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Research Methods for Cyber Security *Syngress* **Research Methods for Cyber Security teaches scientific methods for generating impactful knowledge, validating theories, and adding critical rigor to the cyber security field. This book shows how to develop a research plan, beginning by starting research with a question, then offers an introduction to the broad range of useful research methods for cyber security research: observational, mathematical, experimental, and applied. Each research method chapter concludes with recommended outlines and suggested templates for submission to peer reviewed venues. This book concludes with information on cross-cutting issues within cyber security research. Cyber security research contends with numerous unique issues, such as an extremely fast environment evolution, adversarial behavior, and the merging of natural and social science phenomena. Research Methods for Cyber Security addresses these concerns and much more by teaching readers not only the process of science in the context of cyber security research, but providing assistance in execution of research as well. Presents research methods from a cyber security science perspective Catalyzes the rigorous research necessary to propel the cyber security field forward Provides a guided method selection for the type of research being conducted, presented in the context of real-world usage Research Methods for Cyber Security** *Syngress* **Research Methods for Cyber Security teaches scientific methods for generating impactful knowledge, validating theories, and adding critical rigor to the cyber security field. This book shows how to develop a research plan, beginning by starting research with a question, then offers an introduction to the broad range of useful research methods for cyber security research: observational, mathematical, experimental, and applied. Each research method chapter concludes with recommended outlines and suggested templates for submission to peer reviewed venues. This book concludes with information on cross-cutting issues within cyber security research. Cyber security research contends with numerous unique issues, such as an extremely fast environment evolution, adversarial behavior, and the merging of natural and social science phenomena. Research Methods for Cyber Security addresses these concerns and much more by teaching readers not only the process of science in the context of cyber security research, but providing assistance in execution of research as well. Presents research methods from a cyber security science perspective Catalyzes the rigorous research necessary to propel the cyber security field forward Provides a guided method selection for the type of research being conducted, presented in the context of real-world usage Cybersecurity in Humanities and Social Sciences A Research Methods Approach** *John Wiley & Sons* **The humanities and social sciences are interested in the cybersecurity object since its emergence in the security debates, at the beginning of the 2000s. This scientific production is thus still relatively young, but diversified, mobilizing at the same time political science, international relations, sociology , law, information science, security studies, surveillance studies, strategic studies, polemology. There is, however, no actual cybersecurity studies. After two decades of scientific production on this subject, we thought it essential to take stock of the research methods that could be mobilized, imagined and invented by the researchers. The research methodology on the subject "cybersecurity" has, paradoxically, been the subject of relatively few publications to date. This dimension is essential. It is the initial phase by which any researcher, seasoned or young doctoral student, must pass, to define his subject of study, delimit the contours, ask the research questions, and choose the methods of treatment. It is this methodological dimension that our book proposes to treat. The questions the authors were asked to answer were: how can cybersecurity be defined? What disciplines in the humanities and social sciences are studying, and how, cybersecurity? What is the place of pluralism or interdisciplinarity? How are the research topics chosen, the questions defined? How, concretely, to study cybersecurity: tools, methods, theories, organization of research, research fields, data ...? How are discipline-specific theories useful for understanding and studying cybersecurity? Has cybersecurity had an impact on scientific theories? Secrecy and Methods in Security Research A Guide to Qualitative Fieldwork** *Routledge* **This book analyses the challenges of secrecy in security research, and develops a set of methods to navigate, encircle and work with secrecy. How can researchers navigate secrecy in their fieldwork, when they encounter confidential material, closed-off quarters or bureaucratic rebuffs? This is a particular challenge for researchers in the security field, which is by nature secretive and difficult to access. This book creatively assesses and analyses the ways in which secrecies operate in security research. The collection sets out new understandings of secrecy, and shows how secrecy itself can be made productive to research analysis. It offers students, PhD researchers and senior scholars a rich toolkit of methods and best-practice examples for ethically appropriate ways of navigating secrecy. It pays attention to the balance between confidentiality, and academic freedom and integrity. The chapters draw on the rich qualitative fieldwork experiences of the contributors, who did research at a diversity of sites, for example at a former atomic weapons research facility, inside deportation units, in conflict zones, in everyday security landscapes, in virtual spaces and at borders, bureaucracies and banks. The book will be of interest to students of research methods, critical security studies and International Relations in general. The introduction of this book is freely available as a downloadable Open Access PDF under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 license