Digital Forensics Digital Evidence In Criminal Investigations

Practically every crime now involves some aspect of digital evidence. This is the most recent volume in the Advances in Digital Forensics series. It 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. This book contains a selection of twenty-eight edited papers from the Fourth Annual IFIP WG 11.9 Conference on Digital Forensics, held at Kyoto University, Kyoto, Japan in the spring of 2008.

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.

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.

This book delivers an introduction to the topic of Digital Forensics, covering theoretical, practical and legal aspects with reference of Canada and US legal system. The first part of the book focuses on the history of digital forensics as a discipline and discusses the mannerisms and requirements

needed to become a forensic analyst. The middle portion of the book constitutes a general guide to a digital forensic investigation, mostly focusing on computers. It finishes with a discussion of the legal aspects of digital forensics as well as some other observations for managers or other interested parties. This book provides details how to conduct digital investigations in both criminal and civil contexts, and how to locate and utilize digital evidence on computers, networks, and embedded systems. Specifically, the Investigative discovery section of the book provides expert guidance in the three main areas of practice: Forensic Analysis, Electronic Discovery and Interception Investigation. Digital evidence is type of evidence that is stored on or transmitted by computers which can play a major role in a wide range of crimes, including homicide, rape, abduction, child abuse, solicitation of minors, child pornography, stalking, harassment, fraud, theft, drug trafficking, computer intrusions, espionage, and terrorism. Nevertheless an aggregate number of criminals are using computers and computer networks, few investigators are familiar in the evidentiary, technical, and legal issues related to digital evidence. As a result, digital evidence is often overlooked, collected incorrectly, and analyzed ineffectively. The aim of this book is to educate students and professionals and personnel of investigation agencies in the law enforcement, forensic science, computer security, and legal communities about digital evidence and computer crime. This book offers a comprehensive and integrative introduction of e-discovery evidence of digital forensics, with reference to abundant case laws of Canada and USA. It helps to investigate 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.

Advances in Digital Forensics IV

Learn Computer Forensics

From Reactive to Proactive Process

Digital Forensics and Investigation: From Data to Digital Evidence

Forensic Examination of Digital Evidence: A Guide for Law Enforcement Forensic Examination of Digital Evidence: A Guide for Law Enforcement

The Digital Evidence Forensic Laws in Canada and USA

A resource to help forensic investigators locate, analyze, and understand digital evidence found on modern Linux systems after a crime, security incident or cyber attack. Practical Linux Forensics dives into the technical details of analyzing postmortem forensic images of Linux systems which have been misused, abused, or the target of malicious attacks. It helps forensic investigators locate and analyze digital evidence found on Linux desktops, servers, and IoT devices. Throughout the book, you learn how to identify digital artifacts which may be of interest to an investigation, draw logical conclusions, and reconstruct past activity from incidents. You'll learn how Linux works from a digital forensics and investigation perspective, and how to interpret evidence from Linux environments. The techniques shown are intended to be independent of the forensic analysis platforms and tools used. Learn how to: • Extract evidence from storage devices and analyze partition tables, volume managers, popular Linux filesystems (Ext4, Btrfs, and Xfs), and encryption • Investigate evidence from Linux logs, including traditional syslog, the systemd journal, kernel and audit logs, and logs from daemons and applications • Reconstruct the Linux startup process, from boot loaders (UEFI and Grub) and kernel initialization, to systemd unit files and targets leading up to a graphical login • Perform analysis of power, temperature, and the physical environment of a Linux machine, and find evidence of sleep, hibernation, shutdowns, reboots, and crashes • Examine installed software, including distro installers, package formats, and package management systems from Debian, Fedora, SUSE, Arch, and other distros • Perform analysis of time and Locale settings, internationalization including language and keyboard settings, and geolocation on a Linux system • Reconstruct user login sessions (shell, X11 and Wayland), desktops (Gnome, KDE, and others) and analyze keyrings, wallets, trash cans, clipboards, thumbnails, recent files and other desktop artifacts • Analyze network configuration, including interfaces, addresses, network managers, DNS, wireless artifacts (Wi-Fi, Bluetooth, WWAN), VPNs (including WireGuard), firewalls, and proxy settings • Identify traces of attached peripheral devices (PCI, USB, Thunderbolt, Bluetooth) including external storage, cameras, and mobiles, and reconstruct printing and scanning activity

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.

