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The Multimedia Internet Stephen Weinstein 2007-02-15 Here is a thorough, not-overly-complex introduction to the three technical foundations for multimedia applications across the Internet: communications (principles, technologies and networking); compressive encoding of digital media; and Internet protocol and services. All the contributing systems elements are explained through descriptive text and numerous illustrative figures; the result is a book well-suited toward non-specialists, preferably with technical background, who need well-composed tutorial introductions to the three foundation areas. The text discusses the latest advances in digital audio and video encoding, optical and wireless communications technologies, high-speed access networks, and IP-based media streaming, all crucial enablers of the multimedia Internet.

Traffic Engineering and QoS Optimization of Integrated Voice and Data Networks Gerald R. Ash 2006-11-03 This book describes, analyzes, and recommends traffic engineering (TE) and quality of service (QoS) optimization methods for integrated voice/data dynamic routing networks. These functions control a network's response to traffic demands and other stimuli, such as link failures or node failures. TE and QoS optimization is concerned with measurement, modeling, characterization, and control of network traffic, and the application of techniques to achieve specific performance objectives. The scope of the analysis and recommendations include dimensioning, call/flow and connection routing, QoS resource management, routing table management, dynamic transport routing, and operational requirements. Case studies are included which provide the reader with a concrete way into the technical details and highlight why and how to use the techniques described in the book. Includes Case Studies of MPLS and GMPLS Network Optimization Presents state-of-the-art traffic engineering and quality of service optimization methods and illustrates the tradeoffs between the various methods discussed Contains practical Case Studies based on large-scale service provider implementations and architecture plans Written by a highly respected and well known active expert in traffic engineering and quality of service

Distributed Computer and Communication Networks Vladimir M. Vishnevskiy 2018-09-03 This book constitutes the refereed proceedings of the 21th International Conference on Distributed and Computer and Communication Networks, DCCN 2018, held in Moscow, Russia, in September 2018. The 50 full papers and the 9 short papers were carefully reviewed and selected from 168 submissions. The papers cover the following topics: computer and communication networks architecture optimization; control in computer and communication networks; performance and QoS/QoE evaluation in wireless networks; analytical modeling and simulation of next-generation communications systems; queueing theory and reliability theory applications in computer networks; wireless 4G/5G networks, cm- and mm-wave radio technologies; RFID technology and its application in intellectual transportation networks; Internet of Things, wearables, and applications of distributed information systems; probabilistic and statistical models in information systems; mathematical modeling of high-tech systems; mathematical modeling and control problems; distributed and cloud computing systems, big data analytics.

Wireless Information Networks Kaveh Pahlavan 2005-11-07 Towards location aware mobile ad hoc sensors A Systems Engineering Approach to Wireless Information Networks The Second Edition of this internationally respected textbook brings readers fully up to date with the myriad of developments in wireless communications. When first published in 1995, wireless communications was synonymous with cellular telephones. Now wireless information networks are the most important technology in all branches of telecommunications. Readers can learn about the latest applications in such areas as ad hoc sensor networks, home networking, and wireless positioning. Wireless Information Networks takes a systems engineering approach: technical topics are presented in the context of how they fit into the ongoing development of new systems and services, as well as the recent developments in national and international spectrum allocations and standards. The authors have organized the myriad of current and emerging wireless technologies into logical categories: * Introduction to Wireless Networks presents an up-to-the-moment discussion of the evolution of the cellular industry from analog cellular technology to 2G, 3G, and 4G, as well as the emergence of WLAN and WPAN as broadband ad hoc networks * Characteristics of Radio Propagation includes new coverage of channel modeling for space-time, MIMO, and UWB communications and wireless geolocation networks * Modem Design offers new descriptions of space-time coding, MIMO antenna systems, UWB communications, and multi-user detection and interference cancellation techniques used in CDMA networks * Network Access and System Aspects incorporates new chapters on UWB systems and RF geolocations, with a thorough revision of wireless access techniques and wireless systems and standards Exercises that focus on real-world problems are provided at the end of each chapter. The mix of assignments, which includes computer projects and questionnaires in addition to traditional problem sets, helps readers focus on key issues and develop the skills they need to solve actual engineering problems. Extensive references are provided for those readers who would like to explore particular topics in greater depth. With its emphasis on knowledge-building to solve problems, this is an excellent graduate-level textbook. Like the previous edition, this latest edition will also be a standard reference for the telecommunications industry.

