Building A Digital Forensic Laboratory Establishing And Managing A Successful Facility

Python Forensics provides many never-before-published proven forensic modules, libraries, and solutions that can be used right out of the box. In addition, detailed instruction and documentation provided with the code samples will allow even novice Python programmers to add their own unique twists or use the models presented to build new solutions. Rapid development of new cybercrime investigation tools is an essential ingredient in virtually every case and environment. Whether you are performing post-mortem investigation, executing live triage, extracting evidence from mobile devices or cloud services, or you are collecting and processing evidence from a network, Python forensic implementations can fill in the gaps. Drawing upon years of practical experience and using numerous examples and illustrative code samples, author Chet Hosmer discusses how to: Develop new forensic solutions independent of large vendor software release schedules Participate in an open-source workbench that facilitates direct involvement in the design and implementation of new methods that augment or replace existing tools Advance your career by creating new solutions along with the construction of cutting-edge automation solutions to solve old problems Provides hands-on tools, code samples, and detailed instruction and documentation that can be put to use immediately Discusses how to create a Python forensics workbench Covers effective forensic searching and indexing using Python Shows how to use Python to examine mobile device operating systems: iOS, Android, and Windows 8 Presents complete coverage of how to use Python scripts for network investigation

Matching DNA samples from crime scenes and suspects is rapidly becoming a key source of evidence for use in our justice system. DNA Technology in Forensic Science offers recommendations for resolving crucial questions that are emerging as DNA typing becomes more widespread. The volume addreses key issues: Quality and reliability in DNA typing, including the introduction of new technologies, problems of standardization, and approaches to certification. DNA typing in the courtroom, including issues of population genetics, levels of understanding among judges and juries, and admissibility. Societal issues, such as privacy of DNA data, storage of samples and data, and the rights of defendants to quality testing technology. Combining this original volume with the new update--The Evaluation of Forensic DNA Evidence--provides the complete, up-to-date picture of this highly important and visible topic. This volume offers important guidance to anyone working with this emerging law enforcement tool: policymakers, specialists in criminal law, forensic scientists, geneticists, researchers, faculty, and students.

Institute, The Hague, The Netherlands and the University of Amsterdam, Amsterdam, The Netherlands.

Conduct repeatable, defensible investigations with EnCase Forensic v7 Maximize the powerful tools and features of the industry-leading digital investigation software. Computer Forensics and Digital Investigation with EnCase Forensic v7 reveals, step by step, how to detect illicit activity, capture and verify evidence, recover deleted and encrypted artifacts, prepare court-ready documents, and ensure legal and regulatory compliance. The book illustrates each concept using downloadable evidence from the National Institute of Standards and Technology CFReDS. Customizable sample procedures are included throughout this practical guide. Install EnCase Forensic v7 and customize the user interface Prepare your investigation and set up a new case Collect and verify evidence from suspect computers and networks Use the EnCase Evidence Processor and Case Analyzer Uncover clues using keyword searches and filter results through GREP Work with bookmarks, timelines, hash sets, and libraries Handle case closure, final disposition, and evidence destruction Carry out field investigations using EnCase Portable Learn to program in EnCase EnScript

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.

In November 1996, the National Institute of Justice (NIJ), the National Institute of Standards and Technology's (NIST) Law Enforcement Standards Office (OLES), and the American Society of Crime Laboratory Directors held a joint workshop to develop guidelines for planning, designing, constructing, and moving into crime laboratories. The workshop's by-product, Forensic Laboratories: Handbook for Facility Planning, Design, Construction, and Moving, was published in April 1998 and was still in use up to the publication of this update. Over the 15 years since its original publication, however, significant changes have developed within the design and construction industry, specifically in regards to its focus on energy and sustainability. Additionally, dramatic advances in forensic science and research, and the resultant increased demand for forensic services have necessitated this first update to the 1998 handbook.

In Fundamentals of Forensic Photography, Keith Mancini and John Sidoriak offer practical techniques for common situations encountered in forensic documentation. Topics include equipment selection, lighting techniques, crime scene and evidence documentation, macro and micro photography as well as aerial, high speed and computational photography. Techniques for photographic documentation in both the laboratory and the field are discussed.