https://www.routledge.com/Secrecy-and-Methods-in-Security-Research-A-Guide-to-Qualitative-Fieldwork/Goede-Bosma-Pallister-Wilkins/p/book/9780367027247 Researching Cybercrimes Methodologies, Ethics, and Critical Approaches** *Springer Nature* **This edited book promotes and facilitates cybercrime research by providing a cutting-edge collection of perspectives on the critical usage of online data across platforms, as well as the implementation of both traditional and innovative analysis methods. The accessibility, variety and wealth of data available online presents substantial opportunities for researchers from different disciplines to study cybercrimes and, more generally, human behavior in cyberspace. The unique and dynamic characteristics of cyberspace often demand cross-disciplinary and cross-national research endeavors, but disciplinary, cultural and legal differences can hinder the ability of researchers to collaborate. This work also provides a review of the ethics associated with the use of online data sources across the globe. The authors are drawn from multiple disciplines and nations, providing unique insights into the value and challenges evident in online data use for cybercrime scholarship. It is a key text for researchers at the upper undergraduate level and above. Psychological and Behavioral Examinations in Cyber Security** *IGI Global* **Cyber security has become a topic of concern over the past decade. As many individual and organizational activities continue to evolve digitally, it is important to examine the psychological and behavioral aspects of cyber security. Psychological and Behavioral Examinations in Cyber Security is a critical scholarly resource that examines the relationship between human behavior and interaction and cyber security. Featuring coverage on a broad range of topics, such as behavioral analysis, cyberpsychology, and online privacy, this book is geared towards IT specialists, administrators, business managers, researchers, and students interested in online decision making in cybersecurity. Handbook of Research on Multimedia Cyber Security** *IGI Global* **Because it makes the distribution and transmission of digital information much easier and more cost effective, multimedia has emerged as a top resource in the modern era. In spite of the opportunities that multimedia creates for businesses and companies, information sharing remains vulnerable to cyber attacks and hacking due to the open channels in which this data is being transmitted. Protecting the authenticity and confidentiality of information is a top priority for all professional fields that currently use multimedia practices for distributing digital data. The Handbook of Research on Multimedia Cyber Security provides emerging research exploring the theoretical and practical aspects of current security practices and techniques within multimedia information and assessing modern challenges. Featuring coverage on a broad range of topics such as cryptographic protocols, feature extraction, and chaotic systems, this book is ideally designed for scientists, researchers, developers, security analysts, network administrators, scholars, IT professionals, educators, and students seeking current research on developing strategies in multimedia security. Cyber Security and Threats: Concepts, Methodologies, Tools, and Applications Concepts, Methodologies, Tools, and Applications** *IGI Global* **Cyber security has become a topic of concern over the past decade as private industry, public administration, commerce, and communication have gained a greater online presence. As many individual and organizational activities continue to evolve in the digital sphere, new vulnerabilities arise. Cyber Security and Threats: Concepts, Methodologies, Tools, and Applications contains a compendium of the latest academic material on new methodologies and applications in the areas of digital security and threats. Including innovative studies on cloud security, online threat protection, and cryptography, this multi-volume book is an ideal source for IT specialists, administrators, researchers, and students interested in uncovering new ways to thwart cyber breaches and protect sensitive digital information. Using Science In Cybersecurity** *World Scientific* **Deploying the scientific method in cybersecurity today is a common-sense approach that is a tough topic in the field of cybersecurity. While most publications in the field emphasize that scientific principles are necessary, there are very few, if any, guides that uncover these principles.This book will give readers practical tools for cybersecurity. It examines the path of developing cybersecurity foundations while taking into account uncertain data. Extensive examples demonstrate how to deploy cybersecurity to sort our day-to-day problems. Using Science in Cybersecurity is intended for advanced undergraduate and graduate students, researchers and practitioners in the fields of cybersecurity, information security, and science of cybersecurity. Distributed Control Methods and Cyber Security Issues in Microgrids** *Academic Press* **Distributed Control and Cyber Security Issues in Microgrids presents a thorough treatment of distributed control methods and cyber security issues for power system researchers and engineers. With the help of mathematical tools, this reference gives a deep understanding of microgrids and new research directions, addressing emerging concepts, methodologies and applications of monitoring, control and protection in smart microgrids with large-scale renewables. With the integration of more distributed or aggregated renewables and the wide utilization of power electronic devices, the smart microgrid is facing new stability and security challenges. Deep Learning Applications for Cyber Security** *Springer* **Cybercrime remains a growing challenge in terms of security and privacy practices. Working together, deep learning and cyber security experts have recently made significant advances in the fields of intrusion detection, malicious code analysis and forensic identification. This book addresses questions of how deep learning methods can be used to advance cyber security objectives, including