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Computer Networks

A Systems Approach

Elsevier **Computer Networks: A Systems Approach, Fifth Edition**, explores the key principles of computer networking, with examples drawn from the real world of network and protocol design. Using the Internet as the primary example, this best-selling and classic textbook explains various protocols and networking technologies. The systems-oriented approach encourages students to think about how individual network components fit into a larger, complex system of interactions. This book has a completely updated content with expanded coverage of the topics of utmost importance

to networking professionals and students, including P2P, wireless, network security, and network applications such as e-mail and the Web, IP telephony and video streaming, and peer-to-peer file sharing. There is now increased focus on application layer issues where innovative and exciting research and design is currently the center of attention. Other topics include network design and architecture; the ways users can connect to a network; the concepts of switching, routing, and internetworking; end-to-end protocols; congestion control and resource allocation; and end-to-end data. Each chapter includes a problem statement, which introduces issues to be examined; shaded sidebars that elaborate on a topic or introduce a related advanced topic; What's Next? discussions that deal with emerging issues in research, the commercial world, or society; and exercises. This book is written for graduate or upper-division undergraduate classes in computer networking. It will also be useful for industry professionals retraining for network-related assignments, as well as for network practitioners seeking to understand the workings of network protocols and the big picture of networking. Completely updated content with expanded coverage of the topics of utmost importance to networking professionals and students, including P2P, wireless, security, and applications Increased focus on application layer issues where innovative and exciting research and design is currently the center of attention Free downloadable network simulation software and lab experiments manual available

Computer Networks

A Systems Approach

Network Simulation Experiments Manual

[Elsevier](#) **Network Simulation Experiments Manual, Third Edition**, is a practical tool containing detailed, simulation-based experiments to help students and professionals learn about key concepts in computer networking. It allows the networking professional to visualize how computer networks work with the aid of a software tool called OPNET to simulate network function. OPNET provides a virtual environment for modeling, analyzing, and predicting the performance of IT infrastructures, including applications, servers, and networking technologies. It can be downloaded free of charge and is easy to install. The book's simulation approach provides a virtual environment for a wide range of

desirable features, such as modeling a network based on specified criteria and analyzing its performance under different scenarios. The experiments include the basics of using OPNET IT Guru Academic Edition; operation of the Ethernet network; partitioning of a physical network into separate logical networks using virtual local area networks (VLANs); and the basics of network design. Also covered are congestion control algorithms implemented by the Transmission Control Protocol (TCP); the effects of various queuing disciplines on packet delivery and delay for different services; and the role of firewalls and virtual private networks (VPNs) in providing security to shared public networks. Each experiment in this updated edition is accompanied by review questions, a lab report, and exercises. Networking designers and professionals as well as graduate students will find this manual extremely helpful. Updated and expanded by an instructor who has used OPNET simulation tools in his classroom for numerous demonstrations and real-world scenarios. Software download based on an award-winning product made by OPNET Technologies, Inc., whose software is used by thousands of commercial and government organizations worldwide, and by over 500 universities. Useful experimentation for professionals in the workplace who are interested in learning and demonstrating the capability of evaluating different commercial networking products, i.e., Cisco routers. Covers the core networking topologies and includes assignments on Switched LANs, Network Design, CSMA, RIP, TCP, Queuing Disciplines, Web Caching, etc.

Understanding and Using the Controller Area Network Communication Protocol Theory and Practice

[Springer Science & Business Media](#) **This book to offers a hands-on guide to designing, analyzing and debugging a communication infrastructure based on the Controller Area Network (CAN) bus. Although the CAN bus standard is well established and currently used in most automotive systems, as well as avionics, medical systems and other devices, its features are not fully understood by most developers, who tend to misuse the network. This results in lost opportunities for better efficiency and performance. These authors offer a comprehensive range of architectural solutions and domains of analysis. It also provides formal models and analytical results, with thorough discussion of**

their applicability, so that it serves as an invaluable reference for researchers and students, as well as practicing engineers.