Explains both cloud security and privacy, and digital forensics in a unique, systematical way Discusses both security and privacy of cloud and digital forensics in a systematic way Contributions by top U.S., Chinese and international researchers, and professionals active in the field of information / network security, digital / computer forensics, and the cloud and big data Of interest to those focused upon security and implementation, and those focused upon incident management Logical, well-structured and organized

"This book is a must for anyone attempting to examine the iPhone. The level of forensic detail is excellent. If only all guides to forensics were written with this clarity!"-Andrew Sheldon, Director of Evidence Talks, computer forensics experts With iPhone use increasing in business networks, IT and security professionals face a serious challenge: these devices store an enormous amount of information. If your staff conducts business with an iPhone, you need to know how to recover, analyze, and securely destroy sensitive data. iPhone Forensics supplies the knowledge necessary to conduct complete and highly specialized forensic analysis of the iPhone, iPhone 3G, and iPod Touch. This book helps

you: Determine what type of data is stored on the device Break v1.x and v2.x passcode-protected iPhones to gain access to the device Build a custom recovery toolkit for the iPhone Interrupt iPhone 3G's "secure wipe" process Conduct data recovery of a v1.x and v2.x iPhone user disk partition, and preserve and recover the entire raw user disk partition Recover deleted voicemail, images, email, and other personal data, using data carving techniques Recover geotagged metadata from camera photos Discover Google map lookups, typing cache, and other data stored on the live file system Extract contact information from the iPhone's database Use different recovery strategies based on case needs And more. iPhone Forensics includes techniques used by more than 200 law enforcement agencies worldwide, and is a must-have for any corporate compliance and disaster recovery plan.

Strategic Leadership in Digital Evidence

Fundamentals of Digital Forensics
Advances in Digital Forensics II
Security, Privacy, and Digital Forensics in the Cloud
Digital Forensics Explained

The field of computer forensics has experienced significant growth recently and those looking to get into the industry have significant opportunity for upward mobility. Focusing on the concepts investigators need to know to conduct a thorough investigation, Digital Forensics Explained provides an overall description of the forensic practice from a practitioner's perspective. Starting with an overview, the text describes best practices based on the author's decades of experience conducting investigations and working in information technology. It illustrates the forensic process, explains what it takes to be an investigator, and highlights emerging trends. Filled with helpful templates and contributions from seasoned experts in their respective fields, the book includes coverage of: Internet and email investigations Mobile forensics for cell phones, iPads, music players, and other small devices Cloud computing from an architecture perspective and its impact on digital forensics Anti-forensic techniques that may be employed to make a forensic exam more difficult to conduct Recoverability of information from damaged media The progression of a criminal case from start to finish Tools that are often used in an examination, including commercial, free, and open-source tools; computer and mobile tools; and things as simple as extension cords Social media and social engineering forensics Case documentation and presentation, including sample summary reports and a cover sheet for a cell phone investigation The text includes acquisition forms, a sequential process outline to guide your investigation, and a checklist of supplies you'll need when responding to an incident. Providing you with the understanding and the tools to deal with suspects who find ways to make their digital activities hard to trace, the book also considers cultural implications, ethics, and the psychological effects that digital forensics investigations can have on investigators.

The definitive text for students of digital forensics, as well as professionals looking to deepen their understanding of an increasingly critical field Written by faculty members and associates of the world-renowned

Norwegian Information Security Laboratory (NisLab) at the Norwegian University of Science and Technology (NTNU), this textbook takes a scientific approach to digital forensics ideally suited for university courses in digital forensics and information security. Each chapter was written by an accomplished expert in his or her field, many of them with extensive experience in law enforcement and industry. The author team comprises experts in digital forensics, cybercrime law, information security and related areas. Digital forensics is a key competency in meeting the growing risks of cybercrime, as well as for criminal investigation generally. Considering the astonishing pace at which new information technology – and new ways of exploiting information technology – is brought on line, researchers and practitioners regularly face new technical challenges, forcing them to continuously upgrade their investigatory skills. Designed to prepare the next generation to rise to those challenges, the material contained in Digital Forensics has been tested and refined by use in both graduate and undergraduate programs and subjected to formal evaluations for more than ten years. Encompasses all aspects of the field, including methodological, scientific, technical and legal matters Based on the latest research, it provides novel insights for students, including an informed look at the future of digital forensics Includes test questions from actual exam sets, multiple choice questions suitable for online use and numerous visuals, illustrations and case example images Features real-word examples and scenarios, including court cases and technical problems, as well as a rich library of academic references and references to online media Digital Forensics is an excellent introductory text for programs in computer science and computer engineering and for master degree programs in military and police education. It is also a valuable reference for legal practitioners, police officers, investigators, and forensic practitioners seeking to gain a deeper understanding of digital forensics and cybercrime.

*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

Implementing Digital Forensic Readiness: From Reactive to Proactive Process shows information security and digital forensic professionals how to increase operational efficiencies by implementing a pro-active approach to digital forensics throughout their organization. It demonstrates how digital forensics aligns strategically within an organization's business operations and information security's program. This book illustrates how the proper collection, preservation, and presentation of digital evidence is essential for reducing potential business impact as a result of digital crimes, disputes, and incidents. It also explains how every stage in the digital evidence lifecycle impacts the integrity of data, and how to properly manage digital evidence throughout the entire investigation. Using a digital forensic readiness approach and preparedness as a business goal, the administrative, technical, and physical elements included throughout this book will enhance the relevance and credibility of digital evidence. Learn how to document the available systems and logs as potential digital evidence sources, how gap analysis can be used where digital evidence is not sufficient, and the importance of monitoring data sources in a timely manner. This book offers standard operating procedures to document how an evidence-based presentation should be made, featuring legal resources for reviewing digital evidence. Explores the training needed to ensure competent performance of the handling, collecting, and preservation of digital evidence Discusses the importance of how long term data storage must take into consideration confidentiality, integrity, and availability of digital evidence Emphasizes how incidents identified through proactive monitoring can be reviewed in terms of business risk Includes learning aids such as chapter introductions, objectives, summaries, and definitions

