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MIMO Systems Hossein Khaleghi Bizaki 2011-04-04 In recent years, it was realized that the MIMO communication systems seems to be inevitable in accelerated evolution of high data rates applications due to their potential to dramatically increase the spectral efficiency and simultaneously sending individual information to the corresponding users in wireless systems. This book, intends to provide highlights of the current research topics in the field of MIMO system, to offer a snapshot of the recent advances and major issues faced today by the researchers in the MIMO related areas. The book is written by specialists working in universities and research centers all over the world to cover the fundamental principles and main advanced topics on high data rates wireless communications systems over MIMO channels. Moreover, the book has the advantage of providing a collection of applications that are completely independent and self-contained; thus, the interested reader can choose any chapter and skip to another without losing continuity.

Systems Approach for Development M. A. R. Ghonaimy 1977 Orthogonal Frequency Division Multiplexing with

Diversity for Future Wireless Systems Khoa N. Le 2012 "The book examines several aspects of Orthogonal Frequency Division Multiplexing (OFDM) employing linear diversity techniques such as inter-carrier interference, bit error rate, peak to average power and inter-block interference. It should be a useful refe"

Resource Management in Mobile Computing Environments Constandinos X. Mavromoustakis 2014-06-09 This book reports the latest advances on the design and development of mobile computing systems, describing their applications in the context of modeling, analysis and efficient resource management. It explores the challenges on mobile computing and resource management paradigms, including research efforts and approaches recently carried out in response to them to address future open-ended issues. The book includes 26 rigorously refereed chapters written by leading international researchers, providing the readers with technical and scientific information about various aspects of mobile computing, from basic concepts to advanced findings, reporting the state-of-the-art on resource management in such environments. It is mainly intended as a reference guide for researchers and practitioners involved in the design, development and applications of mobile computing systems, seeking solutions to related issues. It also represents a useful textbook for advanced undergraduate and graduate courses, addressing special topics such as: mobile and ad-hoc wireless networks; peer-to-peer systems for mobile computing; novel resource management techniques in cognitive radio networks; and power management in mobile computing systems.

Mobile WiMAX Sassan Ahmadi 2010-12-22 Presenting the new IEEE 802.16m standard, this is the first book to take a systematic, top-down approach to describing Mobile WiMAX and its next generation, giving detailed algorithmic

descriptions together with explanations of the principles behind the operation of individual air-interface protocols and network components. Features: A systematic and detailed, top-down approach to the design of 4G cellular systems based on IEEE 802.16m and 3GPP LTE/LTE-Advanced technologies A systematic approach to understanding IEEE 802.16m radio access network and mobile WiMAX network architecture and protocols The first comprehensive technical reference on the design, development and performance evaluation of IMT-Advanced systems, including the theoretical background and design principles as well as implementation considerations About the author: The author, chief architect and technical lead of the IEEE 802.16m project at Intel Corporation, initiated and masterminded the development of the IEEE 802.16m standard and has been one of the leading technical drivers in its standardization process in IEEE. The author was also a leading technical contributor to the definition and development of requirements and evaluation methodology for the IMT-Advanced systems in ITU-R. Reflecting the author's 20+ years expertise and experience, the book provides an in-depth, systematic and structured technical reference for professional engineers, researchers, and graduate students working in cellular communication systems, radio air-interface technologies, cellular communications protocols, advanced radio access technologies for 4G systems, and broadband cellular standards. A systematic and detailed, top-down approach to the design of 4G cellular systems based on IEEE 802.16m and 3GPP LTE/LTE-Advanced technologies A systematic approach to understanding IEEE 802.16m radio access network and mobile WiMAX network architecture and protocols The first comprehensive technical reference on the design, development and performance evaluation of IMT-Advanced systems, including the theoretical background and design principles as well as implementation considerations

Handbook of Research on Heterogeneous Next Generation Networking: Innovations and Platforms Kotsopoulos, Stavros 2008-10-31 "This book presents state-of-the-art research, developments, and integration activities in combined platforms of heterogeneous wireless networks"-- Provided by publisher.

Digital Home Networking Romain Carbou 2013-05-06 This much-needed book describes the digital home networking environment, its techniques, and the challenges around its service architecture. It provides a broad introduction to state-of-the-art digital home standards and protocols, as well as in-depth coverage of service architectures for entertainment and domestic services involving digital home resources. Topics include networking, remote access, security, interoperability, scalability, and quality of service. Notably, the book describes the generic architecture that was proposed and developed in the context of the EUREKA/Celtic research project Feel@Home.

