technology to conceal illegal activities and the use of cyber forensics to uncover them. They discuss topics and issues such as conducting a cyber forensic investigation within both the local and federal legal framework, and evaluating the current data security and integrity exposure of multifunctional devices. Cyber Forensics includes details and tips on taking control of a suspect computer or PDA and its "operating" environment, mitigating potential exposures and risks to chain of custody, and establishing and following a flowchart for the seizure of electronic evidence. An extensive list of appendices include websites, organizations, pertinent legislation, further readings, best practice recommendations, more information on hardware and software, and a recap of the federal rules of civil procedure.

Digital Forensics Explained Greg Gogolin 2021-04-11 This book covers the full life cycle of conducting a mobile and computer digital forensic examination, including planning and performing an investigation as well as report writing and testifying. Case reviews in corporate, civil, and criminal situations are also described from both prosecution and defense perspectives. **Digital Forensics Explained, Second Edition** draws from years of experience in local, state, federal, and international environments and highlights the challenges inherent in deficient cyber security practices. Topics include the importance of following the scientific method and verification, legal and ethical issues, planning an investigation (including tools and techniques), incident response, case project management and authorization, social media and internet, cloud, anti-forensics, link and visual analysis, and psychological considerations. The book is a valuable resource for the academic environment, law enforcement, those in the legal profession, and those working in the cyber security field. Case reviews include cyber security breaches, anti-forensic challenges, child exploitation, and social media investigations. Greg Gogolin, PhD, CISSP, is a Professor of Information Security and Intelligence at Ferris State University and a licensed Professional Investigator. He has worked more than 100 cases in criminal, civil, and corporate environments.

Digital Forensics and Incident Response - Second Edition Gerard Johansen 2020-01-29 Build your organization's cyber defense system by effectively implementing digital forensics and incident management techniques **Key Features** Create a solid incident response framework and manage cyber incidents effectively Perform malware analysis for effective incident response Explore real-life scenarios that effectively use threat intelligence and modeling techniques **Book Description** An understanding of how digital forensics integrates with the overall response to cybersecurity incidents is key to securing your organization's infrastructure from attacks. This updated second edition will help you perform cutting-edge digital forensic activities and incident response. After focusing on the fundamentals of incident response that are critical to any information security team, you'll move on to exploring the incident response framework. From understanding its importance to creating a swift and effective response to security incidents, the book will guide you with the help of useful examples. You'll later get up to speed with digital forensic techniques, from acquiring evidence and examining volatile memory through to hard drive examination and network-based evidence. As you progress, you'll discover the role that threat intelligence plays in the incident response process. You'll also learn how to prepare an incident response report that documents the findings of your analysis. Finally, in addition to various incident response activities, the book will address malware analysis, and demonstrate how you can proactively use your digital forensic skills in threat hunting. By the end of this book, you'll have learned how to efficiently investigate and report unwanted security breaches and incidents in your organization. **What you will learn** Create and deploy an incident response capability within your own organization Perform proper evidence acquisition and handling Analyze the evidence collected and determine the root cause of a security incident Become well-versed with memory and log analysis Integrate digital forensic techniques and procedures into the overall incident response process Understand the different techniques for threat hunting Write effective incident reports that document the key findings of your analysis **Who this book is for** This book is for cybersecurity and information security professionals who want to implement digital forensics and incident response in their organization. You will also find the book helpful if you are new to the concept of digital forensics and are looking to get started with the fundamentals. A basic understanding of operating systems and some knowledge of networking fundamentals are required to get started with this book.

