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Handbook of Wireless Local Area Networks - Mohammad Ilyas 2005-05-25
Handbook of Wireless Local Area Networks: Applications, Technology, Security, and Standards captures the current state of wireless LANs, and serves as the single comprehensive reference on the subject. Addressing challenges related to the further development of WLAN technology, the Handbook covers the entire spectrum of topics from basic concepts t
Fundamentals of Wireless Communication - David Tse 2005-05-26
This textbook takes a unified

view of the fundamentals of wireless communication and explains cutting-edge concepts in a simple and intuitive way. An abundant supply of exercises make it ideal for graduate courses in electrical and computer engineering and it will also be of great interest to practising engineers.

Wireless Communications - Andrea Goldsmith 2005-08-08

Wireless technology is a truly revolutionary paradigm shift, enabling multimedia communications between people and devices from any location. It also underpins exciting applications such as sensor networks, smart homes, telemedicine, and automated highways. This book provides a comprehensive introduction to the underlying theory, design techniques and analytical tools of wireless communications, focusing primarily on the core principles of wireless system design. The book begins with an overview of wireless systems and standards. The characteristics of the wireless channel are then described, including their fundamental capacity limits. Various modulation, coding, and signal processing schemes are then discussed in detail, including state-of-the-art adaptive modulation, multicarrier, spread spectrum, and multiple antenna techniques. The concluding chapters deal with multiuser communications, cellular system design, and ad-hoc network design. Design insights and tradeoffs are emphasized throughout the book. It contains many worked examples, over 200 figures, almost 300 homework exercises, over 700 references, and is an ideal textbook for students.

Millimeter Wave Wireless Communications - Theodore S. Rappaport 2015

The Definitive, Comprehensive Guide to Cutting-Edge Millimeter Wave Wireless Design “This is a great book on mmWave systems that covers many aspects of the technology targeted for beginners all the way to the advanced users. The authors are some of the most credible scholars I know of who are well respected by the

industry. I highly recommend studying this book in detail." —Ali Sadri, Ph.D., Sr. Director, Intel Corporation, MCG mmWave Standards and Advanced Technologies Millimeter wave (mmWave) is today's breakthrough frontier for emerging wireless mobile cellular networks, wireless local area networks, personal area networks, and vehicular communications. In the near future, mmWave products, systems, theories, and devices will come together to deliver mobile data rates thousands of times faster than today's existing cellular and WiFi networks. In Millimeter Wave Wireless Communications, four of the field's pioneers draw on their immense experience as researchers, entrepreneurs, inventors, and consultants, empowering engineers at all levels to succeed with mmWave. They deliver exceptionally clear and useful guidance for newcomers, as well as the first complete desk reference for design experts. The authors explain mmWave signal propagation, mmWave circuit design, antenna designs, communication theory, and current standards (including IEEE 802.15.3c, Wireless HD, and ECMA/WiMedia). They cover comprehensive mmWave wireless design issues, for 60 GHz and other mmWave bands, from channel to antenna to receiver, introducing emerging design techniques that will be invaluable for research engineers in both industry and academia. Topics include Fundamentals: communication theory, channel propagation, circuits, antennas, architectures, capabilities, and applications Digital communication: baseband signal/channel models, modulation, equalization, error control coding, multiple input multiple output (MIMO) principles, and hardware architectures Radio wave propagation characteristics: indoor and outdoor applications Antennas/antenna arrays, including on-chip and in-package antennas, fabrication, and packaging Analog circuit design: mmWave

transistors, fabrication, and transceiver design approaches Baseband circuit design: multi–gigabit-per-second, high-fidelity DAC and ADC converters Physical layer: algorithmic choices, design considerations, and impairment solutions; and how to overcome clipping, quantization, and nonlinearity Higher-layer design: beam adaptation protocols, relaying, multimedia transmission, and multiband considerations 60 GHz standardization: IEEE 802.15.3c for WPAN, Wireless HD, ECMA-387, IEEE 802.11ad, Wireless Gigabit Alliance (WiGig)