Femtocells Jie Zhang 2011-09-26 This book provides an in-depth guide to femtocell technologies In this book,

the authors provide a comprehensive and organized explanation of the femtocell concepts, architecture, air interface technologies, and challenging issues arising from the deployment of femtocells, such as interference, mobility management and self-organization. The book details a system level simulation based methodology addressing the key concerns of femtocell deployment such as interference between femto and macrocells, and the performance of both femto and macrocell layers. In addition, key research topics in interference modeling and mitigation, mobility management and Self-Organizing Network (SON) are highlighted. The authors also introduce HNB/HeNB standardization in 3GPP.. Furthermore, access methods (closed, open and hybrid), applications, timing synchronization, health issues, business models and security are discussed. The authors also provide a comparison between femtocells and other indoor coverage techniques such as picocells, repeaters, distributed antenna systems and radio over fiber. Lastly, both CDMA and OFDMA based femtocells are covered. Key Features: Provides a comprehensive reference on femtocells and related topics Offers the latest research results on femtocells based on simulation and measurements Gives an overview of indoor coverage techniques such as picocells, repeaters, distributed antenna systems, radio over fiber and femtocells Includes chapters on femtocell access network architecture, air interface technologies (GSM, UMTS, HSPA, WiMAX and LTE), femtocell simulation, interference analysis and mitigation in femto/macrocell networks, mobility management in femto/macrocell networks, femtocell self-organization and other key challenges such as timing synchronization and security faced by femtocell deployment Points to over 240 references from 3GPP, The Femto Forum, journals and conference proceedings This book will be an invaluable guide for RF engineers from operators, R&D engineers from femtocells hardware manufacturers, employees from regulatory bodies, radio network planners, academics and researchers from universities and research organizations. Students undertaking wireless communications courses will also find this book insightful.

Error Control Coding for B3G/4G Wireless Systems Thierry Lestable 2011-03-10 Covering the fast evolving area of advanced coding, Error Control Coding for B3G/4G Wireless Systems targets IMT-Advanced systems to present the latest findings and implementation solutions. The book begins by detailing the fundamentals of advanced coding techniques such as Coding, Decoding, Design, and Optimization. It provides not only state-of-the-art research findings in 3D Turbo-codes, non-binary LDPC Codes, Fountain, and Raptor codes, but also insights into their real-world implementation by examining hardware architecture solutions, for example VLSI complexity, FPGA, and ASIC. Furthermore, special attention is paid to Incremental redundancy techniques, which constitute a key feature of Wireless Systems. A promising application of these advanced coding techniques, the Turbo-principle (also known as iterative processing), is illustrated through an in-depth discussion of Turbo-MIMO, Turbo-Equalization, and Turbo-Interleaving techniques. Finally, the book presents the status of major standardization activities currently implementing such techniques, with special interest in 3GPP UMTS, LTE, WiMAX, IEEE 802.11n, DVB-RCS, DVB-S2, and IEEE 802.22. As a result, the book coherently brings together academic and industry vision by providing readers with a uniquely comprehensive view of the whole topic, whilst also giving an understanding of leading-edge techniques. Includes detailed coverage of coding, decoding, design, and optimization approaches for advanced codes Provides up to date research findings from both highly reputed academics and industry standpoints Presents the latest status of

standardization activities for Wireless Systems related to advanced coding Describes real-world implementation aspects by giving insights into architecture solutions for both LDPC and Turbo-codes Examines the most advanced and promising concepts of turbo-processing applications: Turbo-MIMO, Turbo-Equalization, Turbo-Interleaving

Game Theory Framework Applied to Wireless Communication Networks Yang, Chungang 2015-08-26 The popularity of smart phones and other mobile devices has brought about major expansion in the realm of wireless communications. With this growth comes the need to improve upon network capacity and overall user experience, and game-based methods can offer further enhancements in this area. Game Theory Framework Applied to Wireless Communication Networks is a pivotal reference source for the latest scholarly research on the application of game-theoretic approaches to enhance wireless networking. Featuring prevailing coverage on a range of topics relating to the advanced game model, mechanism designs, and effective equilibrium concepts, this publication is an essential reference source for researchers, students, technology developers, and engineers. This publication features extensive, research-based chapters across a broad scope of relevant topics, including potential games, coalition formation game, heterogeneous networks, radio resource allocation, coverage optimization, distributed dynamic resource allocation, dynamic spectrum access, physical layer security, and cooperative video transmission.