A Practical Guide to Computer Forensics Investigations introduces the newest technologies along with detailed information on how the evidence contained on these devices should be analyzed. Packed with practical, hands-on

activities, students will learn unique subjects from chapters including Mac Forensics, Mobile Forensics, Cyberbullying, and Child Endangerment. This well-developed book will prepare students for the rapidly-growing field of computer forensics for a career with law enforcement, accounting firms, banks and credit card companies, private investigation companies, or government agencies.

Leverage the power of digital forensics for Windows systems About This Book Build your own lab environment to analyze forensic data and practice techniques. This book offers meticulous coverage with an example-driven approach and helps you build the key skills of performing forensics on Windows-based systems using digital artifacts. It uses specific open source and Linux-based tools so you can become proficient at analyzing forensic data and upgrade your existing knowledge. Who This Book Is For This book targets forensic analysts and professionals who would like to develop skills in digital forensic analysis for the Windows platform. You will acquire proficiency, knowledge, and core skills to undertake forensic analysis of digital data. Prior experience of information security and forensic analysis would be helpful. You will gain knowledge and an understanding of performing forensic analysis with tools especially built for the Windows platform. What You Will Learn Perform live analysis on victim or suspect Windows systems locally or remotely Understand the different natures and acquisition techniques of volatile and non-volatile data. Create a timeline of all the system actions to restore the history of an incident. Recover and analyze data from FAT and NTFS file systems. Make use of various tools to perform registry analysis. Track a system user's browser and e-mail activities to prove or refute some hypotheses. Get to know how to dump and analyze computer memory. In Detail Over the last few years, the wave of the cybercrime has risen rapidly. We have witnessed many major attacks on the governmental, military, financial, and media sectors. Tracking all these attacks and crimes requires a deep understanding of operating system operations, how to extract evident data from digital evidence, and the best usage of the digital forensic tools and techniques. Regardless of your level of experience in the field of information security in general, this book will fully introduce you to digital forensics. It will provide you with the knowledge needed to assemble different types of evidence effectively, and walk you through the various stages of the analysis process. We start by discussing the principles of the digital forensics process and move on to show you the approaches that are used to conduct analysis. We will then study various tools to perform live analysis, and go through different techniques to analyze volatile and non-volatile data. Style and approach This is a step-by-step guide that delivers knowledge about different Windows artifacts. Each topic is explained sequentially, including artifact analysis using different tools and techniques. These techniques make use of the evidence extracted from infected machines, and are accompanied by real-life examples.

Digital Forensics with Open Source Tools is the definitive book on investigating and analyzing computer systems and media using open source tools. The book is a technical procedural guide, and explains the use of open source tools on Mac, Linux and Windows systems as a platform for performing computer forensics. Both well-known and novel forensic methods are demonstrated using command-line and graphical open source computer forensic tools for examining a wide range of target systems and artifacts. Written by world-renowned forensic practitioners, this book uses the most current examination and analysis techniques in

the field. It consists of 9 chapters that cover a range of topics such as the open source examination platform; disk and file system analysis; Windows systems and artifacts; Linux systems and artifacts; Mac OS X systems and artifacts; Internet artifacts; and automating analysis and extending capabilities. The book lends itself to use by students and those entering the field who do not have means to purchase new tools for different investigations. This book will appeal to forensic practitioners from areas including incident response teams and computer forensic investigators; forensic technicians from legal, audit, and consulting firms; and law enforcement agencies. Written by world-renowned forensic practitioners Details core concepts and techniques of forensic file system analysis Covers analysis of artifacts from the Windows, Mac, and Linux operating systems

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.

"Computer crime represents one of the fastest growing types of crime in the country, and the need for computer forensics is growing. More and more law enforcement jurisdictions find they need to establish a computer forensic lab to conduct their own investigations as well." "This is 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 conduct computer-related crime investigation." --Book Jacket.