Computer Networking

A Top-Down Approach

Addison-Wesley Longman **Computer Networking** provides a top-down approach to this study by beginning with applications-level protocols and then working down the protocol stack. Focuses on a specific motivating example of a network-the Internet-as well as introducing students to protocols in a more theoretical context. New short "interlude" on "putting it all together" that follows the coverage of application, transport, network, and datalink layers ties together the various components of the Internet architecture and identifying aspects of the architecture that have made the Internet so successful. A new chapter covers wireless and mobile networking, including in-depth coverage of Wi-Fi, Mobile IP and GSM. Also included is expanded coverage on BGP, wireless security and DNS. This book is designed for readers who need to learn the fundamentals of computer networking. It also has extensive material, on the very latest technology, making it of great interest to networking professionals.

Introduction to Computer Networks

A Systems Approach

Introduction to Computer Networks A Systems Approach Suppose you want to build a computer network, one that has the potential to grow to global proportions and to support applications as diverse as teleconferencing, video on demand, electronic commerce, distributed computing, and digital libraries. What available technologies would serve as the underlying building blocks, and what kind of software architecture would you design to integrate these building blocks into an effective communication service? Answering this question is the overriding goal of this book--to describe the available building materials and then to show how they can be used to construct a network from the ground up. **Chapter Outline: Problem: Building a Network Applications Requirements Architecture Software Performance**

Perspective: Feature Velocity The Open Courses Library introduces you to the best Open Source Courses.

Computer Organization and Design

The Hardware/Software Interface

Elsevier "Presents the fundamentals of hardware technologies, assembly language, computer arithmetic, pipelining, memory hierarchies and I/O"--

Concepts, Applications, Experimentation and Analysis of Wireless Sensor Networks

Springer Nature The new edition of this popular book has been transformed into a hands-on textbook, focusing on the principles of wireless sensor networks (WSNs), their applications, their protocols and standards, and their analysis and test tools; a meticulous care has been accorded to the definitions and terminology. To make WSNs felt and seen, the adopted technologies as well as their manufacturers are presented in detail. In introductory computer networking books, chapters sequencing follows the bottom up or top down architecture of the seven layers protocol. This book starts some steps later, with chapters ordered based on a topic's significance to the elaboration of wireless sensor networks (WSNs) concepts and issues. With such a depth, this book is intended for a wide audience, it is meant to be a helper and motivator, for both the senior undergraduates, postgraduates, researchers, and practitioners; concepts and WSNs related applications are laid out, research and practical issues are backed by appropriate literature, and new trends are put under focus. For senior undergraduate students, it familiarizes readers with conceptual foundations, applications, and practical project implementations. For graduate students and researchers, transport layer protocols and cross-layering protocols are presented and testbeds and simulators provide a must follow emphasis on the analysis methods and tools for WSNs. For practitioners, besides applications and deployment, the manufacturers and components of WSNs at several platforms and testbeds are fully explored.

Computer Networks

Appropriate for Computer Networking or Introduction to Networking courses at both the undergraduate and graduate level in Computer Science, Electrical Engineering, CIS, MIS, and Business Departments. Tanenbaum takes a structured approach to explaining how networks work from the inside out. He starts with an explanation of the physical layer of networking, computer hardware and transmission systems; then works his way up to network applications.

Tanenbaum's in-depth application coverage includes email; the domain name system; the World Wide Web (both client- and server-side); and multimedia (including voice over IP, Internet radio video on demand, video conferencing, and streaming media).