Cellular and mobile communication - Balamurali

Resource Allocation in Uplink OFDMA Wireless Systems - Elias Yaacoub 2012-02-10 Tackling problems from the least complicated to the most, Resource Allocation in Uplink OFDMA Wireless Systems provides readers with a comprehensive look at resource allocation and scheduling techniques (for both

single and multi-cell deployments) in uplink OFDMA wireless networks—relying on convex optimization and game theory to thoroughly analyze performance. Inside, readers will find topics and discussions on: Formulating and solving the uplink ergodic sum-rate maximization problem Proposing suboptimal algorithms that achieve a close performance to the optimal case at a considerably reduced complexity and lead to fairness when the appropriate utility is used Investigating the performance and extensions of the proposed suboptimal algorithms in a distributed base station scenario Studying distributed resource allocation where users take part in the scheduling process, and considering scenarios with and without user collaboration Formulating the sum-rate maximization problem in a multi-cell scenario, and proposing efficient centralized and distributed algorithms for intercell interference mitigation Discussing the applicability of the proposed techniques to state-of-the-art wireless technologies, LTE and WiMAX, and proposing relevant extensions Along with schematics and figures featuring simulation results, Resource Allocation in Uplink OFDMA Wireless Systems is a valuable book for?wireless communications and cellular systems professionals and students.

Mobile Computing and Wireless Communications - Amjad Umar 2004

This book, suitable for IS/IT courses and self study, presents a comprehensive coverage of the technical as well as business/management aspects of mobile computing and wireless communications. Instead of one narrow topic, this classroom tested book covers the major building blocks (mobile applications, mobile computing platforms, wireless networks, architectures, security, and management) of mobile computing and wireless communications. Numerous real-life case studies and examples highlight the key

points. The book starts with a discussion of m-business and m-government initiatives and examines mobile computing applications such as mobile messaging, m-commerce, M-CRM, M-portals, M-SCM, mobile agents, and sensor applications. The role of wireless Internet and Mobile IP is explained and the mobile computing platforms are analyzed with a discussion of wireless middleware, wireless gateways, mobile application servers, WAP, i-mode, J2ME, BREW, Mobile Internet Toolkit, and Mobile Web Services. The wireless networks are discussed at length with a review of wireless communication principles, wireless LANs with emphasis on 802.11 LANs, Bluetooth, wireless sensor networks, UWB (Ultra Wideband), cellular networks ranging from 1G to 5G, wireless local loops, FSO (Free Space Optics), satellites communications, and deep space networks. The book concludes with a review of the architectural, security, and management/support issues and their role in building, deploying and managing wireless systems in modern settings.

Coverage Control in Sensor Networks - Bang Wang 2010-01-11

The advances in sensor design have decreased the size, weight, and cost of sensors by orders of magnitude, yet with the increase of higher spatial and temporal re- lution and accuracy. With the fast progress of sensors design and communications technique, sensor networks have also been quickly evolving in both research and practical domains in the last decade. More and more sensor networks have been - ployed in real-world to gather information for our daily life. Applications of sensor networks can be found in battle?eld surveillance, environmental monitoring, b-logical detection, smart spaces, industrial diagnostics, etc. Although the technique of sensor networks has a very promising future, many challenges are still deserving lots of research efforts for its

successful applications. Thisbookisdevotedtocoveragecontrol,oneofthemostfundamentalandimportant research issues in sensor networks. The aim of the book is to provide tutorial-like and up-to-date reference resources on various coverage control problems in sensor networks, a hot topic that has been intensively researched in recent years. Due to some unique characteristics of sensor networks such as energy constraint and - hoc topology, the coverage problems in sensor networks have many new scenarios and features that entitle them an important research issue in recent years. I have done my best to include in the book the most recent advances, techniques, protocols, results, and ?ndings in this ?eld.