Digital Forensics and Investigations

First International ICST Conference, ICDF2C 2009, Albany, Ny, USA, September 30 - October 2, 2009, Revised Selected Papers

Digital Forensics and Cyber Crime

A beginner's guide to searching, analyzing, and securing digital evidence

Breakthroughs in Research and Practice

Identifying Technology and Other Needs to More Effectively Acquire and Utilize Digital Evidence

Get started with the art and science of digital forensics with this practical, hands-on guide!About This Book*Champion the skills of digital forensics by understanding the nature of recovering and preserving digital information which is essential for legal or disciplinary proceedings*Explore new and promising forensic processes and tools based on 'disruptive technology' to regain control of caseloads.*Richard Boddington, with 10+ years of digital forensics, demonstrates real life scenarios with a pragmatic approachWho This Book Is ForThis book is for anyone who wants to get into the field of digital forensics. Prior knowledge of programming languages (any) will be of great help, but not a compulsory prerequisite.What You Will Learn*Gain familiarity with a range of

different digital devices and operating and application systems that store digital evidence.*Appreciate and understand the function and capability of forensic processes and tools to locate and recover digital evidence.*Develop an understanding of the critical importance of recovering digital evidence in pristine condition and ensuring its safe handling from seizure to tendering it in evidence in court.*Recognise the attributes of digital evidence and where it may be hidden and is often located on a range of digital devices.*Understand the importance and challenge of digital evidence analysis and how it can assist investigations and court cases.*Explore emerging technologies and processes that empower forensic practitioners and other stakeholders to harness digital evidence more effectively.In DetailDigital Forensics is a methodology which includes using various tools, techniques, and programming language. This book will get you started with digital forensics and then follow on to preparing investigation plan and preparing toolkit for investigation.In this book you will explore new and promising forensic processes and tools based on 'disruptive technology' that offer experienced and budding practitioners the means to regain control of their caseloads. During the course of the book, you will get to know about the technical side of digital forensics and various tools that are needed to perform digital forensics. This book will begin with giving a quick insight into the nature of digital evidence, where it is located and how it can be recovered and forensically examined to assist investigators. This book will take you through a series of chapters that look at the nature and circumstances of digital forensic examinations and explains the processes of evidence recovery and preservation from a range of digital devices, including mobile phones, and other media. This book has a range of case studies and simulations will allow you to apply the knowledge of the theory gained to real-life situations.By the end of this book you will have gained a sound insight into digital forensics and its key components.

The vast majority of modern criminal investigations involve some element of digital evidence, from mobile phones, computers, CCTV and other devices. Digital Forensics: Digital Evidence in Criminal Investigations provides the reader with a better understanding of how digital evidence complements “traditional” scientific evidence and examines how it can be used more effectively and efficiently in a range of investigations. Taking a new approach to the topic, this book presents digital evidence as an adjunct to other types of evidence and discusses how it can be deployed effectively in support of investigations. The book provides investigators/SSMs/other managers with sufficient contextual and technical information to be able to make more effective use of digital evidence sources in support of a range of investigations. In particular, it considers the roles played by digital devices in society and hence in criminal activities. From this, it examines the role and nature of evidential data which may be recoverable from a range of devices, considering issues relating to reliability and usefulness of those data. Includes worked case examples, test questions and review quizzes to enhance student understanding Solutions provided in an accompanying website Includes numerous case studies throughout to highlight how digital evidence is handled at the crime scene and what can happen when procedures are carried out incorrectly Considers digital evidence in a broader context alongside other scientific evidence Discusses the role of digital

devices in criminal activities and provides methods for the evaluation and prioritizing of evidence sources Includes discussion of the issues surrounding modern digital evidence examinations, for example; volume of material and its complexity Clear overview of all types of digital evidence Digital Forensics: Digital Evidence in Criminal Investigations is an invaluable text for undergraduate students taking either general forensic science courses where digital forensics may be a module or a dedicated computer/digital forensics degree course. The book is also a useful overview of the subject for postgraduate students and forensic practitioners.