detection, modeling, monitoring and analysis of as well as defense against various threats to sensitive data and security systems. Filling an important gap between deep learning and cyber security communities, it discusses topics covering a wide range of modern and practical deep learning techniques, frameworks and development tools to enable readers to engage with the cutting-edge research across various aspects of cyber security. The book focuses on mature and proven techniques, and provides ample examples to help readers grasp the key points. Handbook of Research on Machine and Deep Learning Applications for Cyber Security** *IGI Global* **As the advancement of technology continues, cyber security continues to play a significant role in today□s world. With society becoming more dependent on the internet, new opportunities for virtual attacks can lead to the exposure of critical information. Machine and deep learning techniques to prevent this exposure of information are being applied to address mounting concerns in computer security. The Handbook of Research on Machine and Deep Learning Applications for Cyber Security is a pivotal reference source that provides vital research on the application of machine learning techniques for network security research. While highlighting topics such as web security, malware detection, and secure information sharing, this publication explores recent research findings in the area of electronic security as well as challenges and countermeasures in cyber security research. It is ideally designed for software engineers, IT specialists, cybersecurity analysts, industrial experts, academicians, researchers, and post-graduate students. Handbook of Research on Advanced Research Methodologies for a Digital Society** *IGI Global* **Doing research is an ever-changing challenge for social scientists. This challenge is harder than ever today as current societies are changing quickly and in many, sometimes conflicting, directions. Social phenomena, personal interactions, and formal and informal relationships are becoming more borderless and disconnected from the anchors of the offline “reality.”**

These dynamics are heavily marking our time and are suggesting evolutionary challenges in the ways we know, interpret, and analyze the world. Internet and computer-mediated communication (CMC) is being incorporated into every aspect of daily life, and social life has been deeply penetrated by the internet. This is due to recent technological developments that increase the scope and range of online social spaces and the forms and time of participation such as Web 2.0, which widened the opportunities for user-generated content, the emergence of an "internet of things," and of ubiquitous mobile devices that make it possible to always be connected. This implies an adjustment to epistemological and methodological stances for conducting social research and an adaption of traditional social research methods to the specificities of online interactions in the digital society. The Handbook of Research on Advanced Research Methodologies for a Digital Society covers the different strands of methods most affected by the change in a digital society and develops a broader theoretical reflection on the future of social research in its challenge to always be fitting, suitable, adaptable, and pertinent to the society to be studied. The chapters are geared towards unlocking the future frontiers and potential for social research in the digital society. They include theoretical, epistemological, and ontological reflections about the digital research methods as well as innovative methods and tools to collect, analyze, and interpret data. This book is ideal for social scientists, practitioners, librarians, researchers, academicians, and students interested in social research methodology and its developments in the digital scenario. Handbook of Research on Cyber Crime and Information Privacy *IGI Global* **In recent years, industries have transitioned into the digital realm, as companies and organizations are adopting certain forms of technology to assist in information storage and efficient methods of production. This dependence has significantly increased the risk of cyber crime and breaches in data security. Fortunately, research in the area of cyber security and information protection is flourishing; however, it is the responsibility of industry professionals to keep pace with the current trends within this field. The Handbook of Research on Cyber Crime and Information Privacy is a collection of innovative research on the modern methods of crime and misconduct within cyber space. It presents novel solutions to securing and preserving digital information through practical examples and case studies. While highlighting topics including virus detection, surveillance technology, and social networks, this book is ideally designed for cybersecurity professionals, researchers, developers, practitioners, programmers, computer scientists, academicians, security analysts, educators, and students seeking up-to-date research on advanced approaches and developments in cyber security and information protection. Foundational Cybersecurity Research Improving Science, Engineering, and Institutions** *National Academies Press* **Attaining meaningful cybersecurity presents a broad societal challenge. Its complexity and the range of systems and sectors in which it is needed mean that successful approaches are necessarily multifaceted. Moreover, cybersecurity is a dynamic process involving human attackers who continue to adapt. Despite considerable investments of resources and intellect, cybersecurity continues to poses serious challenges to national security, business performance, and public well-being. Modern developments in computation, storage and connectivity to the Internet have brought into even sharper focus the need for a better understanding of the overall security of the systems we depend on. Foundational Cybersecurity Research focuses on foundational research strategies for organizing people, technologies, and governance. These strategies seek to ensure the sustained support needed to create an agile, effective research