Forensic Science Kathy Mirakovits 2016-04-19 As forensic science continues to play a wider role in the investigation of crimes and apprehension of criminals, those without crime scene or crime lab training must now become familiar with the techniques and language of the forensic scientist. Avoiding the complicated science and graphic violence typical of most forensic references, this book is written specifically for those without forensic science experience. While it provides a professional reference for those not steeped in the details of forensic science, the wealth of instructor material available for teachers and its pedagogical approach make this an ideal textbook for high school and introductory level courses. Following up on the tremendously popular first edition, **Forensic Science: The Basics, Second Edition** now adds the insight of a new co-author who is known nationally for training instructors how to teach forensic science at all levels of education. The book takes readers from the initial evidence collection process, through the evaluation procedures, right up to and including the courtroom presentation. Packed with case studies, photographs, and exercises, this book provides everything the non-scientist needs to be able to understand and utilize the vital research approaches that forensic science can offer. "Test Yourself" questions at the end of each chapter familiarize you with the language and approaches needed to understand and communicate with experienced crime scene investigators and laboratory personnel. Offering the forensic sciences at their most accessible, **Forensic Science: The Basics, Second Edition** is a valuable resource for detectives, journalists, prosecutors, defense attorneys, and other non-science professionals who need to understand, interpret, and report on the newest advances in crime scene investigation. PowerPoint® lecture slides, test bank, and other ancillary material on CD-ROM is available with qualifying course adoption

Scene of the Cybercrime Debra Littlejohn Shinder 2008-07-21 When it comes to computer crimes, the criminals got a big head start. But the law enforcement and IT security communities are now working diligently to develop the knowledge, skills, and tools to successfully investigate and prosecute Cybercrime cases. When the first edition of "Scene of the Cybercrime" published in 2002, it was one of the first books that educated IT security professionals and law enforcement how to fight Cybercrime. Over the past 5 years a great deal has changed in how computer crimes are perpetrated and subsequently investigated. Also, the IT security and law enforcement communities have dramatically improved their ability to deal with Cybercrime, largely as a result of increased spending and training. According to the 2006 Computer Security Institute's and FBI's joint Cybercrime report: 52% of companies reported unauthorized use of computer systems in the prior 12 months. Each of these incidents is a Cybercrime requiring a certain level of investigation and remediation. And in many cases, an investigation is mandated by federal compliance regulations such as Sarbanes-Oxley, HIPAA, or the Payment Card Industry (PCI) Data Security Standard. **Scene of the Cybercrime, Second Edition** is a completely revised and updated book which covers all of the technological, legal,

and regulatory changes, which have occurred since the first edition. The book is written for dual audience; IT security professionals and members of law enforcement. It gives the technical experts a little peek into the law enforcement world, a highly structured environment where the "letter of the law" is paramount and procedures must be followed closely lest an investigation be contaminated and all the evidence collected rendered useless. It also provides law enforcement officers with an idea of some of the technical aspects of how cyber crimes are committed, and how technology can be used to track down and build a case against the criminals who commit them. Scene of the Cybercrime, Second Editions provides a roadmap that those on both sides of the table can use to navigate the legal and technical landscape to understand, prevent, detect, and successfully prosecute the criminal behavior that is as much a threat to the online community as "traditional" crime is to the neighborhoods in which we live. Also included is an all new chapter on Worldwide Forensics Acts and Laws. * Companion Web site provides custom tools and scripts, which readers can download for conducting digital, forensic investigations. * Special chapters outline how Cybercrime investigations must be reported and investigated by corporate IT staff to meet federal mandates from Sarbanes Oxley, and the Payment Card Industry (PCI) Data Security Standard * Details forensic investigative techniques for the most common operating systems (Windows, Linux and UNIX) as well as cutting edge devices including iPods, Blackberries, and cell phones.