The Handbook of Mobile Middleware - Paolo Bellavista 2016-04-19

Device miniaturization, wireless computing, and mobile communication are driving ubiquitous, pervasive, and transparent computing. Supporting these rapidly evolving technologies requires middleware solutions that address connectivity-level, location-dependent, and context-dependent issues. The Handbook of Mobile Middleware is an exhaustive overview of recent developments in the various fields related to this infrastructure software. Authored by internationally recognized experts, this advanced reference integrates valuable insight gained from actual system deployments. It begins by presenting mobile middleware requirements and technologies, then offers solutions organized by such challenges as mobility/disconnection handling, location-based support, and context-based support. This volume focuses on the application domains in which mobile middleware has demonstrated its feasibility and effectiveness and details the pros, cons, and trade-offs of each solution. The book also analyzes future directions of mobile applications, including wearable computing,

ubiquitous entertainment, and context-dependent distribution.

Planning and Optimisation of 3g and 4g Wireless Networks - J. I. Agbinya 2010-02-15

Packed with details of the technologies that support each network type, this cutting-edge reference leads the reader step by step on how to plan and optimize various types of wireless networks. It examines current and emerging network planning and enhancement techniques.

Indoor Wireless Communications - Alejandro Aragón-Zavala 2017-07-03

Indoor Wireless Communications: From Theory to Implementation provides an in-depth reference for design engineers, system planners and post graduate students interested in the vastly popular field of indoor wireless communications. It contains wireless applications and services for in-building scenarios and knowledge of key elements in the design and implementation of these systems. Technologies such as Wireless Local Area Networks, Bluetooth, ZigBee, Indoor Optical Communications, WiMAX, UMTS and GSM for indoor environments are fully explained and illustrated with examples. Antennas and propagation issues for in-building scenarios are also discussed, emphasizing models and antenna types specifically developed for indoor communications. An exhaustive survey on indoor wireless communication equipment is also presented, covering all available technologies including antennas, distribution systems, transceivers and base stations.

Proceedings of International Conference on Human Machine Interaction 2013 (HMI 2013) - Kokula Krishna Hari K, Ramaraj N, Mohamed Salim BOUHLEL

OFDM Baseband Receiver Design for Wireless Communications - Tzi-Dar Chiueh 2008-04-15

Orthogonal frequency-division multiplexing (OFDM) access schemes are becoming more

prevalent among cellular and wireless broadband systems, accelerating the need for smaller, more energy efficient receiver solutions. Up to now the majority of OFDM texts have dealt with signal processing aspects. To address the current gap in OFDM integrated circuit (IC) instruction, Chiueh and Tsai have produced this timely text on baseband design. OFDM Baseband Receiver Design for Wireless Communications covers the gamut of OFDM technology, from theories and algorithms to architectures and circuits. Chiueh and Tsai give a concise yet comprehensive look at digital communications fundamentals before explaining modulation and signal processing algorithms in OFDM receivers. Moreover, the authors give detailed treatment of hardware issues -- from design methodology to physical IC implementation. Closes the gap between OFDM theory and implementation Enables the reader to transfer communication receiver concepts into hardware design wireless receivers with acceptable implementation loss achieve low-power designs Contains numerous figures to illustrate techniques Features concrete design examples of MC-CDMA systems and cognitive radio applications Presents theoretical discussions that focus on concepts rather than mathematical derivation Provides a much-needed single source of material from numerous papers Based on course materials for a class in digital communication IC design, this book is ideal for advanced undergraduate or post-graduate students from either VLSI design or signal processing backgrounds. New and experienced engineers in industry working on algorithms or hardware for wireless communications devices will also find this book to be a key reference.

Technologies and Protocols for the Future of Internet Design: Reinventing the Web - Prakash Vidyarthi, Deo 2012-02-29

The Internet has changed significantly from its

beginnings as a simple network used to pass data from one computer to another. Containing essential tools for everyday information processing, the Internet is used by small and large organizations alike and continues to evolve with the changing information technology landscape. Technologies and Protocols for the Future of Internet Design: Reinventing the Web aims to provide relevant methods and theories in the area of the Internet design. It is written for the research community and professionals who wish to improve their understanding of future Internet technologies and gain knowledge of new tools and techniques in future Internet design.

Wireless Communications - Theodore S. Rappaport 2002
For cellular radio engineers and technicians. The leading book on wireless communications offers a wealth of practical information on the implementation realities of wireless communications. This book also contains up-to-date information on the major wireless communications standards from around the world. Covers every fundamental aspect of wireless communications, from cellular system design to networking, plus world-wide standards, including ETACS, GSM, and PDC. .