community, with collaborative links across disciplines and between research and practice. This report is aimed primarily at the cybersecurity research community, but takes a broad view that efforts to improve foundational cybersecurity research will need to include many disciplines working together to achieve common goals. Handbook of Research on Modern Cryptographic Solutions for Computer and Cyber Security** *IGI Global* **Internet usage has become a facet of everyday life, especially as more technological advances have made it easier to connect to the web from virtually anywhere in the developed world. However, with this increased usage comes heightened threats to security within digital environments. The Handbook of Research on Modern Cryptographic Solutions for Computer and Cyber Security identifies emergent research and techniques being utilized in the field of cryptology and cyber threat prevention. Featuring theoretical perspectives, best practices, and future research directions, this handbook of research is a vital resource for professionals, researchers, faculty members, scientists, graduate students, scholars, and software developers interested in threat identification and prevention. Operations Research, Engineering, and Cyber Security Trends in Applied Mathematics and Technology** *Springer* **Mathematical methods and theories with interdisciplinary applications are presented in this book. The eighteen contributions presented in this Work have been written by eminent scientists; a few papers are based on talks which took place at the International Conference at the Hellenic Artillery School in May 2015. Each paper evaluates possible solutions to long-standing problems such as the solvability of the direct electromagnetic scattering problem, geometric approaches to cyber security, ellipsoid targeting with overlap, non-equilibrium solutions of dynamic networks, measuring ballistic dispersion, elliptic regularity theory for the numerical solution of variational problems, approximation theory for polynomials on the real line and the unit circle, complementarity and variational inequalities in electronics, new two-slope parameterized achievement scalarizing functions for nonlinear multiobjective optimization, and strong and weak convexity of closed sets in a Hilbert space. /divGraduate students, scientists, engineers and researchers in pure and applied mathematical sciences, operations research, engineering, and cyber security will find the interdisciplinary scientific perspectives useful to their overall understanding and further research. Mathematics in Cyber Research** *Chapman & Hall/CRC* **"In the last decade, both scholars and practitioners have sought novel ways to address the problem of cybersecurity. Innovative outcomes have included applications such as blockchain as well as creative methods for cyber forensics, software development, and intrusion prevention. Accompanying these technological advancements, discussion on cyber matters at national and international levels has focused primarily on the topics of law, policy, and strategy. The objective of these efforts is typically to promote security by establishing agreements among stakeholders on regulatory activities. Varying levels of investment in cyberspace, however, comes with varying levels of risk; in some ways, this can translate directly to the degree of emphasis for pushing substantial change. At the very foundation or root of cyberspace systems and processes are tenets and rules governed by principles in mathematics. Topics such as encrypting or decrypting file transmissions, modeling networks, performing data analysis, quantifying uncertainty, measuring risk, and weighing decisions or adversarial courses of action represent a very small subset of activities highlighted by mathematics. To facilitate education and a greater awareness of the role of mathematics in cyber systems and processes, a description of research in this area is needed. Mathematics in Cyber Research aims to familiarize educators and young researchers with the breadth of mathematics in cyber-related research. Each chapter introduces a mathematical sub-field, describes relevant work in this field associated with the cyber domain, provides methods and tools, as well as details cyber research examples or case studies. Features Machine Learning Approaches in Cyber Security Analytics** *Springer Nature* **This book introduces various machine learning methods for cyber security analytics. With an overwhelming amount of data being generated and transferred over various networks, monitoring everything that is exchanged and identifying potential cyber threats and attacks poses a serious challenge for cyber experts. Further, as cyber attacks become more frequent and sophisticated, there is a requirement for machines to predict, detect, and identify them more rapidly. Machine learning offers various tools and techniques to automate and quickly predict, detect, and identify cyber attacks. Data Mining and Machine Learning in Cybersecurity** *CRC Press* **With the rapid advancement of information discovery techniques, machine learning and data mining continue to play a significant role in cybersecurity. Although several conferences, workshops, and journals focus on the fragmented research topics in this area, there has been no single interdisciplinary resource on past and current works and possible Essential Cybersecurity Science Build, Test, and Evaluate Secure Systems** "*O'Reilly Media, Inc.