Digital Forensics with Kali Linux - Second Edition Shiva V. N. Parasram 2020-04-17

Introduction to Forensic Science and Criminalistics, Second Edition Howard A. Harris 2019-06-20 This Second Edition of the best-selling Introduction to Forensic Science and Criminalistics presents the practice of forensic science from a broad viewpoint. The book has been developed to serve as an introductory textbook for courses at the undergraduate level—for both majors and non-majors—to provide students with a working understanding of forensic science. The Second Edition is fully updated to cover the latest scientific methods of evidence collection, evidence analytic techniques, and the application of the analysis results to an investigation and use in court. This includes coverage of physical evidence, evidence collection, crime scene processing, pattern evidence, fingerprint evidence, questioned documents, DNA and biological evidence, drug evidence, toolmarks and firearms, arson and explosives, chemical testing, and a new chapter of computer and digital forensic evidence. Chapters address crime scene evidence, laboratory procedures, emergency technologies, as well as an adjudication of both criminal and civil cases utilizing the evidence. All coverage has been fully updated in all areas that have advanced since the publication of the last edition. Features include: Progresses from introductory concepts—of the legal system and crime scene concepts—to DNA, forensic biology, chemistry, and laboratory principles Introduces students to the scientific method and the application of it to the analysis to various types, and classifications, of forensic evidence The authors' 90-plus years of real-world police, investigative, and forensic science laboratory experience is brought to bear on the application of forensic science to the investigation and prosecution of cases Addresses the latest developments and advances in forensic sciences, particularly in evidence collection Offers a full complement of instructor's resources to qualifying professors Includes full pedagogy—including learning objectives, key terms, end-of-chapter questions, and boxed case examples—to encourage classroom learning and retention Introduction to Forensic Science and Criminalistics, Second Edition, will serve as an invaluable resource for students in their quest to understand the application of science, and the scientific method, to various forensic disciplines in the pursuit of law and justice through the court system. An Instructor's Manual with Test Bank and Chapter PowerPoint® slides are available upon qualified course adoption.

Digital Forensics and Investigations Jason Sachowski 2018-05-16 Digital forensics has been a discipline of Information Security for decades now. Its principles, methodologies, and techniques have remained consistent despite the evolution of technology, and, ultimately, it and can be applied to any form of digital data. However, within a corporate environment, digital forensic professionals are particularly challenged. They must maintain the legal admissibility and forensic viability of digital evidence in support of a broad range of different business functions that include incident response, electronic discovery (ediscovery), and ensuring the controls and accountability of such information across networks. Digital Forensics and Investigations: People, Process, and Technologies to Defend the Enterprise provides the methodologies and strategies necessary for these key business functions to seamlessly integrate digital forensic capabilities to guarantee the admissibility and integrity of digital evidence. In many books, the focus on digital evidence is primarily in the technical, software, and investigative elements, of which there are numerous publications. What tends to get overlooked are the people and process elements within the organization. Taking a step back, the book outlines the importance of integrating and accounting for the people, process, and technology components of digital forensics. In essence, to establish a holistic paradigm—and best-practice procedure and policy approach—to defending the enterprise. This book serves as a roadmap for professionals to successfully integrate an organization's people, process, and technology with other key business functions in an enterprise's digital forensic capabilities.

Investigating Computer-Related Crime, Second Edition Peter Stephenson 2013-04-19 Since the last edition of this book was written more than a decade ago, cybercrime has evolved. Motives have not changed, but new means and opportunities have arisen with the advancement of the digital age. Investigating Computer-Related Crime: Second Edition incorporates the results of research and practice in a variety of venues, growth in the field, and new technology to offer a fresh look at the topic of digital investigation. Following an introduction to cybercrime and its impact on society, this book examines: Malware and the important differences between targeted attacks and general attacks The framework for conducting a digital investigation, how it is conducted, and some of the key issues that arise over the course of an investigation How the computer forensic process fits into an investigation The concept of system glitches vs. cybercrime and the importance of weeding out incidents that don't need investigating Investigative politics that occur during the course of an investigation, whether to involve law enforcement, and when an investigation should be stopped How to prepare for cybercrime before it happens End-to-end digital investigation Evidence collection, preservation, management, and effective use How to critique your investigation and maximize lessons learned This edition reflects a heightened focus on cyber stalking and cybercrime scene assessment, updates the tools used by digital forensic examiners, and places increased emphases on following the cyber trail and the concept of end-to-end digital investigation. Discussion questions at the end of each chapter are designed to stimulate further debate into this fascinating field.