Wireless Communications & Networking Vijay Garg 2010-07-28 This book provides comprehensive coverage of mobile data networking and mobile communications under a single cover for diverse audiences including managers, practicing engineers, and students who need to understand this industry. In the last two decades, many books have been written on the subject of wireless communications and networking. However, mobile data networking and mobile communications were not fully addressed in a unified fashion. This book fills that gap in the literature and is written to provide essentials of wireless communications and wireless networking, including Wireless Personal Area Networks (WPAN), Wireless Local Area Networks (WLAN), and Wireless Wide Area Networks (WWAN). The first ten chapters of the book focus on the fundamentals that are required to study mobile data networking and mobile communications. Numerous solved examples have been included to show applications of theoretical concepts. In addition, unsolved problems are given at the end of each chapter for practice. (A solutions manual will be available.) After introducing fundamental concepts, the book focuses on mobile networking aspects. Four chapters are devoted to the discussion of WPAN, WLAN, WWAN, and internetworking between WLAN and WWAN. Remaining seven chapters deal with other aspects of mobile communications such as mobility management, security, cellular network planning, and 4G systems. A unique feature of this book that is missing in most of the available books on wireless communications and networking is a balance between the theoretical and practical concepts. Moreover, this book can be used to teach a one/two semester course in mobile data networking and mobile communications to ECE and CS students. *Details the essentials of Wireless Personal Area Networks(WPAN), Wireless Local Area Networks (WLAN), and Wireless Wide Area Networks (WWAN) *Comprehensive and up-to-date coverage including the latest in standards and 4G technology *Suitable for classroom use in senior/first year grad level courses. Solutions manual and other instructor support available

Cloud Services, Networking, and Management Nelson L. S. da Fonseca 2015-04-20 Cloud Services, Networking and Management provides a comprehensive overview of the cloud infrastructure and services, as well as their underlying management mechanisms, including data center virtualization and networking, cloud security and reliability, big data analytics, scientific and commercial applications. Special features of the book include: State-of-the-art content Self-contained chapters for readers with specific interests Includes commercial applications on Cloud (video services and games)

Probability and Random Processes for Electrical Engineering Alberto Leon-Garcia 1994-09

Operations and Management in IP-Based Networks Schönwälder Jürgen 2005-09-28 This book constitutes the refereed proceedings of the 5th IEEE International Workshop on IP Operations and Management, IPOM 2005, held in Barcelona, Spain, in October 2005. The 21 revised full papers presented were carefully reviewed and selected for inclusion in the book. They are organized in topical sections on operations and management for VoIP, IMS and managed IP services, management of open interfaces, QoS and pricing in NGNs, autonomic communications, policy-based management, routing and topologies, routing and tools, as well as experiences from testbeds and trials.

Green Radio Communication Networks Ekram Hossain 2012-07-05 Presents state-of-the-art research on green radio communications and networking technology to researchers and professionals working in wireless communication.

Communications, Navigation, Sensing and Services (CONASENSE) L. P. Ligthart 2022-09-01 During the last decade there was a shift from wireless and mobile communications technology, networks and applications towards integration of radio with other disciplines. Integration of navigation, sensing and services allow for entering new areas in which many requirements from individuals and organizations are satisfied. Potential applications are manifold. Developments for realizing these new application areas will cause a boost on new systems demonstrating the potentials of this integration approach. In this first book the fundamentals of this new approach on integrated communication, navigation, sensing and services (Conasense) will be elucidated. Furthermore, several applications illustrate some of the aims of Conasense. Two major areas have been selected 1. Quality of life 2. Intelligent Conasense architectures Topics in the book on 'quality of life' include: • Visionary plans on health, security, neurophysics, indoor and outdoor safeguarding: in all these areas new Conasense technology and systems are essential. Topics in the book

on intelligent Conasense architectures concern: • a framework describing novelties in Conasense technology needed to realize the aimed improve in 'quality of life'. • Breakthroughs on full integration of space-based and terrestrial communication and navigation systems with advanced high resolution sensing of the local environment supplemented with geographical information at regionals, national and international scales.

Communication Networks Alberto Leon-Garcia 2003-07-16 This book is designed for introductory one-semester or one-year courses in communications networks in upper-level undergraduate programs. The second half of the book can be used in more advanced courses. As pre-requisites the book assumes a general knowledge of computer systems and programming, and elementary calculus. The second edition expands on the success of the first edition by updating on technological changes in networks and responding to comprehensive market feedback.