Have you ever wondered whether the forensic science you’ve seen on TV is anything like the real thing? There’s no better way to find out than to roll up your sleeves and do it yourself. This full-color book offers advice for setting up an inexpensive home lab, and includes more than 50 hands-on lab sessions that deal with forensic science experiments in biology, chemistry, and physics. You’ll learn the practical skills and fundamental knowledge needed to pursue forensics as a lifelong hobby—or even a career. The forensic science procedures in this book are not merely educational, they’re the real deal. Each chapter includes one or more lab sessions devoted to a particular topic. You’ll find a complete list of equipment and chemicals you need for each session. Analyze soil, hair, and fibers Match glass and plastic specimens Develop latent fingerprints and reveal blood traces Conduct drug and toxicology tests Analyze gunshot and explosives residues Detect forgeries and fakes Analyze impressions, such as tool marks and footprints Match pollen and diatom samples Extract, isolate, and visualize DNA samples Through their company, The Home Scientist, LLC (thehomescientist.com/forensics), the authors also offer inexpensive custom kits that provide specialized equipment and supplies you’ll need to complete the experiments. Add a microscope and some common household items and you’re good to

go.

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

Computer Forensics: Evidence Collection and Management examines cyber-crime, E-commerce, and Internet activities that could be used to exploit the Internet, computers, and electronic devices. The book focuses on the numerous vulnerabilities and threats that are inherent on the Internet and networking environments and presents techniques and suggestions for corporate security personnel, investigators, and forensic examiners to successfully identify, retrieve, and protect valuable forensic evidence for litigation and prosecution. The book is divided into two major parts for easy reference. The first part explores various crimes, laws, policies, forensic tools, and the information needed to understand the underlying concepts of computer forensic investigations. The second part presents information relating to crime scene investigations and management, disk and file structure, laboratory construction and functions, and legal testimony. Separate chapters focus on investigations involving computer systems, e-mail, and wireless devices. Presenting information patterned after technical, legal, and managerial classes held by computer forensic professionals from Cyber Crime Summits held at Kennesaw State University in 2005 and 2006, this book is an invaluable resource for those who want to be both efficient and effective when conducting an investigation.

Building a Digital Forensic LaboratoryEstablishing and Managing a Successful FacilityButterworth-Heinemann

New technologies, including DNA and digital databases that can compare known and questioned exemplars, have transformed forensic science and greatly impacted the investigative process. They have also made the work more complicated. Obtaining proper resources to provide quality and timely forensic services is frequently a challenge for forensic managers, who are often promoted from casework duties and must now learn a whole new set of leadership skills. The interdisciplinary and scientific nature of laboratories requires strong leadership ability to manage complex issues, often in adversarial settings. Forensic Laboratory Management: Applying Business Principles provides laboratory managers with business tools that apply the best science to the best evidence in a manner that increases the efficiency and effectiveness of their management decision making. The authors present a performance model with seven recommendations to implement, illustrating how forensic managers can serve as leaders and strategically improve the operation and management in scientific laboratories. Topics include: Key business metrics and cost–benefit analyses Ethical lapses: why they occur, possible motives, and how problems can be prevented Forensic training,

education, and institutes ISO/IEC 17025 accreditation implementation The book includes case studies simulating a working laboratory in which readers can apply business tools with actual data reinforcing discussion concepts. Each chapter also includes a brief review of current literature of the best management theories and practice. The downloadable resources supply two mock trial transcripts and associated case files along with PowerPoint® slides from Dr. George Carmody's workshop on Forensic DNA Statistics and Dr. Doug Lucas's presentation on ethics.

Advances in Digital Forensics VI describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: Themes and Issues, Forensic Techniques, Internet Crime Investigations, Live Forensics, Advanced Forensic Techniques, and Forensic Tools. This book is the sixth volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.9 on Digital Forensics, an international community of scientists, engineers and practitioners dedicated to advancing the state of the art of research and practice in digital forensics. The book contains a selection of twenty-one edited papers from the Sixth Annual IFIP WG 11.9 International Conference on Digital Forensics, held at the University of Hong Kong, Hong Kong, China, in January 2010.