Antennas and Propagation for Wireless Communication Systems - Simon R. Saunders 2007-05-07
Antennas and propagation are of fundamental importance to the coverage, capacity and quality of all wireless communication systems. This book provides a solid grounding in antennas and propagation, covering terrestrial and satellite radio systems in both mobile and fixed contexts. Building on the highly successful first edition, this fully updated text features significant new material and brand new exercises and supplementary materials to support course tutors. A vital source of information for practising and aspiring wireless communication

engineers as well as for students at postgraduate and senior undergraduate levels, this book provides a fundamental grounding in the principles of antennas and propagation without excessive recourse to mathematics. It also equips the reader with practical prediction techniques for the design and analysis of a very wide range of common wireless communication systems. Including: Overview of the fundamental electromagnetic principles underlying propagation and antennas. Basic concepts of antennas and their application to specific wireless systems. Propagation measurement, modelling and prediction for fixed links, macrocells, microcells, picocells and megacells Narrowband and wideband channel modelling and the effect of the channel on communication system performance. Methods that overcome and transform channel impairments to enhance performance using diversity, adaptive antennas and equalisers. Key second edition updates: New chapters on Antennas for Mobile Systems and Channel Measurements for Mobile Radio Systems. Coverage of new technologies, including MIMO antenna systems, Ultra Wideband (UWB) and the OFDM technology used in Wi-Fi and WiMax systems. Many new propagation models for macrocells, microcells and picocells. Fully revised and expanded end-of-chapter exercises. The Solutions Manual can be requested from http://www.wiley.com/go/saunders_antennas_2e

Handbook of Research on Wireless Multimedia: Quality of Service and Solutions - Cranley, Nicola 2008-07-31

"This book highlights and discusses the underlying QoS issues that arise in the delivery of real-time multimedia services over wireless networks"--Provided by publisher.

Symmetry in Engineering Sciences II - Francisco G. Montoya 2020-12-16

This book presents a sample of

theoretical and practical advances in symmetry in multidisciplinary engineering applications. It covers several applications, such as mechanical analysis of tunnel lining, prediction methods for the ring damper used in gears, calibration methods for manipulators, design methods for wheel configurations of mobile robots, analysis of elastic plastic damaged zones, 3D printed corneal models, analysis of multibody system dynamic networks, structural elements in architecture, railway transportation, transportation of hazardous materials, cable-driven mechanisms, and image processing. The contributions included in this book describe the state-of-the-art advances in this field and demonstrate the possibilities of the study of symmetry in multidisciplinary applications in the field of engineering.

Reliability, Survivability and Quality of Large Scale Telecommunication Systems - Peter Stavroulakis 2003-09-11 Competition within the telecommunications companies is growing fiercer by the day. Therefore, it is vital to ensure a high level of quality and reliability within all telecommunications systems in order to guard against faults and the failure of components and network services. Within large scale systems such quality and reliability problems are ever higher. The metrics of Quality and Reliability have to date only been available in journals and technical reports of companies which have designed or produced major parts of systems used in large applications. This book provides a self-contained treatment enabling the reader to be able to produce, define and utilise the metrics of Quality and Reliability required for the design and implementation of a large application such as a world class event as the Olympic Games. An additional outcome is that this book can be used as a guide for producing an ISO standard for large scale Systems such as the Olympic Games. * Provides

presentations of techniques used for solving quality and reliability problems in telecommunications networks replete with illustrations of their applications to real-world services and world class events * Individual chapters written by respective international experts within their fields This will prove highly informative for Practising engineers, researchers and telecommunications professionals, academics and graduate students in telecommunications, standards bodies and organisations such as ISO.