Information Technology Network and Internet C. T. Bhunia 2005-12 This Book Is Specially Designed To Improve The Problem Solving Ability And The Imaginative Power Of Students Over The Subjects Of Information Technology, Network And Internet. The Conventional Text And Reference Books Ignore That Fact Young Minds Need To Be Properly Trained And Nurtured To Achieve Excellency. In The Book Lots Of Research Issues Are Discussed Pertaining The Current Issues Of Networking. The Book Covers General Topics Of Information Technology Including The Future Trends Of Computing And Networking, Networks In General Staring With Protocol To Wireless Networking, Internet Technology In Details Including Next Generation Internet.The Evolution Of Networking, Economics Benefits, Transitional Phases, Evolution Of Generations Of Computers And Communications, Pcn, Packet Switching To Atm Cell Switching, Lan, Man, Wan, Ethernet And Its Future Generations, Internetworking, Gateways, Bridges, Isdn, Xdsl And Applications Are Discussed. Tcp/Ip, Udp, Icmp, Arp, Rarp, Ipv6, Firewall Are Dealt With Problems And Exercises. The Future Network Will Face Three Major Challenges Of High Data Rate, Reliable Transport And Secured Transport. Two Exclusives Chapters Deal With Reliable Transport (Basically Error Control) And Secured Transport. The Details Analysis Of Bec Techniques Including Those Of Basic Arqs And Several New And Modified Approaches Are Extensively Discussed. Many Research Direction Are Examined.The Conventional Security Techniques Namely Coding Schemes, Key Transport Protocol, Key Distribution Protocols, One Time Key Pad, Des, Aes And Md Etc. Are Thoroughly Discussed In The Book. The Future Research Areas Of Secured Techniques Are Explored With Possible Solution. A Chapter On Successor Of Ir Now Believed As Knowledge Technology Has Been Referred To. In Fact In Every Chapter, Some Research Issues Are Mentioned With Judicious Selection And Approaches.The Book Is Aimed To Benefit Be/Btech And Mtech Students Of Computer Science & Engineering, Electronics & Communication Engineering, Information Technology And Electrical Engineering.

Mobile and Wireless Communications Salma Ait Fares 2010-01-01 Mobile and wireless communications applications have a clear impact on improving the humanity wellbeing. From cell phones to wireless internet to home and office devices, most of the applications are converted from wired into wireless communication. Smart and advanced wireless communication environments represent the future technology and evolutionary development step in homes, hospitals, industrial, vehicular and transportation systems. A very appealing research area in these environments has been the wireless ad hoc, sensor and mesh networks. These networks rely on ultra low powered processing nodes that sense surrounding environment temperature, pressure, humidity, motion or chemical hazards, etc. Moreover, the radio frequency (RF) transceiver nodes of such networks require the design of transmitter and receiver equipped with high performance building blocks including antennas, power and low noise amplifiers, mixers and voltage controlled oscillators. Nowadays, the researchers are facing several challenges to design such building blocks while complying with ultra low power consumption, small area and high performance constraints. CMOS technology represents an excellent candidate to facilitate the integration of the whole transceiver on a single chip. However, several challenges have to be tackled while designing and using nanoscale CMOS technologies and require innovative idea from researchers and circuits designers. While major researchers and applications have been focusing on RF wireless communication, optical wireless communication based system has started to draw some attention from researchers for a terrestrial system as well as for aerial and satellite terminals. This renewed interested in optical wireless communications is driven by several advantages such as no licensing requirements policy, no RF radiation hazards, and no need to dig up roads besides its large bandwidth and low power consumption. This second part of the book, Mobile and Wireless Communications: Key Technologies and Future Applications, covers the recent development in ad hoc and sensor networks, the implementation of state of the art of wireless transceivers building blocks and recent development on optical wireless communication systems. We hope that this book will be useful for students, researchers and practitioners in their research studies.

Telemedicine Georgi Graschew 2011-06-20 Telemedicine is a rapidly evolving field as new technologies are implemented for example for the development of wireless sensors, quality data transmission. Using the Internet applications such as counseling, clinical consultation support and home care monitoring and management are more and more realized, which improves access to high level medical care in underserved areas. The 23 chapters of this book present manifold examples of telemedicine treating both theoretical and practical foundations and application scenarios.

Probability and Random Processes for Electrical Engineering Alberto Leon-Garcia 1993-12

Delivery and Adoption of Cloud Computing Services in Contemporary Organizations Chang, Victor 2015-03-31 The ubiquity of technology has not only brought the need for computer knowledge to every aspect of the modern business world; it has also increased our need to safely store the data we are now creating at a rate never experienced before. Delivery and Adoption of Cloud Computing Services in Contemporary Organizations brings together the best practices for storing massive amounts of data. Highlighting ways cloud services can work effectively in production and in real time, this book is an essential reference source for professionals and academics of various disciplines, such as computer science, consulting, information technology, information and communication sciences, healthcare, and finance.