Forensic Microscopy: A Laboratory Manual will provide the student with a practical overview and understanding of the various microscopes and microscopic techniques employed within the field of forensic science. Each laboratory experiment has been carefully designed to cover the variety of evidence disciplines within the forensic science field with carefully set out objectives, explanations of each topic and worksheets to help students compile and analyse their results. The emphasis is placed on the practical aspects of the analysis to enrich student understanding through hands on experience. The experiments move from basic through to specialised and have been developed to cover a variety of evidence disciplines within forensic science field. The emphasis is placed on techniques currently used by trace examiners. This unique, forensic focused, microscopy laboratory manual provides objectives for each topic covered with experiments designed to reinforce what has been learnt along with end of chapter questions, report requirements and numerous references for further reading. Impression evidence such as fingerprints, shoe tread patterns, tool marks and firearms will be analysed using simple stereomicroscopic techniques. Body fluids drug and trace evidence (e.g. paint glass hair fibre) will be covered by a variety of microscopes and specialized microscopic techniques.

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.

The Criminalistics Laboratory Manual: The Basics of Forensic Investigation provides students with little to no prior knowledge of forensic science with a practical crime scene processing experience. The manual starts with an original crime scene narrative setting up the crime students are to solve. This narrative is picked up in each of the forensic science lab activities, tying each forensic discipline together to show the integrated workings of a real crime lab. After the completion of all of the exercises, the student will be able to solve the homicide based on forensic evidence.

Maximize the power of Windows Forensics to perform highly effective forensic investigations About This Book Prepare and perform investigations using powerful tools for Windows, Collect and validate evidence from suspects and computers and uncover clues that are otherwise difficult Packed with powerful recipes to perform highly effective field investigations Who This Book Is For If you are a forensic analyst or incident response professional who wants to perform computer forensics investigations for the Windows platform and expand your took kit, then this book is for you. What You Will Learn Understand the challenges of acquiring evidence from Windows systems and overcome them Acquire and analyze Windows memory and drive data with modern forensic tools. Extract and analyze data from Windows file systems, shadow copies and the registry Understand the main Windows system artifacts and learn how to parse data from them using forensic tools See a forensic analysis of common web browsers, mailboxes, and instant messenger services Discover how Windows 10 differs from previous versions and how to overcome the specific challenges it presents Create a graphical timeline and visualize data, which can then be incorporated into the final report Troubleshoot issues that arise while performing Windows forensics In Detail Windows Forensics Cookbook provides recipes to overcome forensic challenges and helps you carry out effective investigations easily on a Windows platform. You will begin with a refresher on digital forensics and evidence acquisition, which will help you to understand the challenges faced while acquiring evidence from Windows systems. Next you will learn to acquire Windows memory data and analyze Windows systems with modern forensic tools. We also cover some more in-depth elements of forensic analysis, such as how to analyze data from Windows system artifacts, parse data from the most commonly-used web browsers and email services, and effectively report on digital forensic investigations. You will see how Windows 10 is different from previous versions and how you can overcome the specific challenges it brings. Finally, you will learn to troubleshoot issues that arise while performing digital forensic investigations. By the end of the book, you will be able to carry out forensics investigations efficiently. Style and approach This practical guide filled with hands-on, actionable recipes to detect, capture, and recover digital artifacts and deliver impeccable forensic outcomes.

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

A laboratory companion to Forensic Science: An Introduction to Scientific and Investigative Techniques and other undergraduate texts, Forensic Science Laboratory Manual and Workbook, Third Edition provides a plethora of basic, hands-on experiments that can be completed with inexpensive and accessible instrumentation, making this an ideal workbook for non-science majors and an excellent choice for use at both the high school and college level. This revised edition of a bestselling lab manual provides numerous experiments in odontology, anthropology, archeology, chemistry, and trace evidence. The experiments cover tests involving body fluid, soil, glass, fiber, ink, and hair. The book also presents experiments in impression evidence, such as fingerprints, bite marks, footwear, and firearms, and it features digital and traditional photography and basic microscopy. All of the experiments incorporate practical elements to facilitate the learning process. Students must apply the scientific method of reasoning, deduction, and problem-solving in order to complete the experiments successfully and attain a solid understanding of fundamental forensic science. Each of the 39 chapters features a separate experiment and includes teaching goals, offers the requisite background knowledge needed to conduct the experiments, and lists the required equipment and supplies. The book is designed for a cooperative learning setting in which three to five students comprise a group. Using the hands-on learning techniques provided in this manual, students will master the practical application of their theoretical knowledge of forensics.