Mobile Wireless Communications - Mischa Schwartz 2005

Publisher Description

Architectures of Small-Cell Networks and Interference Management - Duy Trong Ngo 2014-07-08

This Springer Brief presents the architectures of small-cell networks and recent advances in interference management. The key challenges and values of small cells are first introduced, followed by the reviews of various small-cell architectures and interference management techniques in both heterogeneous CDMA and heterogeneous OFDMA small-cell networks. New adaptive power control and dynamic spectrum access techniques are discussed to promote a harmonized coexistence of diverse network entities in both 3G and 4G small-cell networks. Analytically devised from optimization and game theories, autonomous solutions are shown to effectively manage the intra-tier and cross-tier interferences in small cells. Informative and practical, this Springer Brief is designed for researchers and professionals working in networking and resource management. The content is also valuable for advanced-level students interested in network communications and power allocation.

ANTENNAS AND PROPAGATION FOR WIRELESS COMMUNICATION SYSTEMS, 2ND ED - Alejandro Aragon-Zavala

2008-09
Market_Desc: Students - senior undergraduate and postgraduate Wireless communications engineers and antenna designers University lecturers Special Features: This authoritative second edition features the following updates, enabling this reference to remain a leading text in the area: · New chapter entitled Channel Measurements for Mobile Radio Systems· Fully revised and expanded exercises in each chapter· Solutions manual for access by course tutors· Presentation slides for revised contents will also be available online About The Book: Antennas and propagation are the key factors influencing the robustness and quality of the wireless communication channel. This book introduces the basic concepts and specific applications of antennas and propagation to wireless systems, covering terrestrial and satellite radio systems in both mobile and fixed contexts. It is a vital source of information for wireless communication engineers as well as for students at postgraduate or senior undergraduate levels.

Handbook of Position Location - Reza Zekavat 2019-03-06
A comprehensive review of position location technology — from fundamental theory to advanced practical applications Positioning systems and location technologies have become significant components of modern life, used in a multitude of areas such as law enforcement and security, road safety and navigation, personnel and object tracking, and many more. Position location systems have greatly reduced societal vulnerabilities and enhanced the quality of life for billions of people around the globe — yet limited resources are available to researchers and students in this important field. The Handbook of Position Location: Theory, Practice, and Advances fills this gap, providing a comprehensive overview of both fundamental and cutting-edge techniques and introducing practical methods

of advanced localization and positioning. Now in its second edition, this handbook offers broad and in-depth coverage of essential topics including Time of Arrival (TOA) and Direction of Arrival (DOA) based positioning, Received Signal Strength (RSS) based positioning, network localization, and others. Topics such as GPS, autonomous vehicle applications, and visible light localization are examined, while major revisions to chapters such as body area network positioning and digital signal processing for GNSS receivers reflect current and emerging advances in the field. This new edition: Presents new and revised chapters on topics including localization error evaluation, Kalman filtering, positioning in inhomogeneous media, and Global Positioning (GPS) in harsh environments Offers MATLAB examples to demonstrate fundamental algorithms for positioning and provides online access to all MATLAB code Allows practicing engineers and graduate students to keep pace with contemporary research and new technologies Contains numerous application-based examples including the application of localization to drone navigation, capsule endoscopy localization, and satellite navigation and localization Reviews unique applications of position location systems, including GNSS and RFID-based localization systems The Handbook of Position Location: Theory, Practice, and Advances is valuable resource for practicing engineers and researchers seeking to keep pace with current developments in the field, graduate students in need of clear and accurate course material, and university instructors teaching the fundamentals of wireless localization.

Routing Protocols and Architectural Solutions for Optimal Wireless Networks and Security - Singh, Dharm 2017-04-17

Networking capabilities have been significantly enhanced in recent years. With emerging

advancements in technology, wireless communication has increased exponentially. Routing Protocols and Architectural Solutions for Optimal Wireless Networks and Security is a comprehensive resource on the latest technological advancements in designing secure wireless networks and secure transmission of data, voice and video over wireless networks and other innovations. Featuring comprehensive coverage across a range of relevant topics such as network planning, radio resource allocation, and broadband wireless networks, this publication is an ideal reference source for network designers, industries, researchers, educators, and governments who are involved in designing and implementing security and wireless networks and applications.