Smart Grid as a Solution for Renewable and Efficient Energy Ahmad, Ayaz 2016-04-20 As the need for proficient power resources continues to grow, it is becoming increasingly important to implement new strategies and technologies in energy distribution to meet consumption needs. The employment of smart grid networks assists in the efficient allocation of energy resources. Smart Grid as a Solution for Renewable and Efficient Energy features emergent research and trends in energy consumption and management, as well as communication techniques utilized to monitor power transmission and usage. Emphasizing developments and challenges occurring in the field, this book is a critical resource for researchers and students concerned with signal processing, power demand management, energy storage procedures, and control techniques within smart grid networks.

Management Enabling the Future Internet for Changing Business and New Computing Services Choong Seon Hong 2009-09-19 We are delighted to present the proceedings of the 12th Asia-Paci?c Network Operations and Management Symposium (APNOMS 2009), which was held in Jeju, Korea, during September 23–25, 2009. Recently, various convergences in wired and wireless networks, and conv- gence of telecommunications and broadcastings, are taking place for ubiquitous multimedia service provisioning. For example, broadband IP/MPLS wired n- works are actively converged with IEEE 802.11e wireless LAN, IEEE 802.16 Wireless MAN, 3G/4G wireless cellular networks, and direct multimedia bro- cast (DMB) networks. For e?cient support of service provisioning for ubiq- tous multimedia services on the broadband convergencenetworks, well-designed and implemented network operations and management functions with Q- guaranteed tra?c engineering are essential. The converged network will open the way for a new world with emerging new businesses and computing services. The Organizing Committee (OC) selected “Management Enabling the Future Internet for Changing Business and New Computing Services” as the timely theme of APNOMS 2009. Contributions from academia, industry and research institutions met these challengeswith173papersubmissions,fromwhich41high-qualitypapers(23.7% of the submissions) were selected for technical sessions as full papers, and 32 papers were selected as short papers. In addition, we had nine papers in - novation sessions for on-going research. Diverse topics were covered, including Tra?c Trace Engineering, Con?guration and Fault Management, Management of IP-Based Networks, Autonomous and Distributed Control, Sensor Network and P2P Management, Converged Networks and Tra?c Engineering, SLA and QoS Management, Active and Security Management, Wireless and Mobile N- work Management, and Security Management.

NETWORKING 2005. Networking Technologies, Services, and Protocols; Performance of Computer and Communication Networks; Mobile and Wireless Communications Systems Raouf Boutaba 2005-05-02 This book constitutes the refereed proceedings of the 4th International IFIP-TC6 Networking Conference, NETWORKING 2005, held in Waterloo, Canada in May 2005. The 105 revised full papers and 36 posters were carefully reviewed and selected from 430 submissions. The papers are organized in topical sections on peer-to-peer networks, Internet protocols, wireless security, network security, wireless performance, network service support, network modeling and simulation, wireless LAN, optical networks, Internet performance and Web applications, ad-hoc networks, adaptive networks, radio resource management, Internet routing, queuing models, monitoring, network management, sensor networks, overlay multicast, QoS, wirless scheduling, multicast traffic management and engineering, mobility management, bandwidth management, DCMA, and wireless resource management.

Smart City 360° Alberto Leon-Garcia 2016-06-28 This volume constitutes the thoroughly refereed post-conference proceedings of the First EAI International Summit, Smart City 360°, held in Bratislava, Slovakia and Toronto, ON, Canada, in October 2015. The 77 carefully reviewed papers include eight conferences: The Bratislava program covered the Conference on Sustainable Solutions beyond Mobility of Goods (SustainableMoG 2015), the MOBIDANUBE conference which strengthens research in the field of mobility opportunities and within Danube strategy, and the conference on Social Innovation and Community Aspects of Smart Cities (SmartCityCom 2015). In parallel the SmartCity360 Toronto included five conferences addressing urban mobility (SUMS), sustainable cities (S2CT), smart grids (SGSC), wearable devices for health and wellbeing (SWIT Health), and big data (BigDASC).

Building Next-Generation Converged Networks Al-Sakib Khan Pathan 2013-01-29 Supplying a comprehensive introduction to next-generation networks, Building Next-Generation Converged Networks: Theory and Practice strikes a balance between how and why things work and how to make them work. It compiles recent advancements along with basic issues from the wide range of fields related to next generation networks. Containing the co