*" **If you're involved in cybersecurity as a software developer, forensic investigator, or network administrator, this practical guide shows you how to apply the scientific method when assessing techniques for protecting your information systems. You'll learn how to conduct scientific experiments on everyday tools and procedures, whether you're evaluating corporate security systems, testing your own security product, or looking for bugs in a mobile game. Once author Josiah Dykstra gets you up to speed on the scientific method, he helps you focus on standalone, domain-specific topics, such as cryptography, malware analysis, and system security engineering. The latter chapters include practical case studies that demonstrate how to use available tools to conduct domain-specific scientific experiments. Learn the steps necessary to conduct scientific experiments in cybersecurity Explore fuzzing to test how your software handles various inputs Measure the performance of the Snort intrusion detection system Locate malicious "needles in a haystack" in your network and IT environment Evaluate cryptography design and application in IoT products Conduct an experiment to identify relationships between similar malware binaries Understand system-level security requirements for enterprise networks and web services Artificial Intelligence for Cyber Security: Methods, Issues and Possible Horizons or Opportunities** *Springer Nature* **This book provides stepwise discussion, exhaustive literature review, detailed analysis and discussion, rigorous experimentation results (using several analytics tools), and an application-oriented approach that can be demonstrated with respect to data analytics using artificial intelligence to make systems stronger (i.e., impossible to breach). We can see many serious cyber breaches on Government databases or public profiles at online social networking in the recent decade. Today artificial intelligence or machine learning is redefining every aspect of cyber security. From improving organizations' ability to anticipate and thwart breaches, protecting the proliferating number of threat surfaces with Zero Trust Security frameworks to making passwords obsolete, AI and machine learning are essential to securing the perimeters of any business. The book is useful for researchers, academics, industry players, data engineers, data scientists, governmental organizations, and non-governmental organizations. Digital Transformation, Cyber Security and Resilience of Modern Societies** *Springer Nature* **This book presents the implementation of novel concepts and solutions, which allows to enhance the cyber security of administrative and industrial systems and the resilience of economies and societies to cyber and hybrid threats. This goal can be achieved by rigorous information sharing, enhanced situational awareness, advanced protection of industrial processes and critical infrastructures, and proper account of the human factor, as well as by adequate methods and tools for analysis of big data, including data from social networks, to find best ways to counter hybrid influence. The implementation of these methods and tools is examined here as part of the process of digital transformation through incorporation of advanced information technologies, knowledge management, training and testing environments, and organizational networking. The book is of benefit to practitioners and researchers in the field of cyber security and protection against hybrid threats, as well as to policymakers and senior managers with responsibilities in information and knowledge management, security policies, and human resource management and training. Cyber-Security and Information Warfare A variety of modern research methods in a number of innovating cyber-security techniques and information management technologies are provided in this book along with new related mathematical developments and support applications from engineering. This allows for the exploration of new approaches, useful practices and related problems for further investigation.Distinguished researchers and scientists coming from different scientific origins present their research and views concerning cyber-security, information warfare and communications systems.Graduate students, scientists and engineers interested in a broad spectrum of current theories, methods, and applications in interdisciplinary fields will find this book invaluable.Topics covered include: Electronic crime and ethics in cyberspace, new technologies in security systems/systems interfaces, economic information warfare, digital security in the economy, human factor evaluation of military security systems, cyber warfare, military communications, operational analysis and information warfare, and engineering applications to security systems/detection theory. How to Measure Anything in Cybersecurity Risk** *John Wiley & Sons* **A ground shaking exposé on the failure of popular cyber risk management methods How to Measure Anything in Cybersecurity Risk exposes the shortcomings of current "risk management" practices, and offers a series of improvement techniques that help you fill the holes and ramp up security. In his bestselling book How to Measure Anything, author Douglas W. Hubbard opened the business world's eyes to the critical need for better measurement. This book expands upon that premise and draws from The Failure of Risk Management to sound the alarm in the cybersecurity realm. Some of the field's premier risk management approaches actually create more risk than they mitigate, and questionable methods have been duplicated across industries and embedded in the products accepted as gospel. This book sheds light on these blatant risks, and provides alternate techniques that can help improve your current situation. You'll also learn which approaches are too risky to save, and are actually more damaging than a total lack of any security. Dangerous risk management methods abound; there is no industry more critically in need of solutions than cybersecurity. This book provides solutions where they exist, and advises when to change tracks entirely. Discover the shortcomings of cybersecurity's "best practices" Learn which risk management approaches actually create risk Improve your current practices with practical alterations Learn which methods are beyond saving, and worse than doing nothing Insightful and enlightening, this book will inspire a closer examination of your company's own risk management practices in the context of cybersecurity. The end goal is airtight data protection, so finding cracks in the vault is a positive thing—as long as you get there before the bad guys do. How to**