The Algorithm Design Manual

[Springer Science & Business Media](#) This newly expanded and updated second edition of the best-selling classic continues to take the "mystery" out of designing algorithms, and analyzing their efficacy and efficiency. Expanding on the first edition, the book now serves as the primary textbook of choice for algorithm design courses while maintaining its status as the premier practical reference guide to algorithms for programmers, researchers, and students. The reader-friendly Algorithm Design Manual provides straightforward access to combinatorial algorithms technology, stressing design over analysis. The first part, Techniques, provides accessible instruction on methods for designing and analyzing computer algorithms. The second part, Resources, is intended for browsing and reference, and comprises the catalog of algorithmic resources, implementations and an extensive bibliography. NEW to the second edition: • Doubles the tutorial material and exercises over the first edition • Provides full online support for lecturers, and a completely updated and improved website component with lecture slides, audio and video • Contains a unique catalog identifying the 75 algorithmic problems that arise most often in practice, leading the reader down the right path to solve them • Includes several NEW "war stories" relating experiences from real-world applications • Provides up-to-date links leading to the very best algorithm implementations available in C, C++, and Java

Mathematics for Machine Learning

Cambridge University Press **Distills key concepts from linear algebra, geometry, matrices, calculus, optimization, probability and statistics that are used in machine learning.**

Computer Networking

Principles, Protocols and Practice

Original textbook (c) October 31, 2011 by Olivier Bonaventure, is licensed under a Creative Commons Attribution (CC BY) license made possible by funding from The Saylor Foundation's Open Textbook Challenge in order to be incorporated into Saylor's collection of open courses available at: <http://www.saylor.org>. Free PDF 282 pages at <https://www.textbookequity.org/bonaventure-computer-networking-principles-protocols-and-practice/> This open textbook aims to fill the gap between the open-source implementations and the open-source network specifications by providing a detailed but pedagogical description of the key principles that guide the operation of the Internet. 1 Preface 2 Introduction 3 The application Layer 4 The transport layer 5 The network layer 6 The datalink layer and the Local Area Networks 7 Glossary 8 Bibliography

Strengthening Forensic Science in the United States

A Path Forward

National Academies Press **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.

Algorithms and Networking for Computer Games

John Wiley & Sons **Algorithms and Networking for Computer Games** is an essential guide to solving the algorithmic and networking problems of modern commercial computer games, written from the perspective of a computer scientist. Combining algorithmic knowledge and game-related problems, the authors discuss all the common difficulties encountered in game programming. The first part of the book tackles algorithmic problems by presenting how they can be solved practically. As well as "classical" topics such as random numbers, tournaments and game trees, the authors focus on how to find a path in, create the terrain of, and make decisions in the game world. Part two introduces networking related problems in computer games and focuses on three key questions: how to hide the inherent communication delay, how to utilize limited network resources, and how to cope with cheating. **Algorithms and Networking for Computer Games** provides a comprehensive resource that offers deeper algorithmic insight into game programming and explains game-specific network considerations. Read on for... Algorithmic solutions in pseudo code format, which not only emphasizes the idea behind the solution, but also can easily be written into the programming language of your choice. A section on the Synthetic player, covering decision-making, influence maps, finite-state machines, flocking, fuzzy sets and probabilistic reasoning. In-depth treatment of network communication including dead reckoning, local perception filters and cheating prevention. 51 ready-to-use algorithms and 178 illustrative exercises. **Algorithms and Networking for Computer Games** is a must-read text for advanced undergraduate and graduate students on computer game-related courses, postgraduate researchers in game-related topics, and game developers interested in new approaches and the theoretical background to games.