NETWORKING 2002: Networking Technologies, Services, and Protocols; Performance of Computer and Communication Networks; Mobile and Wireless Communications Enrico Gregori 2007-06-30 This book constitutes the refereed proceedings of the Second IFIP-TC6 Netw- king Conference, Networking 2002. Networking 2002 was sponsored bythe IFIP Working Groups 6.2, 6.3, and 6.8. For this reason the conference was structured into three tracks: i) Networking Technologies, Services, and Protocols, ii) Perf- mance of Computer and Communication Networks, and iii) Mobile and Wireless Communications. This year the

conference received 314 submissions coming from 42 countries from all 7 continents Africa (4), Asia (84), America (63), Europe (158), and Oceania (5). This represents a 50% increase in submissions over the first conference, thus indicating that Networking is becoming a reference conference for worldwide researchers in the networking community. With so many papers to choose from, the job of the Technical Program Committee, to provide a conference program of the highest technical excellence, was both challenging and time consuming. From the 314 submissions, we finally selected 82 full papers for presentation during the conference technical sessions. To give young researchers and researchers from emerging countries the opportunity to present their work and to receive useful feedback from participants, we decided to include two poster sessions during the technical program. Thirty-one short papers were selected for presentation during the poster sessions. The conference technical program was split into three days, and included, in addition to the 82 refereed contributions, 5 invited papers from top-level researchers in the networking community.

High-performance Communication Networks Jean Walrand 2000 A comprehensive view of networking technologies, their future directions, economic drivers for network growth, and analytical techniques to help get the most out of network resources. The book is very well written, and will be extremely valuable to practitioners and researchers alike. Bharat Doshi, Lucent Technologies In a field where the rapid development of technology has made complete coverage in a single text almost impossible, this book is an exception. It represents a singular accomplishment of clarity, precision, accuracy, and topical currency. Its friendly style is complemented by insights, breadth, and a unique blend of traditional and innovative presentation. Anthony Ephremides, University of Maryland The second edition covers new technologies that have emerged in the last few years. I have successfully used it in teaching at Stanford University. I believe this book is also very useful to a wide range of professionals who are trying to keep pace with the rapid developments in the field. Nicholas Bambos, Stanford University By focusing on the convergence of the telephone, computer networking, cable TV, and wireless industries, this fully revised second edition explains current and emerging networking technologies. The authors proceed from fundamental principles to develop a comprehensive understanding of network architectures, protocols, control, performance, and economics. Communications engineers, computer scientists, and network administrators and managers will appreciate the book for its perspectives on the innovations that impact their work. Students will be enriched by the descriptive and thorough coverage of networking, giving them the knowledge to explore rewarding career opportunities. Features Provides the most recent information on wide and local area networks, including WDM and optical networks, Fast and Gigabit Ethernet access networks, such as cable modems and DSL; approaches for quality-differentiated services in IP and ATM networks. Examines the Internet, including proposed advances for improved performance and quality of service. Presents a comprehensive discussion of wireless networks for voice and data. Explains the economic factors and technical tradeoffs that guide network development. Derives (in self-contained sections) the most important mathematical results of network performance

Resource, Mobility, and Security Management in Wireless Networks and Mobile Communications Yan Zhang 2006-10-25 Organized into three parts, Resource, Mobility, and Security Management in Wireless Networks and Mobile Communications examines the inherent constraint of limited bandwidth and unreliable time-varying physical link in the wireless system, discusses the demand to realize the service continuity in the single-hop or multi-hop wireless networks, and explores trusted communication in mobile computing scenarios. Focusing on the background, technique survey, protocol design, and analytical methods, the book discusses standards in 802.11x/3G/4G, HotSpot Wireless, Bluetooth sensor networks, and access control in wireless Ad Hoc networks. Other topics include call admission control (CAC), routing, multicast, medium access control (MAC), scheduling, bandwidth adaptation, handoff management, location management, network mobility, secure routing, key management, authentication, security, privacy, and performance simulation and analysis. This book is a comprehensive source of information on basic concepts, major issues, design approaches, future research directions, and the interaction between these components. With its broad coverage allowing for easy cross reference, the book also provides detailed techniques for eliminating bandwidth insufficiency, increasing location management performance, and decreasing the associated authentication traffic. Features: Offers competitive, self-contained information on resource, mobility, and security management in wireless networks Explains the interaction and coupling among the most important components in wireless networks Examines background, applications, and standard protocols Addresses challenges and solutions in key management of wireless sensor networks Covers how to provide effective and efficient authentication and key agreements for cellular access security