Hacking Exposed Computer Forensics, Second Edition Aaron Philipp 2009-10-06 "Provides the right mix of practical how-to knowledge in a straightforward, informative fashion that ties it all the complex pieces together with real-world case studies. ...Delivers the most valuable insight on the market. The authors cut to the chase of what people must understand to effectively perform computer forensic investigations." --Brian H. Karney, COO, AccessData Corporation The latest strategies for investigating cyber-crime Identify and investigate computer criminals of all stripes with help from this fully updated. real-world resource. Hacking Exposed Computer Forensics, Second Edition explains how to construct a high-tech forensic lab, collect prosecutable evidence, discover e-mail and system file clues, track wireless activity, and recover obscured documents. Learn how to re-create an attacker's footsteps, communicate with counsel, prepare court-ready reports, and work through legal and organizational challenges. Case studies straight from today's headlines cover IP theft, mortgage fraud, employee misconduct, securities fraud, embezzlement, organized crime, and

consumer fraud cases. Effectively uncover, capture, and prepare evidence for investigation Store and process collected data in a highly secure digital forensic lab Restore deleted documents, partitions, user activities, and file systems Analyze evidence gathered from Windows, Linux, and Macintosh systems Use the latest Web and client-based e-mail tools to extract relevant artifacts Overcome the hacker's anti-forensic, encryption, and obscurity techniques Unlock clues stored in cell phones, PDAs, and Windows Mobile devices Prepare legal documents that will hold up to judicial and defense scrutiny

Learning Python for Forensics Preston Miller 2019-01-31 Design, develop, and deploy innovative forensic solutions using Python Key Features Discover how to develop Python scripts for effective digital forensic analysis Master the skills of parsing complex data structures with Python libraries Solve forensic challenges through the development of practical Python scripts Book Description Digital forensics plays an integral role in solving complex cybercrimes and helping organizations make sense of cybersecurity incidents. This second edition of Learning Python for Forensics illustrates how Python can be used to support these digital investigations and permits the examiner to automate the parsing of forensic artifacts to spend more time examining actionable data. The second edition of Learning Python for Forensics will illustrate how to develop Python scripts using an iterative design. Further, it demonstrates how to leverage the various built-in and community-sourced forensics scripts and libraries available for Python today. This book will help strengthen your analysis skills and efficiency as you creatively solve real-world problems through instruction-based tutorials. By the end of this book, you will build a collection of Python scripts capable of investigating an array of forensic artifacts and master the skills of extracting metadata and parsing complex data structures into actionable reports. Most importantly, you will have developed a foundation upon which to build as you continue to learn Python and enhance your efficacy as an investigator. What you will learn Learn how to develop Python scripts to solve complex forensic problems Build scripts using an iterative design Design code to accommodate present and future hurdles Leverage built-in and community-sourced libraries Understand the best practices in forensic programming Learn how to transform raw data into customized reports and visualizations Create forensic frameworks to automate analysis of multiple forensic artifacts Conduct effective and efficient investigations through programmatic processing Who this book is for If you are a forensics student, hobbyist, or professional seeking to increase your understanding in forensics through the use of a programming language, then Learning Python for Forensics is for you. You are not required to have previous experience in programming to learn and master the content within this book. This material, created by forensic professionals, was written with a unique perspective and understanding for examiners who wish to learn programming.