Measure Anything in Cybersecurity Risk is your guide to more robust protection through better quantitative processes, approaches, and techniques. Cyber Security in Parallel and Distributed Computing Concepts, Techniques, Applications and Case Studies *John Wiley & Sons* **The main objective of this book is to explore the concept of cybersecurity in parallel and distributed computing along with recent research developments in the field. It also includes various real-time/offline applications and case studies in the fields of engineering and computer science and the modern tools and technologies used. Information on cybersecurity technologies is organized in the fifteen chapters of this book. This important book cover subjects such as: Research and solutions for the problem of hidden image detection Security aspects of data mining and possible solution techniques A comparative analysis of various methods used in e-commerce security and how to perform secure payment transactions in an efficient manner Blockchain technology and how it is crucial to the security industry Security for the Internet of Things Security issues and challenges in distributed computing security such as heterogeneous computing, cloud computing, fog computing, etc. Demonstrates the administration task issue in unified cloud situations as a multi-target enhancement issue in light of security Explores the concepts of cybercrime and cybersecurity and presents the statistical impact it is having on organizations Highlights some strategies for maintaining the privacy, integrity, confidentiality and availability of cyber information and its real-world impacts such as mobile security software for secure email and online banking, cyber health check programs for business, cyber incident response management, cybersecurity risk management Security policies and mechanisms, various categories of attacks (e.g., denial-of-service), global security architecture, along with distribution of security mechanisms Security issues in the healthcare sector with existing solutions and emerging threats. Cyber Security Innovation for the Digital Economy** *River Publishers* **Cyber Security Innovation for the Digital Economy considers possible solutions to the relatively new scientific-technical problem of developing innovative solutions in the field of cyber security for the Digital Economy. The solutions proposed are based on the results of exploratory studies conducted by the author in the areas of Big Data acquisition, cognitive information technologies (cogno-technologies), new methods of analytical verification of digital ecosystems on the basis of similarity invariants and dimensions, and "computational cognitivism," involving a number of existing models and methods. In practice, this successfully allowed the creation of new entities - the required safe and trusted digital ecosystems - on the basis of the development of digital and cyber security technologies, and the resulting changes in their behavioral preferences. Here, the ecosystem is understood as a certain system of organizations, created around a certain Technological Platform that use its services to make the best offers to customers and access to them to meet the ultimate needs of clients - legal entities and individuals. The basis of such ecosystems is a certain technological platform, created on advanced innovative developments, including the open interfaces and code, machine learning, cloud technologies, Big Data collection and processing, artificial intelligence technologies, etc. The mentioned Technological Platform allows creating the best offer for the client both from own goods and services and from the offers of external service providers in real time. This book contains four chapters devoted to the following subjects: Relevance of the given scientific-technical problems in the cybersecurity of Digital EconomyDetermination of the limiting capabilitiesPossible scientific and technical solutionsOrganization of perspective research studies in the area of Digital Economy cyber security in Russia. Establishing Cyber Security Programs Through the Community Cyber Security Maturity Model (CCSMM)** *IGI Global* **As society continues to heavily rely on software and databases, the risks for cyberattacks have increased rapidly. As the dependence on computers has become gradually widespread throughout communities and governments, there is a need for cybersecurity programs that can assist in protecting sizeable networks and significant amounts of data at once. Implementing overarching security policies for software systems is integral to protecting community-wide data from harmful attacks. Establishing Cyber Security Programs Through the Community Cyber Security Maturity Model (CCSMM) is an essential reference source that discusses methods in applying sustainable cybersecurity programs and policies within organizations, governments, and other communities. Featuring research on topics such as community engagement, incident planning methods, and information sharing, this book is ideally designed for cybersecurity professionals, security analysts, managers, researchers, policymakers, students, practitioners, and academicians seeking coverage on novel policies and programs in cybersecurity implementation. Detecting and Mitigating Robotic Cyber Security Risks** *IGI Global* **Risk detection and cyber security play a vital role in the use and success of contemporary computing. By utilizing the latest technological advances, more effective prevention techniques can be developed to protect against cyber threats. Detecting and Mitigating Robotic Cyber Security Risks is an essential reference publication for the latest research on new methodologies and applications in the areas of robotic and digital security. Featuring extensive coverage on a broad range of topics, such as authentication techniques, cloud security, and mobile robotics, this book is ideally designed for students, researchers, scientists, and engineers seeking current research on methods, models, and implementations of optimized security in digital contexts. Machine Learning and Cognitive Science Applications in Cyber Security** *IGI Global* **In the past few years, with the evolution of advanced persistent threats and mutation techniques, sensitive and damaging information from a variety of sources have been exposed to possible