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Computer and Communication Networks Nader F. Mir 2014-12-12 Computer and Communication Networks, Second Edition, explains the modern technologies of networking and communications, preparing you to analyze and simulate complex networks, and to design cost-effective networks for emerging requirements. Offering uniquely balanced coverage of basic and advanced topics, it teaches through case studies, realistic examples and exercises, and intuitive illustrations. Nader F. Mir establishes a solid foundation in basic networking concepts; TCP/IP schemes; wireless and LTE networks; Internet applications, such as Web and e-mail; and network security. Then, he delves into both network analysis and advanced networking protocols, VoIP, cloud-based multimedia networking, SDN, and virtualized networks. In this new edition, Mir provides updated, practical, scenario-based information that many networking books lack, offering a uniquely effective blend of theory and implementation. Drawing on extensive field experience, he presents many contemporary applications and covers key topics that other texts overlook, including P2P and voice/video networking, SDN, information-centric networking, and modern router/switch design. Students, researchers, and networking professionals will find up-to-date, thorough coverage of Packet switching Internet protocols (including IPv6) Networking devices Links and link interfaces LANs, WANs, and Internetworking Multicast routing, and protocols Wide area wireless networks and LTE Transport and end-to-end protocols Network applications and management Network security Network queues and delay analysis Advanced router/switch architecture QoS and scheduling Tunneling, VPNs, and MPLS All-optical networks, WDM, and GMPLS Cloud computing and network virtualization Software defined networking (SDN) VoIP signaling Media exchange and voice/video compression Distributed/cloud-based multimedia networks Mobile ad hoc networks Wireless sensor networks Key features include More than three hundred fifty figures that simplify complex topics Numerous algorithms that summarize key networking protocols and equations Up-to-date case studies illuminating concepts and theory Approximately four hundred exercises and examples honed over Mir's twenty years of teaching networking

Probability, Statistics, and Random Processes For Electrical Engineering Alberto Leon-Garcia 2011-11-21 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. This is the standard textbook for courses on probability and statistics, not substantially updated. While helping students to develop their problem-solving skills, the author motivates students with practical applications from various areas of ECE that demonstrate the relevance of probability theory to engineering practice. Included are chapter overviews, summaries, checklists of important terms, annotated references, and a wide selection of fully worked-out real-world examples. In this edition, the Computer Methods sections have been updated and substantially enhanced and new problems have been added.

Smart Grid Communications and Networking Ekram Hossain 2012-05-24 This one-stop reference provides the state-of-the-art theory, key strategies, protocols, deployment aspects, standardization activities and experimental studies of communication and networking technologies for the smart grid. Expert authors provide all the essential information researchers need to progress in the field and to allow power systems engineers to optimize their communication systems.

Communication and Networking Dominik Slezak 2009-12-01 As future generation information technology (FGIT) becomes specialized and fragmented, it is easy to lose sight that many topics in FGIT have common threads and, because of this, advances in one discipline may be transmitted to others. Presentation of recent results obtained in different disciplines encourages this interchange for the advancement of FGIT as a whole. Of particular interest are hybrid solutions that combine ideas taken from multiple disciplines in order to achieve something more significant than the sum of the individual parts. Through such hybrid philosophy, a new principle can be discovered, which has the propensity to propagate throughout multifaceted disciplines. FGIT 2009 was the first mega-conference that attempted to follow the above idea of hybridization in FGIT in a form of multiple events related to particular disciplines of IT, conducted by separate scientific committees, but coordinated in order to expose the most important contributions. It included the following international conferences: Advanced Software Engineering and Its Applications (ASEA), Bio-Science and Bio-Technology (BSBT), Control and Automation (CA), Database Theory and Application (DTA), Disaster Recovery and Business Continuity (DRBC; published independently), Future Generation Communication and Networking (FGCN) that was combined with Advanced Communication and Networking (ACN), Grid and Distributed Computing (GDC), Multimedia, Computer Graphics and Broadcasting (MulGraB), Security Technology (SecTech), Signal Processing, Image Processing and Pattern Recognition (SIP), and e-Service, Science and Technology (UNESST).

The Electrical Engineering Handbook Wai Kai Chen 2004-11-16 The Electrical Engineer's Handbook is an invaluable reference source for all practicing electrical engineers and students. Encompassing 79 chapters, this book is intended to enlighten and refresh knowledge of the practicing engineer or to help educate engineering students. This text will most likely be the engineer's first choice in looking for a solution; extensive, complete references to other sources are provided throughout. No other book has the breadth and depth of coverage available here. This is a must-have for all practitioners and students! The Electrical Engineer's Handbook provides the most up-to-date information in: Circuits and Networks, Electric Power Systems, Electronics, Computer-Aided Design and Optimization, VLSI Systems, Signal Processing, Digital Systems and Computer Engineering, Digital Communication and Communication Networks, Electromagnetics and Control and Systems. About the Editor-in-Chief... Wai-Kai Chen is Professor and Head Emeritus of the Department of Electrical Engineering and Computer Science at the University of Illinois at Chicago. He has extensive experience in education and industry and is very active professionally in the fields of circuits and systems. He was Editor-in-Chief of the IEEE Transactions on Circuits and Systems, Series I and II, President of the IEEE Circuits and Systems Society and is the Founding Editor and Editor-in-Chief of the Journal of Circuits, Systems and Computers. He is the recipient of the Golden Jubilee Medal, the Education Award, and the Meritorious Service Award from the IEEE Circuits and Systems Society, and the Third Millennium Medal from the IEEE. Professor Chen is a fellow of the IEEE and the American Association for the Advancement of Science. * 77 chapters encompass the entire field of electrical engineering. * THOUSANDS of valuable figures, tables, formulas, and definitions. * Extensive bibliographic references.