Digital Forensics and Incident Response - Second Edition Gerard Johansen 2020 Build your organization's cyber defense system by effectively implementing digital forensics and incident management techniques Key Features Create a solid incident response framework and manage cyber incidents effectively Perform malware analysis for effective incident response Explore real-life scenarios that effectively use threat intelligence and modeling techniques Book Description An understanding of how digital forensics integrates with the overall response to cybersecurity incidents is key to securing your organization's infrastructure from attacks. This updated second edition will help you perform cutting-edge digital forensic activities and incident response. After focusing on the fundamentals of incident response that are critical to any information security team, you'll move on to exploring the incident response framework. From understanding its importance to creating a swift and effective response to security incidents, the book will guide you with the help of useful examples. You'll later get up to speed with digital forensic techniques, from acquiring evidence and examining volatile memory through to hard drive examination and network-based evidence. As you progress, you'll discover the role that threat intelligence plays in the incident response process. You'll also learn how to prepare an incident response report that documents the findings of your analysis. Finally, in addition to various incident response activities, the book will address malware analysis, and demonstrate how you can proactively use your digital forensic skills in threat hunting. By the end of this book, you'll have learned how to efficiently investigate and report unwanted security breaches and incidents in your organization. What you will learn Create and deploy an incident response capability within your own organization Perform proper evidence acquisition and handling Analyze the evidence collected and determine the root cause of a security incident Become well-versed with memory and log analysis Integrate digital forensic techniques and procedures into the overall incident response process Understand the different techniques for threat hunting Write effective incident reports that document the key findings of your analysis Who this book is for This book is for cybersecurity and information security professionals who want to implement digital forensics and incident response in their organization. You will also find the book helpful if you are new to the ...

Cybersecurity Law, Standards and Regulations, 2nd Edition Tari Schreider 2020-02-22 In today's litigious business world, cyber-related matters could land you in court. As a computer security professional, you are protecting your data, but are you protecting your company? While you know industry standards and regulations, you may not be a legal expert. Fortunately, in a few hours of reading, rather than months of classroom study, Tari Schreider's Cybersecurity Law, Standards and Regulations (2nd Edition), lets you integrate legal issues into your security program. Tari Schreider, a board-certified information security practitioner with a criminal justice administration background, has written a much-needed book that bridges the gap between cybersecurity programs and cybersecurity law. He says, "My nearly 40 years in the fields of cybersecurity, risk management, and disaster recovery have taught me some immutable truths. One of these truths is that failure to consider the law when developing a cybersecurity program results in a protective façade or false sense of security." In a friendly style, offering real-world business examples from his own experience supported by a wealth of court cases, Schreider covers the range of practical information you will need as you explore – and prepare to apply – cybersecurity law. His practical, easy-to-understand explanations help you to: Understand your legal duty to act reasonably and responsibly to protect assets and information. Identify which cybersecurity laws have the potential to impact your cybersecurity program. Upgrade cybersecurity policies to comply with state, federal, and regulatory statutes. Communicate effectively about cybersecurity law with corporate legal department and counsel. Understand the implications of emerging legislation for your cybersecurity program. Know how to avoid losing a cybersecurity court case on procedure – and develop strategies to handle a dispute out of court. Develop an international view of cybersecurity and data privacy – and international legal frameworks. Schreider takes you beyond security standards and regulatory controls to ensure that your current or future cybersecurity program complies with all laws and legal jurisdictions. Hundreds of citations and references allow you to dig deeper as you explore specific topics relevant to your organization or your studies. This book needs to be required reading before your next discussion with your corporate legal department. This new edition responds to the rapid changes in the cybersecurity industry, threat landscape and providers. It addresses the increasing risk of zero-day attacks, growth of state-sponsored adversaries and consolidation of cybersecurity products and services in addition to the substantial updates of standards, source links and cybersecurity products.

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.