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 investigations Gather intelligence using OSINT sources Acquire and analyze digital evidence Conduct in-depth forensic analysis of Windows operating systems covering Windows 10–specific feature forensics Utilize 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

A practical guide to analyzing iOS devices with the latest forensics tools and techniques About This Book This book is a comprehensive update to Learning iOS Forensics This practical book will not only cover the critical aspects of digital forensics, but also mobile forensics Whether you're a forensic analyst or an iOS developer, there's something in this book for you The authors, Mattia Epifani and Pasquale Stirparo, are respected members of the community, they go into extensive detail to cover critical topics Who This Book Is For The book is for digital forensics analysts, incident response analysts, IT security experts, and malware analysts. It would be beneficial if you have basic knowledge of forensics What You Will Learn Identify an iOS device between various models (iPhone, iPad, iPod Touch) and verify the iOS version installed Crack or bypass the protection passcode chosen by the user Acquire, at the most detailed level, the content of an iOS Device (physical, advanced logical, or logical) Recover information from a local backup and eventually crack the backup password Download back-up information stored on iCloud Analyze system, user, and third-party information from a device, a backup, or iCloud Examine malicious apps to identify data and credential thefts In Detail Mobile forensics is used within many different domains, but is chiefly employed in the field of information security. By understanding common attack vectors and vulnerability points, security professionals can develop measures and examine system architectures to harden security on iOS devices. This book is a complete manual on the identification, acquisition, and analysis of iOS devices, updated to iOS 8 and 9. You will learn by doing, with various case studies. The book covers different devices, operating system, and apps. There is a completely renewed section on third-party apps with a detailed analysis of the most interesting artifacts. By investigating compromised devices, you can work out the identity of the attacker, as well as what was taken, when, why, where, and how the attack was conducted. Also you will learn in detail about data security and application security that can assist forensics investigators and application developers. It will take hands-on approach to solve complex problems of digital forensics as well as mobile forensics. Style and approach This book provides a step-by-step approach that will guide you through one topic at a time. This intuitive guide focuses on one key topic at a time. Building upon the acquired knowledge in each chapter, we will connect the fundamental theory and

practical tips by illustrative visualizations and hands-on code examples.

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 deals with the acquisition, preservation, examination, analysis and presentation of electronic evidence. Networked computing, wireless communications and portable electronic devices have expanded the role of digital forensics beyond traditional computer crime investigations. Practically every crime now involves some aspect of digital evidence; digital forensics provides the techniques and tools to articulate this evidence. Digital forensics also has myriad intelligence applications. Furthermore, it has a vital role in information assurance - investigations of security breaches yield valuable information that can be used to design more secure systems. Advances in Digital Forensics V describes original research results and innovative applications in the discipline of digital forensics. In addition, it highlights some of the major technical and legal issues related to digital evidence and electronic crime investigations. The areas of coverage include: themes and issues, forensic techniques, integrity and privacy, network forensics, forensic computing, investigative techniques, legal issues and evidence management. This book is the fifth volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.9 on Digital Forensics, an international community of scientists, engineers and practitioners dedicated to advancing the state of the art of research and practice in digital forensics. The book contains a selection of twenty-three edited papers from the Fifth Annual IFIP WG 11.9 International Conference on Digital Forensics, held at the National Center for Forensic Science, Orlando, Florida, USA in the spring of 2009. Advances in Digital Forensics V is an important resource for researchers, faculty

members and graduate students, as well as for practitioners and individuals engaged in research and development efforts for the law enforcement and intelligence communities.