corruption and hacking. Machine learning, artificial intelligence, predictive analytics, and similar disciplines of cognitive science applications have been found to have significant applications in the domain of cyber security. Machine Learning and Cognitive Science Applications in Cyber Security examines different applications of cognition that can be used to detect threats and analyze data to capture malware. Highlighting such topics as anomaly detection, intelligent platforms, and triangle scheme, this publication is designed for IT specialists, computer engineers, researchers, academicians, and industry professionals interested in the impact of machine learning in cyber security and the methodologies that can help improve the performance and reliability of machine learning applications. Cyberpatterns Unifying Design Patterns with Security and Attack Patterns** *Springer* **Cyberspace in increasingly important to people in their everyday lives for purchasing goods on the Internet, to energy supply increasingly managed remotely using Internet protocols. Unfortunately, this dependence makes us susceptible to attacks from nation states, terrorists, criminals and hactivists. Therefore, we need a better understanding of cyberspace, for which patterns, which are predictable regularities, may help to detect, understand and respond to incidents better. The inspiration for the workshop came from the existing work on formalising design patterns applied to cybersecurity, but we also need to understand the many other types of patterns that arise in cyberspace. Challenges in Cybersecurity and Privacy The European Research Landscape Cybersecurity and Privacy issues are becoming an important barrier for a trusted and dependable global digital society development.In this context, new holistic approaches, methodologies, techniques and tools are needed to cope with those issues, and mitigate cyberattacks Real-Time and Retrospective Analyses of Cyber Security** *Information Science Publishing* **Research Anthology on Privatizing and Securing Data** *IGI Global* **With the immense amount of data that is now available online, security concerns have been an issue from the start, and have grown as new technologies are increasingly integrated in data collection, storage, and transmission. Online cyber threats, cyber terrorism, hacking, and other cybercrimes have begun to take advantage of this information that can be easily accessed if not properly handled. New privacy and security measures have been developed to address this cause for concern and have become an essential area of research within the past few years and into the foreseeable future. The ways in which data is secured and privatized should be discussed in terms of the technologies being used, the methods and models for security that have been developed, and the ways in which risks can be detected, analyzed, and mitigated. The Research Anthology on Privatizing and Securing Data reveals the latest tools and technologies for privatizing and securing data across different technologies and industries. It takes a deeper dive into both risk detection and mitigation, including an analysis of cybercrimes and cyber threats, along with a sharper focus on the technologies and methods being actively implemented and utilized to secure data online. Highlighted topics include information governance and privacy, cybersecurity, data protection, challenges in big data, security threats, and more. This book is essential for data analysts, cybersecurity professionals, data scientists, security analysts, IT specialists, practitioners, researchers, academicians, and students interested in the latest trends and technologies for privatizing and securing data. Cybersecurity in Humanities and Social Sciences A Research Methods Approach** *John Wiley & Sons* **The humanities and social sciences are interested in the cybersecurity object since its emergence in the security debates, at the beginning of the 2000s. This scientific production is thus still relatively young, but diversified, mobilizing at the same time political science, international relations, sociology , law, information science, security studies, surveillance studies, strategic studies, polemology. There is, however, no actual cybersecurity studies. After two decades of scientific production on this subject, we thought it essential to take stock of the research methods that could be mobilized, imagined and invented by the researchers. The research methodology on the subject "cybersecurity" has, paradoxically, been the subject of relatively few publications to date. This dimension is essential. It is the initial phase by which any researcher, seasoned or young doctoral student, must pass, to define his subject of study, delimit the contours, ask the research questions, and choose the methods of treatment. It is this methodological dimension that our book proposes to treat. The questions the authors were asked to answer were: how can cybersecurity be defined? What disciplines in the humanities and social sciences are studying, and how, cybersecurity? What is the place of pluralism or interdisciplinarity? How are the research topics chosen, the questions defined? How, concretely, to study cybersecurity: tools, methods, theories, organization of research, research fields, data ...? How are discipline-specific theories useful for understanding and studying cybersecurity? Has cybersecurity had an impact on scientific theories? Cybersecurity Readiness A Holistic and High-Performance Approach** *SAGE Publications* **Cybersecurity has traditionally been the purview of information technology professionals, who possess specialized knowledge and speak a language that few outside of their department can understand. In our current corporate landscape, however, cybersecurity awareness must be an organization-wide management competency in order to mitigate major threats to an organization's well-being—and be prepared to act if the worst happens. With rapidly expanding attacks and evolving methods of attack, organizations are in a perpetual state of breach and have to deal with this existential threat head-on. Cybersecurity preparedness is a critical