Uncover a digital trail of e-evidence by using the helpful, easy-to-understand information in Computer Forensics For Dummies! Professional and armchair investigators alike can learn the basics of computer forensics, from digging out electronic evidence to solving the case. You won't need a computer science degree to master e-discovery. Find and filter data in mobile devices, e-mail, and other Web-based technologies. You'll learn all about e-mail and Web-based forensics, mobile forensics, passwords and encryption, and other e-evidence found through VoIP, voicemail, legacy mainframes, and databases. You'll discover how to use the latest forensic software, tools, and equipment to find the answers that you're looking for in record time. When you understand how data is stored, encrypted, and recovered, you'll be able to protect your personal privacy as well. By the time you finish reading this book, you'll know how to: Prepare for and conduct computer forensics investigations Find and filter data Protect personal privacy Transfer evidence without contaminating it Anticipate legal loopholes and opponents' methods Handle passwords and encrypted data Work with the courts and win the case Plus, Computer Forensics for Dummies includes lists of things that everyone interested in computer forensics should know, do, and build. Discover how to get qualified for a career in computer forensics, what to do to be a great investigator and expert witness, and how to build a forensics lab or toolkit. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

The Definitive, Up-to-Date Guide to Digital Forensics The rapid proliferation of cyber crime is increasing the demand for digital forensics experts in both law enforcement and in the private sector. In Digital Archaeology, expert practitioner Michael Graves has written the most thorough, realistic, and up-to-date guide to the principles and techniques of modern digital forensics. Graves begins by providing a solid understanding of the legal underpinnings of and critical laws affecting computer forensics, including key principles of evidence and case law. Next, he explains how to systematically and thoroughly investigate computer systems to unearth crimes or other misbehavior, and back it up with evidence that will stand up in court. Drawing on the analogy of archaeological research, Graves explains each key tool and method investigators use to reliably uncover hidden information in digital systems. His detailed demonstrations often include the actual syntax of command-line utilities. Along the way, he presents exclusive coverage of facilities management, a full chapter on the crucial topic of first response to a digital crime scene, and up-to-the-minute coverage of investigating evidence in the cloud. Graves concludes by presenting coverage of important professional and business issues associated with building a career in digital forensics, including current licensing and

certification requirements. Topics Covered Include Acquiring and analyzing data in ways consistent with forensic procedure Recovering and examining e-mail, Web, and networking activity Investigating users' behavior on mobile devices Overcoming anti-forensics measures that seek to prevent data capture and analysis Performing comprehensive electronic discovery in connection with lawsuits Effectively managing cases and documenting the evidence you find Planning and building your career in digital forensics Digital Archaeology is a key resource for anyone preparing for a career as a professional investigator; for IT professionals who are sometimes called upon to assist in investigations; and for those seeking an explanation of the processes involved in preparing an effective defense, including how to avoid the legally indefensible destruction of digital evidence.

Forensic Science, Computers and the Internet

A Practical Guide Using Windows OS

Digital Evidence and Computer Crime

Handbook of Digital Forensics and Investigation

Guide to Computer Forensics and Investigations

From Reactive to Proactive Process, Second Edition

Use this hands-on, introductory guide to understand and implement digital forensics to investigate computer crime using Windows, the most widely used operating system. This book provides you with the necessary skills to identify an intruder's footprints and to gather the necessary digital evidence in a forensically sound manner to prosecute in a court of law. Directed toward users with no experience in the digital forensics field, this book provides guidelines and best practices when conducting investigations as well as teaching you how to use a variety of tools to investigate computer crime. You will be prepared to handle problems such as law violations, industrial espionage, and use of company resources for private use. Digital Forensics Basics is written as a series of tutorials with each task demonstrating how to use a specific computer forensics tool or technique. Practical information is provided and users can read a task and then implement it directly on their devices. Some theoretical information is presented to define terms used in each technique and for users with varying IT skills. What You'll Learn Assemble computer forensics lab requirements, including workstations, tools, and more Document the digital crime scene, including preparing a sample chain of custody form Differentiate between law enforcement agency and corporate investigationsGather intelligence using OSINT sources Acquire and analyze digital evidence Conduct in-depth forensic analysis of Windows operating systems covering Windows 10–specific feature forensicsUtilize anti-forensic techniques, including steganography, data destruction techniques, encryption, and anonymity techniques Who This Book Is For Police and other law enforcement personnel, judges (with no technical background), corporate and nonprofit management, IT specialists and computer security professionals, incident response team members, IT military and intelligence services officers, system administrators, e-business security professionals, and banking and insurance professionals

Strategic Leadership in Digital Evidence: What Executives Need to Know provides leaders with broad knowledge and understanding of practical concepts in digital evidence, along with its impact on investigations. The book's chapters cover the differentiation of related fields, new market technologies, operating systems, social networking, and much more. This guide is written at the layperson level, although the

audience is expected to have reached a level of achievement and seniority in their profession, principally law enforcement, security and intelligence. Additionally, this book will appeal to legal professionals and others in the broader justice system. Covers a broad range of challenges confronting investigators in the digital environment Addresses gaps in currently available resources and the future focus of a fast-moving field Written by a manager who has been a leader in the field of digital forensics for decades

Implementing Digital Forensic Readiness: From Reactive to Proactive Process, Second Edition presents the optimal way for digital forensic and IT security professionals to implement a proactive approach to digital forensics. The book details how digital forensic processes can align strategically with business operations and an already existing information and data security program. Detailing proper collection, preservation, storage, and presentation of digital evidence, the procedures outlined illustrate how digital evidence can be an essential tool in mitigating risk and redusing the impact of both internal and external, digital incidents, disputes, and crimes. By utilizing a digital forensic readiness approach and stances, a company's preparedness and ability to take action quickly and respond as needed. In addition, this approach enhances the ability to gather evidence, as well as the relevance, reliability, and credibility of any such evidence. New chapters to this edition include Chapter 4 on Code of Ethics and Standards, Chapter 5 on Digital Forensics as a Business, and Chapter 10 on Establishing Legal Admissibility. This book offers best practices to professionals on enhancing their digital forensic program, or how to start and develop one the right way for effective forensic readiness in any corporate or enterprise setting.