Top-Down Network Design

TOP-DOWN NET DES _c3

Pearson Education **Objectives** The purpose of *Top-Down Network Design, Third Edition*, is to help you design networks that meet a customer's business and technical goals. Whether your customer is another department within your own company or an external client, this book provides you with tested processes and tools to help you understand traffic flow, protocol behavior, and internetworking technologies. After completing this book, you will be equipped to design enterprise networks that meet a customer's requirements for functionality, capacity, performance, availability, scalability, affordability, security, and manageability. **Audience** This book is for you if you are an internetworking professional responsible for designing and maintaining medium- to large-sized enterprise networks. If you are a network engineer, architect, or technician who has a working knowledge of network protocols and technologies, this book will provide you with practical advice on applying your knowledge to internetwork design. This book also includes useful information for consultants, systems engineers, and sales engineers who design corporate networks for clients. In the fast-paced presales environment of many systems engineers, it often is difficult to slow down and insist on a top-down, structured systems analysis approach. Wherever possible, this book includes shortcuts and assumptions that can be made to speed up the network design process. Finally, this book is useful for undergraduate and graduate students in computer science and information technology disciplines. Students who have taken one or two courses in networking theory will find *Top-Down Network Design, Third Edition*, an approachable introduction to the engineering and business issues related to developing real-world networks that solve typical business problems. Changes for the Third Edition Networks have changed in many ways since the second edition was published. Many legacy technologies have disappeared and are no longer covered in the book. In addition, modern networks have become multifaceted, providing support for numerous bandwidth-hungry applications and a variety of devices, ranging from smart phones to tablet PCs to high-end servers. Modern users expect the network to be available all the time, from any device, and to let them securely collaborate with coworkers, friends, and family. Networks today support voice, video, high-definition TV, desktop sharing, virtual meetings, online training, virtual reality, and applications that we can't even imagine that brilliant college students are busily creating in their dorm rooms. As applications rapidly change and put more demand

on networks, the need to teach a systematic approach to network design is even more important than ever. With that need in mind, the third edition has been retooled to make it an ideal textbook for college students. The third edition features review questions and design scenarios at the end of each chapter to help students learn top-down network design. To address new demands on modern networks, the third edition of Top-Down Network Design also has updated material on the following topics: √ Network redundancy √ Modularity in network designs √ The Cisco SAFE security reference architecture √ The Rapid Spanning Tree Protocol (RSTP) √ Internet Protocol version 6 (IPv6) √ Ethernet scalability options, including 10-Gbps Ethernet and Metro Ethernet √ Network design and management tools

Network and Parallel Computing

IFIP International Conference, NPC 2010, Zhengzhou, China, September 13-15, 2010, Proceedings

Springer This book constitutes the refereed proceedings of the IFIP International Conference, NPC 2010, held in Zhengzhou, China, in September 2010. The 39 papers presented were carefully selected from 89 submissions. The papers are organized in topical sections on Parallelization and Optimization, Parallel Algorithms, Network, CPU and Multicore, Cloud and Grid Infrastructure, Network on Chip.

Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations

Cambridge University Press The new edition of the highly influential Tallinn Manual, which outlines public international law as it applies to cyber operations.

Computer Networks

Pearson College Division **Computer Networks** is the ideal introduction to today's and tomorrow's networks. This classic best-seller has been totally rewritten to reflect the networks of the late 1990s and beyond. Author, educator, and researcher Andrew S. Tanenbaum, winner of the ACM Karl V. Karlstrom Outstanding Educator Award, carefully explains how networks work inside, from the hardware technology up through the most popular network applications. The book takes a structured approach to networking, starting at the bottom (the physical layer) and gradually working up to the top (the application layer). The topics covered include: *Physical layer (e.g., copper, fiber, radio, and satellite communication) *Data link layer (e.g., protocol principles, HDLC, SLIP, and PPP) *MAC Sublayer (e.g., IEEE 802 LANs, bridges, new high-speed LANs) *Network layer (e.g., routing, congestion control, internetworking, IPv6) *Transport layer (e.g., transport protocol principles, TCP, network performance) *Application layer (e.g., cryptography, email, news, the Web, Java, multimedia) In each chapter, the necessary principles are described in detail, followed by extensive examples taken from the Internet, ATM networks, and wireless

Microsoft Manual of Style

Pearson Education **Maximize the impact and precision of your message!** Now in its fourth edition, the **Microsoft Manual of Style** provides essential guidance to content creators, journalists, technical writers, editors, and everyone else who writes about computer technology. Direct from the Editorial Style Board at Microsoft—you get a comprehensive glossary of both general technology terms and those specific to Microsoft; clear, concise usage and style guidelines with helpful examples and alternatives; guidance on grammar, tone, and voice; and best practices for writing content for the web, optimizing for accessibility, and communicating to a worldwide audience. Fully updated and optimized for ease of use, the **Microsoft Manual of Style** is designed to help you communicate clearly, consistently, and accurately about technical topics—across a range of audiences and media.