Fundamentals of Digital Forensics Joakim Kävrestad 2020-05-19 This practical and accessible textbook/reference describes the theory and methodology of digital forensic examinations, presenting examples developed in collaboration with police authorities to ensure relevance to real-world practice. The coverage includes discussions on forensic artifacts and constraints, as well as forensic tools used for law enforcement and in the corporate sector. Emphasis is placed on reinforcing sound forensic thinking, and gaining experience in common tasks through hands-on exercises. This enhanced second edition has been expanded with new material on incident response tasks and computer memory analysis. Topics and features: Outlines what computer forensics is, and what it can do, as well as what its limitations are Discusses both the theoretical foundations and the fundamentals of forensic methodology Reviews broad principles that are applicable worldwide Explains how to find and interpret several important artifacts Describes free and open source software tools, along with the AccessData Forensic Toolkit Features exercises and review questions throughout, with solutions provided in the appendices Includes numerous practical examples, and provides supporting video lectures online This easy-to-follow primer is an essential resource for students of computer forensics, and will also serve as a valuable reference for practitioners seeking instruction on performing forensic examinations. Joakim Kävrestad is a lecturer and researcher at the University of Skövde, Sweden, and an AccessData Certified Examiner. He also serves as a forensic consultant, with several years of experience as a forensic expert with the Swedish police.

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.

The Basics of Digital Forensics John Sammons 2014-12-09 The Basics of Digital Forensics provides a foundation for people new to the digital forensics field. This book teaches you how to conduct examinations by discussing what digital forensics is, the methodologies used, key tactical concepts, and the tools needed to perform examinations. Details on digital forensics for computers, networks, cell phones, GPS, the cloud and the Internet are discussed. Also, learn how to collect evidence, document the scene, and how deleted data can be recovered. The new Second Edition of this book provides you with completely up-to-date real-world examples and all the key technologies used in digital forensics, as well as new coverage of network intrusion response, how hard drives are organized, and electronic discovery. You'll also learn how to incorporate quality assurance into an investigation, how to prioritize evidence items to examine (triage), case processing, and what goes into making an expert witness. The Second Edition also features expanded resources and references, including online resources that keep you current, sample legal documents, and suggested further reading. Learn what Digital Forensics entails Build a toolkit and prepare an investigative plan Understand the common artifacts to look for in an exam Second Edition features all-new coverage of hard drives, triage, network intrusion response, and electronic discovery; as well as updated case studies, expert interviews, and expanded resources and references

The Basics of Digital Forensics, 2nd Edition John Sammons 2014 The Basics of Digital Forensics provides a foundation for people new to the digital forensics field. This book teaches you how to conduct examinations by discussing what digital forensics is, the methodologies used, key tactical concepts, and the tools needed to perform examinations. Details on digital forensics for computers, networks, cell phones, GPS, the cloud and the Internet are discussed. Also, learn how to collect evidence, document the scene, and how deleted data can be recovered. The new Second Edition of this book provides you with completely up-to-date real-world examples and all the key technologies used in digital forensics, as well as new coverage of network intrusion response, how hard drives are organized, and electronic discovery. You'll also learn how to incorporate quality assurance into an investigation, how to prioritize evidence items to examine (triage), case processing, and what goes into making an expert witness. The Second Edition also features expanded resources and references, including online resources that keep you current, sample legal documents, and suggested further reading. Learn what Digital Forensics entails Build a toolkit and prepare an investigative plan Understand the common artifacts to look for in an exam Second Edition features all-new coverage of hard drives, triage, network intrusion response, and electronic discovery; as well as updated case studies, expert interviews, and expanded resources and references.

Digital Forensics with Kali Linux Shiva V. N. Parasram 2020-04-17 Take your forensic abilities and investigation skills to the next level using powerful tools that cater to all aspects of digital forensic investigations, right from hashing to reporting Key Features Perform evidence acquisition, preservation, and analysis using a variety of Kali Linux tools Use PcapXray to perform timeline analysis of malware and network activity Implement the concept of cryptographic hashing and imaging using Kali Linux Book Description Kali Linux is a Linux-based distribution that's widely used for penetration testing and digital forensics. It has a wide range of tools to help for digital forensics investigations and incident response mechanisms. This updated second edition of Digital Forensics with Kali Linux covers the latest version of Kali Linux and The Sleuth Kit. You'll get to grips with modern techniques for analysis, extraction, and reporting using advanced tools such as FTK Imager, hex editor, and Axiom. Updated to cover digital forensics basics and advancements in the world of modern forensics, this book will also delve into the domain of operating systems. Progressing through the chapters, you'll explore various formats for file storage, including secret hiding places unseen by the end user or even the operating system. The book will also show you how to create forensic images of data and maintain integrity using hashing tools. Finally, you'll cover advanced topics such as autopsies and acquiring investigation data from networks, operating system memory, and quantum cryptography. By the end of this book, you'll have gained hands-on experience of implementing all the pillars of digital forensics: acquisition, extraction, analysis, and presentation, all using Kali Linux