Digital Forensics for Legal ProfessionalsUnderstanding Digital Evidence from the Warrant to the CourtroomElsevier

The Best Damn Cybercrime and Digital Forensics Book Period

Understanding Digital Evidence from the Warrant to the Courtroom

Digital Forensics Processing and Procedures

Securing Digital Evidence with Linux Tools

Digital Archaeology

Digital Forensics and Forensic Investigations: Breakthroughs in Research and Practice

Get up and running with collecting evidence using forensics best practices to present your findings in judicial or administrative proceedings Key Features Learn the core techniques of computer forensics to acquire and secure digital evidence skillfully Conduct a digital forensic examination and document the digital evidence collected Analyze security systems and overcome complex challenges with a variety of forensic investigations Book Description A computer forensics investigator must possess a variety of skills, including the ability to answer legal questions, gather and document evidence, and prepare for an investigation. This book will help you get up and running with using digital forensic tools and techniques to investigate cybercrimes successfully. Starting with an overview of forensics and all the open source and commercial tools needed to get the job done, you'll learn core forensic practices for searching databases and analyzing data over networks, personal devices, and web applications. You'll then learn how to acquire valuable information from different places, such as filesystems, e-mails, browser histories, and search queries, and capture data remotely. As you advance, this book will guide you through implementing forensic

techniques on multiple platforms, such as Windows, Linux, and macOS, to demonstrate how to recover valuable information as evidence. Finally, you'll get to grips with presenting your findings efficiently in judicial or administrative proceedings. By the end of this book, you'll have developed a clear understanding of how to acquire, analyze, and present digital evidence like a proficient computer forensics investigator. What you will learn Understand investigative processes, the rules of evidence, and ethical guidelines Recognize and document different types of computer hardware Understand the boot process covering BIOS, UEFI, and the boot sequence Validate forensic hardware and software Discover the locations of common Windows artifacts Document your findings using technically correct terminology Who this book is for If you're an IT beginner, student, or an investigator in the public or private sector this book is for you.This book will also help professionals and investigators who are new to incident response and digital forensics and interested in making a career in the cybersecurity domain.

The First International Conference on Digital Forensics and Cyber Crime (ICDF2C) was held in Albany from September 30 to October 2, 2009. The field of digital for- sics is growing rapidly with implications for several fields including law enforcement, network security, disaster recovery and accounting. This is a multidisciplinary area that requires expertise in several areas including, law, computer science, finance, networking, data mining, and criminal justice. This conference brought together pr- titioners and researchers from diverse fields providing opportunities for business and intellectual engagement among attendees. All the conference sessions were very well attended with vigorous discussions and strong audience interest. The conference featured an excellent program comprising high-quality paper pr- entations and invited speakers from all around the world. The first day featured a plenary session including George Philip, President of University at Albany, Harry Corbit, Suprintendent of New York State Police, and William Pelgrin, Director of New York State Office of Cyber Security and Critical Infrastructure Coordination. An outstanding keynote was provided by Miklos Vasarhelyi on continuous auditing. This was followed by two parallel sessions on accounting fraud /financial crime, and m- timedia and handheld forensics. The second day of the conference featured a mesm- izing keynote talk by Nitesh Dhanjani from Ernst and Young that focused on psyc- logical profiling based on open source intelligence from social network analysis. The third day of the conference featured both basic and advanced tutorials on open source forensics.

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.

Digital Forensics and Investigation: From Data to Digital Evidence examines various aspects of digital forensics and investigation including an extensive overview from data to digital evidence. It includes definitions of digital forensics, models, technologies and strategies. Provides the reader with insights into the development of digital forensics and investigations from data to digital evidence so as to understand the criminal's mind, motivations, arguments, backgrounds and why some devices are better targets of cybercriminals.

Digital Forensics for Legal Professionals

Theories, Concepts and Practices

Recovering Evidence, Personal Data, and Corporate Assets

Introduction To Cyber Forensic Psychology: Understanding The Mind Of The Cyber Deviant Perpetrators

Computer Forensics For Dummies

Meeting the Requirements of ISO 17020, ISO 17025, ISO 27001 and Best Practice Requirements