Environmental Online Communication

Springer Science & Business Media **The Internet and wireless communication networks are transforming the way society handles the explosive growth & the dwindling half-life of environmentally relevant information. How can we leverage new technologies to advocate sustainability & the protection of natural ecosystems? This book presents an interdisciplinary investigation of this question, combining theoretical foundations of environmental online communication with pioneering conceptual work & case studies of successful information systems. Environmental Online Communication addresses the transition to a knowledge-based economy, sheds light on hidden assumptions & misconceptions about environmental issues, & suggests priorities for research and policy development. This volume analyses communicative strategies and processes from four interrelated perspectives: - Raising Environmental Awareness - Environmental Science - Corporate Sustainability - Networks & Virtual Communities Supplemental material is available at: www.ecoresearch.net/springer**

The Image of the City

MIT Press **The classic work on the evaluation of city form. What does the city's form actually mean to the people who live there? What can the city planner do to make the city's image more vivid and memorable to the city dweller? To answer these questions, Mr. Lynch, supported by studies of Los Angeles, Boston, and Jersey City, formulates a new criterion—imageability—and shows its potential value as a guide for the building and rebuilding of cities. The wide scope of this study leads to an original and vital method for the evaluation of city form. The architect, the planner, and certainly the city dweller will all want to read this book.**

Peterson's Stress Concentration Factors

John Wiley & Sons **The bible of stress concentration factors—updated to reflect today's advances in stress analysis This book establishes and maintains a system of data classification for all the applications of stress and strain analysis, and expedites their synthesis into CAD applications. Filled with all of the latest developments in stress and strain analysis, this Fourth Edition presents stress concentration factors both graphically and with formulas, and the illustrated index**

allows readers to identify structures and shapes of interest based on the geometry and loading of the location of a stress concentration factor. Peterson's Stress Concentration Factors, Fourth Edition includes a thorough introduction of the theory and methods for static and fatigue design, quantification of stress and strain, research on stress concentration factors for weld joints and composite materials, and a new introduction to the systematic stress analysis approach using Finite Element Analysis (FEA). From notches and grooves to shoulder fillets and holes, readers will learn everything they need to know about stress concentration in one single volume. Peterson's is the practitioner's go-to stress concentration factors reference Includes completely revised introductory chapters on fundamentals of stress analysis; miscellaneous design elements; finite element analysis (FEA) for stress analysis Features new research on stress concentration factors related to weld joints and composite materials Takes a deep dive into the theory and methods for material characterization, quantification and analysis methods of stress and strain, and static and fatigue design Peterson's Stress Concentration Factors is an excellent book for all mechanical, civil, and structural engineers, and for all engineering students and researchers.

Research and Applications in Global Supercomputing

IGI Global Rapidly generating and processing large amounts of data, supercomputers are currently at the leading edge of computing technologies. Supercomputers are employed in many different fields, establishing them as an integral part of the computational sciences. Research and Applications in Global Supercomputing investigates current and emerging research in the field, as well as the application of this technology to a variety of areas. Highlighting a broad range of concepts, this publication is a comprehensive reference source for professionals, researchers, students, and practitioners interested in the various topics pertaining to supercomputing and how this technology can be applied to solve problems in a multitude of disciplines.