Wireless Communications - Andreas F. Molisch 2012-02-06 "Professor Andreas F. Molisch, renowned researcher and educator, has put together the comprehensive book, Wireless Communications. The second edition, which includes a wealth of new material on important topics, ensures the role of the text as the key resource for every student, researcher, and practitioner in the field." —Professor Moe Win, MIT, USA Wireless communications has grown rapidly over the past decade from a niche market into one of the most important, fast moving industries. Fully updated to incorporate the latest research and developments, Wireless Communications, Second Edition provides an authoritative overview of the principles and applications of mobile communication technology. The author provides an in-depth analysis of current treatment of the area, addressing both the traditional elements, such as Rayleigh fading, BER in flat fading channels, and equalisation, and more recently emerging topics such as multi-user detection in CDMA systems, MIMO systems, and cognitive radio. The dominant wireless

standards; including cellular, cordless and wireless LANs; are discussed. Topics featured include: wireless propagation channels, transceivers and signal processing, multiple access and advanced transceiver schemes, and standardised wireless systems. Combines mathematical descriptions with intuitive explanations of the physical facts, enabling readers to acquire a deep understanding of the subject. Includes new chapters on cognitive radio, cooperative communications and relaying, video coding, 3GPP Long Term Evolution, and WiMax; plus significant new sections on multi-user MIMO, 802.11n, and information theory. Companion website featuring: supplementary material on 'DECT', solutions manual and presentation slides for instructors, appendices, list of abbreviations and other useful resources.

Modern Wireless Communications - Simon S. Haykin 2011

Wireless Communications - Theodore S. Rappaport 1996 Building on his classic edition, Rappaport covers the fundamental issues impacting all wireless networks and reviews virtually every important new wireless standard and technological development. He illustrates each key concept with practical examples, thoroughly explained and solved step by step.

Adaptive PHY-MAC Design for Broadband Wireless Systems - Ramjee Prasad 2022-09-01 The next generation mobile communication networks (4G) have the challenging target of The next generation mobile communication networks (4G) have the challenging target of providing a peak data rate of 1 Gigabit per second local area and 100 Megabit per second wide area. The ability to offer such high data rates in 100MHz bandwidth requires overall a very high spectral efficiency, and hence the need for multi-antenna techniques (MIMO) with spatial multiplexing, fast dynamic link adaptation and packet

scheduling, wideband access techniques, and most likely non-contention based spectrum sharing among multiple operators. Many of these required technology components and techniques are well researched and established. Adaptive PHY-MAC Design for Broadband Wireless Systems explains how one can integrate and optimise their use in providing the target cell data rates with high availability. The authors address the ability to cope with interference and enhanced physical layer processing, and simultaneously, the multifaceted system level design. Focus is also on the selection of technology components and techniques, which leads to the highest spectral efficiency and peak data rate availability with reasonable Quality of Service (QoS) support, such as improved outage scenario, reduced delay, guaranteed bit rate, etc.In short, this book will answer questions such as, how individual techniques relate to each other, how can we benefit the gains by suitable combinations of different technologies and how to choose different technological solutions in different scenarios, etc.The next generation mobile communication networks (4G) have the challenging target of The next generation mobile communication networks (4G) have the challenging target of providing a peak data rate of 1 Gigabit per second local area and 100 Megabit per second wide area.

Wireless Communication Systems - Ke-Lin Du 2010-04-15

This practically-oriented, all-inclusive guide covers all the major enabling techniques for current and next-generation cellular communications and wireless networking systems. Technologies covered include CDMA, OFDM, UWB, turbo and LDPC coding, smart antennas, wireless ad hoc and sensor networks, MIMO, and cognitive radios, providing readers with everything they need to master wireless systems design in a single volume. Uniquely, a detailed introduction to the

properties, design, and selection of RF subsystems and antennas is provided, giving readers a clear overview of the whole wireless system. It is also the first textbook to include a complete introduction to speech coders and video coders used in wireless systems. Richly illustrated with over 400 figures, and with a unique emphasis on practical and state-of-the-art techniques in system design, rather than on the mathematical foundations, this book is ideal for graduate students and researchers in wireless communications, as well as for wireless and telecom engineers.