and distinctive competency, and this book is intended to help students and practitioners develop and enhance this capability, as individuals continue to be both the strongest and weakest links in a cyber defense system. In addition to providing the non-specialist with a jargon-free overview of cybersecurity threats, Dr. Chatterjee focuses most of the book on developing a practical and easy-to-comprehend management framework and success factors that will help leaders assess cybersecurity risks, address organizational weaknesses, and build a collaborative culture that is informed and responsive. Through brief case studies, literature review, and practical tools, he creates a manual for the student and professional alike to put into practice essential skills for any workplace. Cyber Security Intelligence and Analytics** *Springer* **This book presents the outcomes of the 2019 International Conference on Cyber Security Intelligence and Analytics (CSIA2019), an international conference dedicated to promoting novel theoretical and applied research advances in the interdisciplinary field of cyber security, particularly focusing on threat intelligence, analytics, and countering cyber crime. The conference provides a forum for presenting and discussing innovative ideas, cutting-edge research findings, and novel techniques, methods and applications on all aspects of Cyber Security Intelligence and Analytics. Building a Cybersecurity Culture in Organizations How to Bridge the Gap Between People and Digital Technology** *Springer Nature* **This book offers a practice-oriented guide to developing an effective cybersecurity culture in organizations. It provides a psychosocial perspective on common cyberthreats affecting organizations, and presents practical solutions for leveraging employees' attitudes and behaviours in order to improve security. Cybersecurity, as well as the solutions used to achieve it, has largely been associated with technologies. In contrast, this book argues that cybersecurity begins with improving the connections between people and digital technologies. By presenting a comprehensive analysis of the current cybersecurity landscape, the author discusses, based on literature and her personal experience, human weaknesses in relation to security and the advantages of pursuing a holistic approach to cybersecurity, and suggests how to develop cybersecurity culture in practice. Organizations can improve their cyber resilience by adequately training their staff. Accordingly, the book also describes a set of training methods and tools. Further, ongoing education programmes and effective communication within organizations are considered, showing that they can become key drivers for successful cybersecurity awareness initiatives. When properly trained and actively involved, human beings can become the true first line of defence for every organization. Cyber-Physical Security Protecting Critical Infrastructure at the State and Local Level** *Springer* **This book focuses on the vulnerabilities of state and local services to cyber-threats and suggests possible protective action that might be taken against such threats. Cyber-threats to U.S. critical infrastructure are of growing concern to policymakers, managers and consumers. Information and communications technology (ICT) is ubiquitous and many ICT devices and other components are interdependent; therefore, disruption of one component may have a negative, cascading effect on others. Cyber-attacks might include denial of service, theft or manipulation of data. Damage to critical infrastructure through a cyber-based attack could have a significant impact on the national security, the economy, and the livelihood and safety of many individual citizens. Traditionally cyber**

security has generally been viewed as being focused on higher level threats such as those against the internet or the Federal government. Little attention has been paid to cyber-security at the state and local level. However, these governmental units play a critical role in providing services to local residents and consequently are highly vulnerable to cyber-threats. The failure of these services, such as waste water collection and water supply, transportation, public safety, utility services, and communication services, would pose a great threat to the public. Featuring contributions from leading experts in the field, this volume is intended for state and local government officials and managers, state and Federal officials, academics, and public policy specialists. Cybercrime Through an Interdisciplinary Lens *Routledge* **Research on cybercrime has been largely bifurcated, with social science and computer science researchers working with different research agendas. These fields have produced parallel scholarship to understand cybercrime offending and victimization, as well as techniques to harden systems from compromise and understand the tools used by cybercriminals. The literature developed from these two fields is diverse and informative, but until now there has been minimal interdisciplinary scholarship combining their insights in order to create a more informed and robust body of knowledge. This book offers an interdisciplinary approach to research on cybercrime and lays out frameworks for collaboration between the fields. Bringing together international experts, this book explores a range of issues from malicious software and hacking to victimization and fraud. This work also provides direction for policy changes to both cybersecurity and criminal justice practice based on the enhanced understanding of cybercrime that can be derived from integrated research from both the technical and social sciences. The authors demonstrate the breadth of contemporary scholarship as well as identifying key questions that could be addressed in the future or unique methods that could benefit the wider research community. This edited collection will be key reading for academics, researchers, and practitioners in both computer security and law enforcement. This book is also a comprehensive resource for postgraduate and advanced undergraduate students undertaking courses in social and technical studies.**