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

This guide is intended for use by members of the law enforcement community who are responsible for the examination of digital evidence. The guide, published as an NIJ Special Report, is the second in a series of guides on investigating electronic crime. It deals with common situations encountered during the processing and handling of digital evidence and can be used to help agencies develop their own policies and procedures. This guide is intended for use by law enforcement officers and other members of the law enforcement community who are responsible for the examination of digital evidence. This guide is not all-inclusive. Rather, it deals with common situations encountered during the examination of digital evidence. It is not a mandate for the law enforcement community; it is a guide agencies can use to help them develop their own policies and procedures. Technology is advancing at such a rapid rate that the suggestions in this guide are best examined in the context of current technology and practices. Each case is unique and the judgment of the examiner should be given deference in the implementation of the procedures suggested in this guide. Circumstances of individual cases and Federal, State, and local laws/rules may also require actions other than those described in this guide. When dealing with digital evidence, the following general forensic and procedural principles should be applied: ? Actions taken to secure and collect digital evidence should not affect the integrity of that evidence. ? Persons conducting an examination of digital evidence should be trained for that purpose. ? Activity relating to the seizure, examination, storage, or transfer of digital evidence should be documented, preserved, and available for review. Through all of this, the examiner should be cognizant of the need to conduct an accurate and impartial examination of the digital evidence. How is digital evidence processed? Assessment. Computer forensic examiners should assess digital evidence thoroughly with respect to the scope of the case to determine the course of action to take. Acquisition. Digital evidence, by its very nature, is fragile and can be altered, damaged, or destroyed by improper handling or examination. Examination is best conducted on a copy of the original evidence. The original evidence should be acquired in a manner that protects and preserves the integrity of the evidence. Examination. The purpose of the examination process is to extract and analyze digital evidence. Extraction refers to the recovery of data from its media. Analysis refers to the interpretation of the recovered data and putting it in a logical and useful format. Documenting and reporting. Actions and observations should be documented throughout the forensic processing of evidence. This will conclude with the preparation of a written report of the findings.

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.

"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.

Theory, Methods, and Real-Life Applications

Cybercrime and Digital Forensics

The Art and Science of Digital Forensics

Digital Forensics

Your one-stop guide to searching, analyzing, acquiring, and securing digital evidence

Second International ICST Conference, ICDF2C 2010, Abu Dhabi, United Arab Emirates, October 4-6, 2010, Revised Selected Papers

Digital Forensics for Legal Professionals provides you with a guide to digital technology forensics in plain English. In the authors' years of experience in working with attorneys as digital forensics experts, common questions arise again and again: “What do I ask for?? “Is the evidence relevant?? “What does this item in the forensic report mean?? “What should I ask the other expert?? “What should I ask you?? “Can you explain that to a jury?? This book answers many of those questions in clear language that is understandable by non-technical people. With many illustrations and diagrams that will be usable in court, they explain technical concepts such as unallocated space, forensic copies, timeline artifacts and metadata in simple terms that make these concepts accessible to both

attorneys and juries. The authors also explain how to determine what evidence to ask for, evidence might be that could be discoverable, and the methods for getting to it including relevant subpoena and motion language. Additionally, this book provides an overview of the current state of digital forensics, the right way to select a qualified expert, what to expect from a qualified expert and how to properly use experts before and during trial. Includes a companion Web site with: courtroom illustrations, and examples of discovery motions Provides examples of direct and cross examination questions for digital evidence Contains a reference of definitions of digital forensic terms, relevant case law, and resources for the attorney

Essential for anyone who works with technology in the field, E-DISCOVERY is a hands-on, how-to training guide that provides students with comprehensive coverage of the technology used in e-discovery in civil and criminal cases. From discovery identification to collection, processing, review, production, and trial presentation, this practical text covers everything your students need to know about e-discovery, including the Federal Rules of Civil Procedure, Federal Rules of Criminal Procedure, and Federal Rules of Evidence. Throughout the text, students will have the opportunity to work with e-discovery tools such as Discovery Attender, computer forensics tools such as AccessData's Forensics ToolKit, as well as popular processing and review platforms such as iConect, Concordance, and iPro. An interactive courtroom tutorial and use of Trial Director are included to complete the litigation cycle. Multiple tools are discussed for each phase, giving your students a good selection of potential resources for each task. Finally , real-life examples are woven throughout the text, revealing little talked-about potential pitfalls, as well as best practice and cost management suggestions. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

*Handbook of Digital Forensics and Investigation builds on the success of the Handbook of Computer Crime Investigation, bringing together renowned experts in all areas of digital forensics and investigation to provide the consummate resource for practitioners in the field. It is also designed as an accompanying text to Digital Evidence and Computer Crime. This unique collection details how to conduct digital investigations in both criminal and civil contexts, and how to locate and utilize digital evidence on computers, networks, and embedded systems. Specifically, the Investigative Methodology section of the Handbook provides expert guidance in the three main areas of practice: Forensic Analysis, Electronic Discovery, and Intrusion Investigation. The Technology section is extended and updated to reflect the state of the art in each area of specialization. The main areas of focus in the Technology section are forensic analysis of Windows, Unix, Macintosh, and embedded systems (including cellular telephones and other mobile devices), and investigations involving networks (including enterprise environments and mobile telecommunications technology). This handbook is an essential technical reference and on-the-job guide that IT professionals, forensic practitioners, law enforcement, and attorneys will rely on when confronted with computer related crime and digital evidence of any kind. *Provides methodologies proven in practice for conducting digital investigations of all kinds *Demonstrates how to locate and interpret a wide variety of digital evidence, and how it can be useful in investigations *Presents tools in the context of the investigative process, including EnCase, FTK, ProDiscover, foremost, XACT, Network Miner, Splunk, flow-tools, and many other specialized utilities and*

analysis platforms *Case examples in every chapter give readers a practical understanding of the technical, logistical, and legal challenges that arise in real investigations