Computer Organization and Design RISC-V Edition

The Hardware Software Interface

Morgan Kaufmann **The new RISC-V Edition of Computer Organization and Design features the RISC-V open source instruction set architecture, the first open source architecture designed to be used in modern computing environments such as cloud computing, mobile devices, and other embedded systems. With the post-PC era now upon us, Computer Organization and Design moves forward to explore this generational change with examples, exercises, and material highlighting the emergence of mobile computing and the Cloud. Updated content featuring tablet computers, Cloud infrastructure, and the x86 (cloud computing) and ARM (mobile computing devices) architectures is included. An online companion Web site provides advanced content for further study, appendices, glossary, references, and recommended reading. Features RISC-V, the first such architecture designed to be used in modern computing environments, such as cloud computing, mobile devices, and other embedded systems Includes relevant examples, exercises, and material highlighting the emergence of mobile computing and the cloud**

Computer Security Handbook

Wiley

Networking: A Beginner's Guide, Sixth Edition

McGraw Hill Professional **Current, essential IT networking skills--made easy! Thoroughly revised to cover the latest technologies, this practical resource provides you with a solid foundation in networking fundamentals. Networking: A Beginner's Guide, Sixth Edition discusses wired and wireless network design, configuration, hardware, protocols, security, backup, recovery, and virtualization. You'll also get step-by-step instructions for installing, configuring, and managing Windows Server 2012, Exchange Server 2013, Oracle Linux, and Apache. This is the perfect book for anyone starting a networking career or in need of an easy-to-follow refresher. Understand network cabling, topologies, hardware, and the OSI seven-layer model Connect LANs and WANs Configure network protocols, such as TCP/IP, IPX/SPX, SMTP, DHCP, HTTP, WINS, and more Explore directory services, such as Microsoft's Active Directory, X.400, and LDAP Enable and support remote network access Secure your network and handle backup and disaster recovery**

Select, install, and manage reliable network servers, including Windows Server 2012, Exchange Server 2013, Oracle Linux, and Apache Manage network workstation computers Design a robust network from the ground up Work with virtualization technologies, such as Hyper-V, VMWare, and Oracle VM VirtualBox

Computer Networks - A Systems Approach 3rd Edition

Security in Computing

Pearson Education India

Handbook of Water and Wastewater Systems Protection

Springer Science & Business Media **Following the events of 9/11, the Administrator of the US Environmental Protection Agency created the Water Protection Task Force (WPTF), which identified water and wastewater systems as a major area of vulnerability to deliberate attack. The WPTF suggested that there are steps that can be taken to reduce these vulnerabilities and to make it as difficult as possible for potential saboteurs to succeed. The WPTF recommended that be scrutinized with renewed vigor to secure water and wastewater systems against these possible threats. It also recommended that water and wastewater systems have a response plan in place in the event an act of terrorism occurs. The WPTF identified water distribution networks as an area of special vulnerability and highlighted the need for rapid on-line detection methods that are accurate and have a wide detection range. As a result of these recommendations novel technologies from various fields of science and engineering are now addressing water security issues and water and wastewater utilities are looking for innovative solutions. Once such technologies are available, there will be a rapid implementation process that will present many business opportunities for the private sector. However, in addition to terrorist threats water and wastewater systems are inherently vulnerable to natural disasters such as earthquakes and floods. This volume will address the problems associated with both intended terrorist attacks and natural disasters affecting water or wastewater systems. The book is divided into parts based on the kinds of threats facing water and wastewater systems: (1) a direct attack on water and wastewater infrastructure storage reservoirs, and distribution and collection networks; (2) a cyber attack disabling the functionality of the water and**

wastewater systems or taking over control of key components which might result in system failures; and (3) a deliberate chemical or biological contaminant injection at one of the water distribution system's nodes. It will examine unique plans, technological and managerial innovations for protecting such systems, and includes descriptions of projects that were implemented to respond to natural disasters. Case studies are presented that discuss existing projects and evaluate their performance, with an emphasis on providing guidelines and techniques that can be implemented by water and wastewater planners and managers to deal with natural and manmade disasters should they occur.

Advances in Digital Forensics XI

11th IFIP WG 11.9 International Conference, Orlando, FL, USA, January 26-28, 2015, Revised Selected Papers

Springer 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 XI* 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 Internet Crime Investigations Forensic Techniques Mobile Device Forensics Cloud Forensics Forensic Tools This book is the eleventh 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 edited papers from the Eleventh Annual IFIP WG 11.9 International Conference on Digital Forensics, held in Orlando, Florida in the winter of 2015.