Communication Networks Alberto Leon-Garcia 2006 . This book is designed for introductory one-semester or one-year courses in communications networks in upper-

level undergraduate programs. The second half of the book can be used in more advanced courses. As pre-requisites the book assumes a general knowledge of computer systems and programming, and elementary calculus. The second edition expands on the success of the first edition by updating on technological changes in networks and responding to comprehensive market feedback..

Ad Hoc Networks Shiwen Mao 2010-01-23 Ad hoc networks refer to the wireless networking paradigm that covers a variety of network forms for specific purposes, such as mobile ad hoc networks, sensor networks, vehicular networks, underwater networks, underground networks, personal area networks, and home networks. The various forms of ad hoc networks promise a broad scope of applications in civilian, commercial, and military areas, which have led to significant new research problems and challenges, and have attracted great efforts from academia, industry, and government. This unique networking paradigm necessitates re-examination of many established wireless networking concepts and protocols, and calls for developing new fundamental understanding of problems such as interference, mobility, connectivity, capacity, and security, among others. While it is essential to advance theoretical research on fundamentals and practical research on efficient algorithms and protocols, it is also critical to develop useful applications, experimental prototypes, and real-world deployments to achieve a practical impact on our society for the success of this networking paradigm. The annual International Conference on Ad Hoc Networks (AdHocNets) is a new event that aims at providing a forum to bring together researchers from academia as well as practitioners from industry and government to meet and exchange ideas and recent research work on all aspects of ad hoc networks. As the first edition of this event, AdHocNets 2009 was successfully held in Niagara Falls, Ontario, Canada, during September 22–25, 2009.

Communication Challenges and Solutions in the Smart Grid Fayçal Bouhafs 2014-10-31 This SpringerBrief discusses the rise of the smart grid from the perspective of computing and communications. It explains how current and next-generation network technology and methodologies help recognize the potential that the smart grid initiative promises. Chapters provide context on the smart grid before exploring specific challenges related to communication control and energy management. Topics include control in heterogeneous power supply, solutions for backhaul and wide area networks, home energy management systems, and technologies for smart energy management systems. Designed for researchers and professionals working on the smart grid, *Communication Challenges and Solutions in the Smart Grid* offers context and applications for the common issues of this developing technology. Advanced-level students interested in networking and communications engineering will also find the brief valuable.

Greening Video Distribution Networks Adrian Popescu 2018-01-29 This insightful text presents a guide to video distribution networks (VDNs), providing illuminating perspectives on reducing power consumption in IP-based video networks from an authoritative selection of experts in the field. A particular focus is provided on aspects of architectures, models, Internet protocol television (IPTV), over-the-top (OTT) video content, video on demand (VoD) encoding and decoding, mobile terminals, wireless multimedia sensor networks (WMSNs), software defined networking (SDN), and techno-economic issues. Topics and features: reviews the fundamentals of video over IP distribution systems, and the trade-offs between network/service performance and energy efficiency in VDNs; describes the characterization of the main elements in a video distribution chain, and techniques to decrease energy consumption in software-based VoD encoding; introduces an approach to reduce power consumption in mobile terminals during video playback, and in data center networks using the SDN paradigm; discusses the strengths and limitations of different methods for measuring the energy consumption of mobile devices; proposes optimization methods to improve the energy efficiency of WMSNs, and a routing algorithm that reduces energy consumption while maintaining the bandwidth; presents an economic analysis of the savings yielded by approaches to minimize energy consumption of IPTV and OTT video content services. The broad coverage and practical insights offered in this timely volume will be of great value to all researchers, practitioners and students involved with computer and telecommunication systems.?

Wireless Networking Based Control Sudip K. Mazumder 2010-11-25 This book will have a broad appeal in the area of Wireless Networking-Based Control. Various engineering disciplines, control and communication science organizations will be interested in purchasing the book with a new, emerging, and important theme. Also, industry such as Honeywell and those (e.g. power industry, automotive industry, aerospace industry) interested in implementing wireless network control to express interest in purchasing this book.