Wireless Communications Systems Architecture - Khaled Salah Mohamed 2022-10-31

This book discusses wireless communication systems from a transceiver and digital signal processing perspective. It is intended to be an advanced and thorough overview for key wireless communication technologies. A wide variety of wireless communication technologies, communication paradigms and architectures are addressed, along with state-of-the-art wireless communication standards. The author takes a practical, systems-level approach, breaking up the technical components of a wireless communication system, such as compression, encryption, channel coding, and modulation. This book combines hardware principles with practical communication system design. It provides a comprehensive perspective on emerging 5G mobile networks, explaining its architecture and key enabling technologies, such as M-MIMO, Beamforming, mmWaves, machine learning, and network slicing. Finally, the author explores the evolution of wireless mobile networks over the next ten years towards 5G and beyond (6G), including use-cases, system requirements, challenges and opportunities.

Short-Range Optical Wireless - Mohsen Kavehrad 2016-01-19

This book discusses the

fundamental aspects of multiple-source Optical Wireless Applications, including Visible Light Communications (VLC). Moreover, the authors explore VLC performance in several conventional household layouts and investigate the impact of these layouts on VLC. Multiple sources increase multipath distortion. Multi-input- Multi-Output (MIMO) techniques will be included as they provide either reliability improvement or bandwidth efficiency increase. Based on these topics, the book further explores VLC performance in real applications, such as aircraft cabin wireless communications. In addition, the authors describe the Lambertian emitting pattern of LEDs and the diffused features in indoor environments. Based on the theory, they trace light pulses to establish a MIMO indoor wireless channel model on specific sources layout. Next, they generate test data to simulate BER distribution in a room and calculate the outage. Furthermore, addresses the performance improvement when MIMO techniques are applied. Lastly, the authors investigate VLC performance in specific applications, including for aircraft on-board wireless communications. Finally, the pitfalls of MIMO systems are discussed.

Proceedings of the Eleventh International Network Conference (INC 2016) - Paul Dowland 2016

This book contains the proceedings of the Eleventh International Network Conference (INC 2016), which was held in Frankfurt, Germany, in July 2016. A total of 30 papers were accepted for inclusion in the conference. The main topics of the book include: Network Technologies; Mobile and Wireless Networking; Security and Privacy; Applications and Impacts. The papers address state-of-the-art research and applications of network technology, arising from both the academic and industrial domains. These proceedings should consequently be of

interest to network practitioners, researchers, academics, and technical managers involved in the design, development and use of network systems.

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..

Middleware Solutions for Wireless Internet of Things - Paolo Bellavista 2019-07-15

The proliferation of powerful but cheap devices, together with the availability of a plethora of wireless technologies, has pushed for the spread of the Wireless Internet of Things (WIoT), which is typically much more heterogeneous, dynamic, and general-purpose if compared with the traditional IoT. The WIoT is characterized by the dynamic interaction of traditional infrastructure-side devices, e.g., sensors and actuators, provided by municipalities in Smart City infrastructures, and other portable and more opportunistic ones, such as mobile smartphones, opportunistically integrated to dynamically extend and enhance the WIoT environment. A key enabler of this vision is the advancement of software and middleware technologies in various mobile-related sectors, ranging from the effective synergic management of wireless communications to mobility/adaptivity support in operating systems and differentiated integration and management of devices with heterogeneous capabilities in middleware, from horizontal support to crowdsourcing in

different application domains to dynamic offloading to cloud resources, only to mention a few. The book presents state-of-the-art contributions in the articulated WIoT area by providing novel insights about the development and adoption of middleware solutions to enable the WIoT vision in a wide spectrum of heterogeneous scenarios, ranging from industrial environments to educational devices. The presented solutions provide readers with differentiated point of views, by demonstrating how the WIoT vision can be applied to several aspects of our daily life in a pervasive manner.

Wireless Security: Models, Threats, and Solutions - Randall K. Nichols 2002

Nichols and Lekkas uncover the threats and vunerablilities unique to the wireless communication, telecom, broadband, and satellite markets. They provide an overview of current commercial security solutions available on the open market.