Advances in Digital Forensics XI is an important resource for researchers, faculty members and graduate students, as well as for practitioners and individuals engaged in research and development efforts for the law enforcement and intelligence communities. **Gilbert Peterson**, Chair, IFIP WG 11.9 on Digital Forensics, is a Professor of Computer Engineering at the Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, USA. **Sujeet Sheno**i is the F.P. Walter Professor of Computer Science and a Professor of Chemical Engineering at the University of Tulsa, Tulsa, Oklahoma, USA.

Geographic Hypermedia Concepts and Systems

Springer Science & Business Media **The book serves as a collection of multi-disciplinary contributions related to Geographic Hypermedia and highlights the technological aspects of GIS. Specifically, it focuses on its database and database management system. The methodologies for modeling and handling geographic data are described. It presents the novel models, methods and tools applied in Spatial Decision Support paradigm.**

Architecture of Network Systems

Elsevier **Architecture of Network Systems explains the practice and methodologies that will allow you to solve a broad range of problems in system design, including problems related to security, quality of service, performance, manageability, and more. Leading researchers Dimitrios Serpanos and Tilman Wolf develop architectures for all network sub-systems, bridging the gap between operation and VLSI. This book provides comprehensive coverage of the technical aspects of network systems, including system-on-chip technologies, embedded protocol processing and high-performance, and low-power design. It develops a functional approach to network system architecture based on the OSI reference model, which is useful for practitioners at every level. It also covers both fundamentals and the latest developments in network systems architecture, including network-on-chip, network processors, algorithms for lookup and classification, and network systems for the next-generation Internet. The book is recommended for practicing engineers designing the architecture of network systems and graduate students in computer engineering**

and computer science studying network system design. This is the first book to provide comprehensive coverage of the technical aspects of network systems, including processing systems, hardware technologies, memory managers, software routers, and more. Develops a systematic approach to network architectures, based on the OSI reference model, that is useful for practitioners at every level. Covers both the important basics and cutting-edge topics in network systems architecture, including Quality of Service and Security for mobile, real-time P2P services, Low-Power Requirements for Mobile Systems, and next generation Internet systems.

Privacy, Intrusion Detection and Response: Technologies for Protecting Networks

Technologies for Protecting Networks

IGI Global Though network security has almost always been about encryption and decryption, the field of network security is moving towards securing the network environment rather than just stored or transferred data. Privacy, Intrusion Detection and Response: Technologies for Protecting Networks explores the latest practices and research works in the area of privacy, intrusion detection, and response. Increased interest on intrusion detection together with prevention and response proves that protecting data either in the storage or during transfer is necessary, but not sufficient, for the security of a network. This book discusses the latest trends and developments in network security and privacy, and serves as a vital reference for researchers, academics, and practitioners working in the field of privacy, intrusion detection, and response.

Network Algorithmics

An Interdisciplinary Approach to Designing Fast Networked Devices

Morgan Kaufmann In designing a network device, you make dozens of decisions that affect the speed with which it will perform-sometimes for better, but sometimes for worse. Network Algorithmics provides a complete, coherent methodology for maximizing speed while meeting your other design goals. Author George Varghese begins by laying out the implementation bottlenecks that are most often encountered at four disparate levels of implementation: protocol, OS, hardware, and architecture. He then derives 15 solid principles-ranging from the commonly recognized to the groundbreaking-that are key to breaking these bottlenecks. The rest of the book is devoted to a systematic application of these principles to bottlenecks found specifically in endnodes, interconnect devices, and specialty functions such as security and measurement that can be located anywhere along the network. This immensely practical, clearly presented information will benefit anyone involved with network implementation, as well as students who have made this work their goal. **FOR INSTRUCTORS:** To obtain access to the solutions manual for this title simply register on our textbook website (textbooks.elsevier.com) and request access to the Computer Science subject area. Once approved (usually within one business day) you will be able to access all of the instructor-only materials through the "Instructor Manual" link on this book's academic web page at textbooks.elsevier.com. Addresses the bottlenecks found in all kinds of network devices, (data copying, control transfer, demultiplexing, timers, and more) and offers ways to break them Presents techniques suitable specifically for endnodes, including Web servers Presents techniques suitable specifically for interconnect devices, including routers, bridges, and gateways Written as a practical guide for implementers but full of valuable insights for students, teachers, and researchers Includes end-of-chapter summaries and exercises