Wireless Communications Networks for the Smart Grid Quang-Dung Ho 2014-09-19 This brief presents a comprehensive review of the network architecture and communication technologies of the smart grid communication network (SGCN). It then studies the strengths, weaknesses and applications of two promising wireless mesh routing protocols that could be used to implement the SGCN. Packet transmission reliability, latency and robustness of these two protocols are evaluated and compared by simulations in various practical SGCN scenarios. Finally, technical challenges and open research opportunities of the SGCN are addressed. *Wireless Communications Networks for Smart Grid* provides communication network architects and engineers with valuable proven suggestions to successfully implement the SGCN. Advanced-level students studying computer science or electrical engineering will also find the content helpful.

Multimedia Services in Wireless Internet Lin Cai 2009-06-17 Learn how to provide seamless, high quality multimedia for the wireless Internet This book introduces the promising protocols for multimedia services and presents the analytical frameworks for measuring their performance in wireless networks. Furthermore, the book shows how to fine-tune the parameters for Quality of Service (QoS) provisioning in order to illustrate the effect that QoS has upon the stability, integrity and growth of next generation wireless Internet. In addition, the authors provide the tools required to implement this understanding. These tools are particularly useful for design and engineering network architecture and protocols for future wireless Internet. Additionally, the book provides a good overview of wireless networks, while also appealing to network researchers and engineers. Key Features: Provides a comprehensive and analytical understanding of the performance of multimedia services in wireless Internet, and the tools to implement such an understanding Addresses issues such as IEEE 802.11, AIMD/RED (Additive Increase-Multiplicative Decrease/ Random Early Detection), multimedia traffic models, congestion control and random access networks Investigates the impact of wireless characteristics on QoS constraint multimedia applications Includes a case study on AIMD for multimedia playback applications Features numerous examples, suggested reading and review questions for each chapter This book is an invaluable resource for postgraduate students undertaking courses in wireless networks and multimedia services, students studying advanced graduate courses in electrical engineering and computer science, and researchers and engineers in the field of wireless networks.

Encyclopedia of Networked and Virtual Organizations Putnik, Goran D. 2008-03-31 [Administration (référence électronique) ; informatique].

Enabling 5G Communication Systems to Support Vertical Industries Muhammad Ali Imran 2019-08-19 How 5G technology can support the demands of multiple vertical industries Recent advances in technology have created new vertical industries that are highly dependent on the availability and reliability of data between multiple locations. The 5G system, unlike previous generations, will be entirely data driven—addressing latency, resilience, connection density, coverage area, and other vertical industry criteria. *Enabling 5G Communication Systems to Support Vertical Industries* demonstrates how 5G communication systems can meet the needs unique to vertical industries for efficient, cost-effective delivery of service. Covering both theory and practice, this book explores solutions to problems in specific industrial sectors including smart transportation, smart agriculture, smart grid, environmental monitoring, and disaster management. The 5G communication system will have to provide customized solutions to accommodate each vertical industry's specific requirements. Whether an industry practitioner designing the next generation of wireless communications or a researcher needing to identify open issues and classify their research, this timely book: Covers the much-discussed topics of supporting multiple vertical industries and new ICT challenges Addresses emerging issues and real-world problems surrounding 5G technology in wireless communication and networking Explores a comprehensive array of essential topics such as connected health, smart transport, smart manufacturing, and more Presents important topics in a clear, concise style suitable for new learners and professionals alike Includes contributions from experts and industry leaders, system diagrams, charts, tables, and examples *Enabling 5G Communication Systems to Support Vertical Industries* is a valuable resource telecom engineers industry professionals, researchers, professors, doctorate, and postgraduate students requiring up-to-date information on supporting vertical industries with 5G technology systems.

Innovations and Interdisciplinary Solutions for Underserved Areas Cheikh M.F. Kebe 2018-08-29 This book constitutes the refereed post-conference proceedings of the Second International Conference on Innovations and Interdisciplinary Solutions for Underserved Areas, InterSol 2018, and the 7th Colloque National sur la Recherche en Informatique et ses Applications, CNRIA 2018, held in Kigali, Rwanda, in March 2018. The 23 papers presented were selected from 56 submissions and issue the following themes: papers dealing with the evolution of performances of solar systems in Africa, papers addressing the issues is public health, telecom papers studying the business model of telecommunication, math models presenting the climatic phenomenon and finally health papers dealing with medical devices that are suitable to underserved areas. The proceedings also contain 7 papers from the co-located 7th CNRIA (Colloque National sur la Recherche en Informatique et ses Applications) focusing on network architecture and security, software engineering, data management, and signal processing.