Solutions Manual Wireless Communications - Zhigang Rong 2009-11-01

Algorithms and Protocols for Wireless and Mobile Ad Hoc Networks - Azzedine Boukerche 2008-11-03

Learn the fundamental algorithms and protocols for wireless and mobile ad hoc networks Advances in wireless networking and mobile communication technologies, coupled with the proliferation of portable computers, have led to development efforts for wireless and mobile ad hoc networks. This book focuses on several aspects of wireless ad hoc networks, particularly algorithmic methods and distributed computing with mobility and computation capabilities. It covers everything readers need to build a foundation for the design of future mobile ad hoc networks: Establishing an efficient communication infrastructure Robustness control for network-wide broadcast The taxonomy of routing algorithms Adaptive backbone multicast routing The

effect of inference on routing Routing protocols in intermittently connected mobile ad hoc networks and delay tolerant networks Transport layer protocols ACK-thinning techniques for TCP in MANETs Power control protocols Power saving in solar powered WLAN mesh networks Reputation and trust-based systems Vehicular ad hoc networks Cluster interconnection in 802.15.4 beacon enabled networks The book is complemented with a set of exercises that challenge readers to test their understanding of the material. Algorithms and Protocols for Wireless and Mobile Ad Hoc Networks is appropriate as a self-study guide for electrical engineers, computer engineers, network engineers, and computer science specialists. It also serves as a valuable supplemental textbook in computer science, electrical engineering, and network engineering courses at the advanced undergraduate and graduate levels.

Signal Processing for Mobile Communications Handbook - Mohamed Ibnkahla 2004-08-16 In recent years, a wealth of research has emerged addressing various aspects of mobile communications signal processing. New applications and services are continually arising, and future mobile communications offer new opportunities and exciting challenges for signal processing. The Signal Processing for Mobile Communications Handbook provi

Fundamentals of Multimedia - Ze-Nian Li 2021-03-20 PREVIOUS EDITIONThis textbook introduces the "Fundamentals of Multimedia", addressing real issues commonly faced in the workplace. The essential concepts are explained in a practical way to enable students to apply their existing skills to address problems in multimedia. Fully revised and updated, this new edition now includes coverage of such topics as 3D TV, social networks, high-efficiency video compression and conferencing,

wireless and mobile networks, and their attendant technologies. Features: presents an overview of the key concepts in multimedia, including color science; reviews lossless and lossy compression methods for image, video and audio data; examines the demands placed by multimedia communications on wired and wireless networks; discusses the impact of social media and cloud computing on information sharing and on multimedia content search and retrieval; includes study exercises at the end of each chapter; provides supplementary resources for both students and instructors at an associated website.

FUNDAMENTALS OF MOBILE COMPUTING, Second Edition - PATTNAIK, PRASANT KUMAR 2015-11-30 This textbook, now in its Second Edition, addresses the rapid advancements to the area of mobile computing. Almost every chapter has been revised to make the book up to date with the latest developments. It covers the main topics associated with mobile computing and wireless networking at a level that enables the students to develop a fundamental understanding of the technical issues involved in this new and fast emerging discipline. This book first examines the basics of wireless technologies and computer communications that form the essential infrastructure required for building knowledge in the area of mobile computations involving the study of invocation mechanisms at the client end, the underlying wireless communication, and the corresponding server-side technologies. It includes coverage of development of mobile cellular systems, protocol design for mobile networks, special issues involved in the mobility management of cellular system users, realization and applications of mobile ad hoc networks (MANETs), design and operation of sensor networks, special constraints and requirements of mobile operating systems, and

development of mobile computing applications. Finally, an example application of the mobile computing infrastructure to M-commerce is described in the concluding chapter of the book. The book is suitable for a one-semester course in mobile computing for the undergraduate students of Computer Science and Engineering, Information Technology, Electronics and Communication Engineering, Master of Computer Applications (MCA), and the undergraduate and postgraduate science courses in computer science and Information Technology. Key Features • Provides unified coverage of mobile computing and communication aspects • Discusses the mobile application development, mobile operating systems and mobile databases as part of the material devoted to mobile computing • Incorporates a survey of mobile operating systems and the latest developments