This hands-on textbook provides an accessible introduction to the fundamentals of digital forensics. The text contains thorough coverage of the theoretical foundations, explaining what computer forensics is, what it can do, and also what it can't. A particular focus is presented on establishing sound forensic thinking and methodology, supported by practical guidance on performing typical tasks and using common forensic tools. Emphasis is also placed on universal principles, as opposed to content unique to specific legislation in individual countries. Topics and features: introduces the fundamental concepts in digital forensics, and the steps involved in a forensic examination in a digital environment; discusses the nature of what cybercrime is, and how digital evidence can be of use during criminal investigations into such crimes; offers a practical overview of common practices for cracking encrypted data; reviews key artifacts that have proven to be important in several cases, highlighting where to find these and how to correctly interpret them; presents a survey of various different search techniques, and several forensic tools that are available for free; examines the functions of AccessData Forensic Toolkit and Registry Viewer; proposes methods for analyzing applications, timelining, determining the identity of the computer user, and deducing if the computer was remote controlled; describes the central concepts relating to computer memory management, and how to perform different types of memory analysis using the open source tool Volatility; provides review questions and practice tasks at the end of most chapters, and supporting video lectures on YouTube. 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 in law enforcement or in the private sector.

Digital Evidence in Criminal Investigations

From Data to Digital Evidence

IPhone Forensics

Practical Forensic Imaging

Digital Evidence and the U.S. Criminal Justice System

What Executives Need to Know

Get started with the art and science of digital forensics with this practical, hands-on guide! About This Book Champion the skills of digital forensics by understanding the nature of recovering and preserving digital information which is essential for legal or disciplinary proceedings Explore new and promising forensic processes and tools based on 'disruptive technology' to regain control of caseloads. Richard Boddington, with 10+ years of digital forensics, demonstrates real life scenarios with a pragmatic approach Who This Book Is For This book is for anyone who wants to get into the field of digital forensics. Prior knowledge of programming languages (any) will be of great help, but not a compulsory prerequisite. What You Will Learn Gain familiarity with a range of different digital devices and operating and application systems that store digital evidence. Appreciate and understand the function and capability of forensic processes and tools to locate and recover digital evidence. Develop an understanding of the critical importance of recovering digital evidence in pristine condition and ensuring its safe handling from seizure to tendering it in evidence in court. Recognise the attributes of digital evidence and where it may be hidden and is often located on a range of digital devices. Understand the importance and challenge of digital evidence

analysis and how it can assist investigations and court cases. Explore emerging technologies and processes that empower forensic practitioners and other stakeholders to harness digital evidence more effectively. In Detail Digital Forensics is a methodology which includes using various tools, techniques, and programming language. This book will get you started with digital forensics and then follow on to preparing investigation plan and preparing toolkit for investigation. In this book you will explore new and promising forensic processes and tools based on 'disruptive technology' that offer experienced and budding practitioners the means to regain control of their caseloads. During the course of the book, you will get to know about the technical side of digital forensics and various tools that are needed to perform digital forensics. This book will begin with giving a quick insight into the nature of digital evidence, where it is located and how it can be recovered and forensically examined to assist investigators. This book will take you through a series of chapters that look at the nature and circumstances of digital forensic examinations and explains the processes of evidence recovery and preservation from a range of digital devices, including mobile phones, and other media. This book has a range of case studies and simulations will allow you to apply the knowledge of the theory gained to real-life situations. By the end of this book you will have gained a sound insight into digital forensics and its key components. Style and approach The book takes the reader through a series of chapters that look at the nature and circumstances of digital forensic examinations and explains the processes of evidence recovery and preservation from a range of digital devices, including mobile phones, and other media. The mystery of digital forensics is swept aside and the reader will gain a quick insight into the nature of digital evidence, where it is located and how it can be recovered and forensically examined to assist investigators.

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.

Forensic image acquisition is an important part of postmortem incident response and evidence collection. Digital forensic investigators acquire, preserve, and manage digital evidence to support civil and criminal cases; examine organizational policy violations; resolve disputes; and analyze cyber attacks. Practical Forensic Imaging takes a detailed look at how to secure and manage digital evidence using Linux-based command line tools. This essential guide walks you through the entire forensic acquisition process and covers a wide range of practical scenarios and situations related to the imaging of storage media. You'll learn how to: –Perform forensic imaging of magnetic hard disks, SSDs and flash drives, optical discs, magnetic tapes, and legacy technologies –Protect attached evidence media from accidental modification –Manage large forensic image files, storage capacity, image format conversion, compression, splitting, duplication, secure transfer and storage, and secure disposal –Preserve and verify evidence integrity with cryptographic and piecewise hashing, public key signatures, and RFC-3161 timestamping –Work with newer drive and interface technologies like NVME, SATA Express, 4K-native sector drives, SSHDs, SAS, UASP/USB3x, and Thunderbolt –Manage drive security such as ATA passwords; encrypted thumb drives; Opal self-encrypting drives; OS-encrypted drives using BitLocker, FileVault, and TrueCrypt; and others –Acquire usable images from more complex or challenging situations such as RAID systems, virtual machine images, and damaged media With its unique focus on digital forensic acquisition and evidence preservation, Practical Forensic Imaging is a valuable resource for experienced digital forensic investigators wanting to advance their Linux skills and experienced Linux administrators wanting to learn digital forensics. This is a must-have reference for every digital forensics lab.