Distributed Computing

Principles, Algorithms, and Systems

Cambridge University Press **Designing distributed computing systems is a complex process requiring a solid understanding of the design problems and the theoretical and practical aspects of their solutions. This comprehensive textbook covers the fundamental principles and models underlying the theory, algorithms and systems aspects of distributed computing. Broad and detailed coverage of the theory is balanced with practical systems-related issues such as mutual exclusion, deadlock detection, authentication, and failure recovery. Algorithms are carefully selected, lucidly presented, and described without complex proofs. Simple explanations and illustrations are used to elucidate the algorithms. Important emerging topics such as peer-to-peer networks and network security are also considered. With vital algorithms, numerous illustrations, examples and homework problems, this textbook is suitable for advanced undergraduate and graduate students of electrical and computer engineering and computer science. Practitioners in data networking and sensor networks will also find this a valuable resource. Additional resources are available online at www.cambridge.org/9780521876346.**

Software-Defined Networks

A Systems Approach

Software-Defined Networks (SDN) are transforming the Internet by replacing bundled, proprietary hardware and control software. SDN is being embraced by cloud providers, telcos, and enterprises, as it enables a new era of innovation in networking. This book provides a comprehensive introduction to SDN from the perspective of those who are developing and leveraging the technology. Book Features: Describes a complete SDN stack, illustrated with example open source software. Emphasizes underlying concepts, abstractions, and design rationale. Describes both fixed-function and programmable switching chips. Describes the P4-based toolchain for programming and controlling switches. Describes a range of SDN use cases: enterprises, datacenters, access networks. Includes hands-on programming exercises, downloadable fro GitHub.

Tallinn Manual on the International Law Applicable to Cyber Warfare

Cambridge University Press **The result of a three-year project, this manual addresses the entire spectrum of international legal issues raised by cyber warfare.**

Analytic Research Foundations for the Next-Generation Electric Grid

National Academies Press **Electricity is the lifeblood of modern society, and for the vast majority of people that electricity is obtained from large, interconnected power grids. However, the grid that was developed in the 20th century, and the incremental improvements made since then, including its underlying analytic foundations, is no longer adequate to completely meet the needs of the 21st century. The next-generation electric grid must be more flexible and resilient. While fossil fuels will have their place for decades to come, the grid of the future will need to accommodate a wider mix of more intermittent generating sources such as wind and distributed solar photovoltaics. Achieving this grid of the future will require effort on several fronts. There is a need for continued shorter-term engineering research and development, building on the existing analytic foundations for the grid. But there is also a need for more fundamental research to expand these analytic foundations. Analytic Research Foundations for the Next-Generation Electric Grid provide guidance on the longer-term critical areas for research in mathematical and computational sciences that is needed for the next-generation grid. It offers recommendations that are designed to help direct future research as the grid evolves and to give the nation's research and development infrastructure the tools it needs to effectively develop, test, and use this research.**

Cybercrime and Cloud Forensics: Applications for Investigation Processes

Applications for Investigation Processes

IGI Global While cloud computing continues to transform developments in information technology services, these advancements have contributed to a rise in cyber attacks; producing an urgent need to extend the applications of investigation processes. Cybercrime and Cloud Forensics: Applications for Investigation Processes presents a collection of research and case studies of applications for investigation processes in cloud computing environments. This reference source brings together the perspectives of cloud customers, security architects, and law enforcement agencies in the developing area of cloud forensics.

Proceedings of the 2001 USENIX Annual Technical Conference

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