The Definitive Guide to File System Analysis: Key Concepts and Hands-on Techniques Most digital evidence is stored within the computer's file system, but understanding how file systems work is one of the most technically challenging concepts for a digital investigator because there exists little documentation. Now, security expert Brian Carrier has written the definitive reference for everyone who wants to understand and be able to testify about how file system analysis is performed. Carrier begins with an overview of investigation and computer foundations and then gives an authoritative, comprehensive, and illustrated overview of contemporary volume and file systems: Crucial information for discovering hidden evidence, recovering deleted data, and validating your tools. Along the way, he describes data structures, analyzes example disk images, provides advanced investigation scenarios, and uses today's most valuable open source file system analysis tools—including tools he personally developed. Coverage includes Preserving the digital crime scene and duplicating hard disks for "dead analysis" Identifying hidden data on a disk's Host Protected Area (HPA) Reading source data: Direct versus BIOS access, dead versus live acquisition, error handling, and more Analyzing DOS, Apple, and GPT partitions; BSD disk labels; and Sun Volume Table of Contents using key concepts, data structures, and specific techniques Analyzing the contents of multiple disk volumes, such as RAID and disk spanning Analyzing FAT, NTFS, Ext2, Ext3, UFS1, and UFS2 file systems using key concepts, data structures, and specific techniques Finding evidence: File metadata, recovery of deleted files, data hiding locations, and more Using The Sleuth Kit (TSK), Autopsy Forensic Browser, and related open source tools When it comes to file system analysis, no other book offers this much detail or expertise. Whether you're a digital forensics specialist, incident response team member, law enforcement officer, corporate security specialist, or auditor, this book will become an indispensable resource for forensic investigations, no matter what analysis tools you use.

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.

Given our increasing dependency on computing technology in daily business processes, and the growing opportunity to

use engineering technologies to engage in illegal, unauthorized, and unethical acts aimed at corporate infrastructure, every organization is at risk. Cyber Forensics: A Field Manual for Collecting, Examining, and Preserving Evidence o Advancing technologies, especially computer technologies, have necessitated the creation of a comprehensive investigation and collection methodology for digital and online evidence. The goal of cyber forensics is to perform a structured investigation while maintaining a documented chain of evidence to find out exactly what happened on a computing device or on a network and who was responsible for it. Critical Concepts, Standards, and Techniques in Cyber Forensics is a critical research book that focuses on providing in-depth knowledge about online forensic practices and methods. Highlighting a range of topics such as data mining, digital evidence, and fraud investigation, this book is ideal for security analysts, IT specialists, software engineers, researchers, security professionals, criminal science professionals, policymakers, academicians, and students.

Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

The open source nature of the platform has not only established a new direction for the industry, but enables a developer or forensic analyst to understand the device at the most fundamental level. Android Forensics covers an open source mobile device platform based on the Linux 2.6 kernel and managed by the Open Handset Alliance. The Android platform is a major source of digital forensic investigation and analysis. This book provides a thorough review of the Android platform including supported hardware devices, the structure of the Android development project and implementation of core services (wireless communication, data storage and other low-level functions). Finally, it will focus on teaching readers how to apply actual forensic techniques to recover data. Ability to forensically acquire Android devices using the techniques outlined in the book Detailed information about Android applications needed for forensics investigations Important information about SQLite, a file based structured data storage relevant for both Android and many other platforms.

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

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.

Contemporary Digital Forensic Investigations of Cloud and Mobile Applications comprehensively discusses the implications of cloud (storage) services and mobile applications on digital forensic investigations. The book provides both digital forensic practitioners and researchers with an up-to-date and advanced knowledge of collecting and preserving electronic evidence from different types of cloud services, such as digital remnants of cloud applications accessed through mobile devices. This is the first book that covers the investigation of a wide range of cloud services. Dr. Kim-Kwang Raymond Choo and Dr. Ali Dehghantanha are leading researchers in cloud and mobile security and forensics, having organized research, led research, and been published widely in the field. Users will gain a deep overview of seminal research in the field while also identifying prospective future research topics and open challenges. Presents the most current, leading edge research on cloud and mobile application forensics, featuring a panel of top experts in the field Introduces the first book to provide an in-depth overview of the issues surrounding digital forensic investigations in cloud and associated mobile apps Covers key technical topics and provides readers with a complete understanding of the most current research findings Includes discussions on future research directions and challenges

"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.