The emergence of the World Wide Web, smartphones, and Computer-Mediated Communications (CMCs) profoundly affect the way in which people interact online and offline. Individuals who engage in socially unacceptable or outright criminal acts increasingly utilize technology to connect with one another in ways that are not otherwise possible in the real world due to shame, social stigma, or risk of detection. As a consequence, there are now myriad opportunities for wrongdoing and abuse through technology. This book offers a comprehensive and integrative introduction to cybercrime. It is the first to connect the disparate literature on the various types of cybercrime, the 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 digital piracy, economic crime and online fraud, pornography and online sex crime, cyber-bulling and cyber-stalking, cyber-terrorism and extremism, digital forensic investigation and its legal context, cybercrime policy. 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 students exercises and instructor resources. This text is essential reading for courses on cybercrime, cyber-deviancy, digital forensics, cybercrime investigation and the sociology of technology.

Practical Digital Forensics

Digital Forensics Basics
A Guide for Digital Investigators
Implementing Digital Forensic Readiness
Cyber Forensics
Practical Linux Forensics

This edited book, Introduction to Cyber Forensic Psychology: Understanding the Mind of the Cyber Deviant Perpetrators, is the first of its kind in Singapore, which explores emerging cybercrimes and cyber enabled crimes.Utilising a forensic psychology perspective to examine the mind of the cyber deviant perpetrators as well as strategies for assessment, prevention, and interventions, this book seeks to tap on the valuable experiences and knowledge of leading forensic psychologists and behavioural scientists in Singapore.Some of the interesting trends discussed in this book include digital self-harm, stalkerware usage, livestreaming of crimes, online expression of hate and rebellion, attacks via smart devices, COVID-19 related scams and cyber vigilantism. Such insights would enhance our awareness about growing pervasiveness of cyber threats and showcase how behavioural sciences is a force-multiplier in complementing the existing technological solutions.

This report describes the results of a National Institute of Justice (NIJ)-sponsored research effort to identify and prioritize criminal justice needs related to digital evidence collection, management, analysis, and use. With digital devices becoming ubiquitous, digital evidence is increasingly important to the investigation and prosecution of many types of crimes. These devices often contain information about crimes committed, movement of suspects, and criminal associates. However, there are significant challenges to successfully using digital evidence in prosecutions, including inexperience of patrol officers and detectives in preserving and collecting digital evidence, lack of familiarity with digital evidence on the part of court officials, and an overwhelming volume of work for digital evidence examiners. Through structured interaction with police digital forensic experts, prosecuting attorneys, a privacy advocate, and industry representatives, the effort identified and prioritized specific needs to improve utilization of digital evidence in criminal justice. Several top-tier needs emerged from the analysis, including education of prosecutors and judges regarding digital evidence opportunities and challenges; training for patrol officers and investigators to promote better collection and preservation of digital evidence; tools for detectives to triage analysis of digital evidence in the field; development of regional models to make digital evidence analysis capability available to small departments; and training to address concerns about maintaining the currency of training and technology available to digital forensic examiners.

Updated with the latest advances from the field, GUIDE TO COMPUTER FORENSICS AND INVESTIGATIONS, Fifth Edition combines all-encompassing topic coverage and authoritative information from seasoned experts to deliver

the most comprehensive forensics resource available. This proven author team's wide ranging areas of expertise mirror the breadth of coverage provided in the book, which focuses on techniques and practices for gathering and analyzing evidence used to solve crimes involving computers. Providing clear instruction on the tools and techniques of the trade, it introduces readers to every step of the computer forensics investigation-from lab set-up to testifying in court. It also details step-by-step guidance on how to use current forensics software. Appropriate for learners new to the field, it is also an excellent refresher and technology update for professionals in law enforcement, investigations, or computer security. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This is the first digital forensics book that covers the complete lifecycle of digital evidence and the chain of custody. This comprehensive handbook includes international procedures, best practices, compliance, and a companion web site with downloadable forms. Written by world-renowned digital forensics experts, this book is a must for any digital forensics lab. It provides anyone who handles digital evidence with a guide to proper procedure throughout the chain of custody--from incident response through analysis in the lab. A step-by-step guide to designing, building and using a digital forensics lab A comprehensive guide for all roles in a digital forensics laboratory Based on international standards and certifications

The Basics of Digital Forensics

The Primer for Getting Started in Digital Forensics

An Introduction

People, Process, and Technologies to Defend the Enterprise

E-Discovery: An Introduction to Digital Evidence