tools. What you will learn Get up and running with powerful Kali Linux tools for digital investigation and analysis Perform internet and memory forensics with Volatility and Xplico Understand filesystems, storage, and data fundamentals Become well-versed with incident response procedures and best practices Perform ransomware analysis using labs involving actual ransomware Carry out network forensics and analysis using NetworkMiner and other tools Who this book is for This Kali Linux book is for forensics and digital investigators, security analysts, or anyone interested in learning digital forensics using Kali Linux. Basic knowledge of Kali Linux will be helpful to gain a better understanding of the concepts covered.

System Forensics, Investigation and Response Adjunct Professor Collin College Texas Chuck Easttom 2013-08-16 PART OF THE NEW JONES & BARTLETT LEARNING INFORMATION SYSTEMS SECURITY & ASSURANCE SERIES Completely revised and rewritten to keep pace with the fast-paced field of Computer Forensics! Computer crimes call for forensics specialists, people who know how to find and follow the evidence. System Forensics, Investigation, and Response, Second Edition begins by examining the fundamentals of system forensics, such as what forensics is, the role of computer forensics specialists, computer forensic evidence, and application of forensic analysis skills. It also gives an overview of computer crimes, forensic methods, and laboratories. It then addresses the tools, techniques, and methods used to perform computer forensics and investigation. Finally, it explores emerging technologies as well as future directions of this interesting and cutting-edge field. New and Key Features of the Second Edition: Examines the fundamentals of system forensics Discusses computer crimes and forensic methods Written in an accessible and engaging style Incorporates real-world examples and engaging cases Instructor Materials for System Forensics, Investigation, and Response include: PowerPoint Lecture Slides Exam Questions Case Scenarios/Handouts Instructor's Manual

The Basics of Digital Forensics, Second Edition John Sammons 2014-12-29

Encyclopedia of Information Science and Technology, Fourth Edition Khosrow-Pour, D.B.A., Mehdi 2017-06-20 In recent years, our world has experienced a profound shift and progression in available computing and knowledge sharing innovations. These emerging advancements have developed at a rapid pace, disseminating into and affecting numerous aspects of contemporary society. This has created a pivotal need for an innovative compendium encompassing the latest trends, concepts, and issues surrounding this relevant discipline area. During the past 15 years, the Encyclopedia of Information Science and Technology has become recognized as one of the landmark sources of the latest knowledge and discoveries in this discipline. The Encyclopedia of Information Science and Technology, Fourth Edition is a 10-volume set which includes 705 original and previously unpublished research articles covering a full range of perspectives, applications, and techniques contributed by thousands of experts and researchers from around the globe. This authoritative encyclopedia is an all-encompassing, well-established reference source that is ideally designed to disseminate the most forward-thinking and diverse research findings. With critical perspectives on the impact of information science management and new technologies in modern settings, including but not limited to computer science, education, healthcare, government, engineering, business, and natural and physical sciences, it is a pivotal and relevant source of knowledge that will benefit every professional within the field of information science and technology and is an invaluable addition to every academic and corporate library.

Cybercrime and Digital Forensics Thomas J. Holt 2017-10-16 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; 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 features two new chapters, the first looking at the law enforcement response to cybercrime and the second offering an extended discussion of online child pornography and sexual exploitation. 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. This new edition includes QR codes throughout to connect directly with relevant websites. 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.