Green IT Engineering: Social, Business and Industrial Applications Vyacheslav Kharchenko 2018-09-29 This book describes the implementation of green IT in various human and industrial domains. Consisting of four sections: "Development and Optimization of Green IT", "Modelling and Experiments with Green IT Systems", "Industry and Transport Green IT Systems", "Social, Educational and Business Aspects of Green IT", it presents results in two areas – the green components, networks, cloud and IoT systems and infrastructures; and the industry, business, social and education domains. It discusses hot topics such as programmable embedded and mobile systems, sustainable software and data centers, Internet servicing and cyber social computing, assurance cases and lightweight cryptography in context of green IT. Intended for university students, lecturers and researchers who are interested in power saving and sustainable computing, the book also appeals to engineers and managers of companies that develop and implement energy efficient IT applications.

The Business of WiMAX Deepak Pareek 2006-05-01 WiMAX holds great promise for the future of broadband communications. Companies and consumers are increasingly dependent on broadband and are committed to taking broadband to the next level with mobile broadband or 802.16e, the WiMAX standard. The Business of WiMAX offers a complete guide to this exciting technology, addressing the critical issues surrounding WiMAX and its future. The author discusses the need for the technology, before explaining its architecture and deployment, modulation technology, wireless standards, spectrum issues, and network topology. Applications and the market for these are covered in-depth, and the exciting future of WiMAX is discussed. The book provides strategy and recommendations for achieving success in such a dynamic scenario. The Business of WiMAX: Offers a uniquely balanced business and technology perspective on the critical issues surrounding WiMAX and its place in the evolving broadband wireless industry. Explains the need, use, market, trends, business models, and the future road map for WiMAX technology. Provides strategy and recommendations to a variety of different players, including service providers, equipment manufacturers and chip makers. Supports practical insights with numerous examples and real-world case studies. This text is essential reading for professionals, strategists, leaders, researchers, analysts, investors and others in

the IT and Telecoms domain. Managers planning to deploy wireless networked computing devices in their organisations, ICT consultants, business strategists, systems engineers and architects, and final year undergraduate and postgraduate students and academics will also find this an invaluable guide to WiMax.

Neutrosophic approach for enhancing quality of signals

Sudan Jha Information in a signal is often followed by undesirable disturbance which is termed as noise.

Preventing noise in the signal leads to signal integrity, which also leads to better signal quality. The previous related works have the major issues while reducing noise in signals regarding assumptions, frequency and time domain, etc. This paper proposes a new Neutrosophic approach to reduce noises and errors in signal transmission.

Encyclopedia of Information Science and Technology,

Third Edition Khosrow-Pour, Mehdi 2014-07-31 "This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

Advances in Signal Processing and Intelligent

Recognition Systems Sabu M. Thampi 2014-02-14 This edited volume contains a selection of refereed and revised papers originally presented at the International Symposium on Signal Processing and Intelligent Recognition Systems (SIRS-2014), March 13-15, 2014, Trivandrum, India. The program committee received 134 submissions from 11 countries. Each paper was peer reviewed by at least three or more independent referees of the program committee and the 52 papers were finally selected. The papers offer stimulating insights into Pattern Recognition, Machine Learning and Knowledge-Based Systems; Signal and Speech Processing; Image and Video Processing; Mobile Computing and Applications and Computer Vision. The book is directed to the researchers and scientists engaged in various field of signal processing and related areas.

Current Technology Developments of WiMax Systems Lin Ma

2009-01-16 Recent developments on wireless communication technology have resulted in tremendous innovations to make broadband wireless networks able to compete with 3G cellular network. IEEE 802.16X standards have not only specified WiMax wireless access networks but also designed a framework of wireless metropolitan area networks with mobility functionality. It is obvious that with further development of various WiMax technologies, wide range of high-quality, flexible wireless mobile applications and services could be provided, which will revolutionarily improve our modern life to achieve the goal of accessing the global information at any place and at any time by any mobile device in the future.

Current Technology Developments of WiMax Systems addresses the recent developments of WiMax technologies for both academia and industry. It is expected to be a good reference for further research and development on WiMax systems.

Game Theory Applications in Network Design Kim, Sungwook

2014-05-31 The use of game theoretic techniques is playing an increasingly important role in the network design domain. Understanding the background, concepts, and principles in using game theory approaches is necessary for engineers in network design. Game Theory Applications in Network Design provides the basic idea of game theory and the fundamental understanding of game theoretic interactions among network entities. The material in this book also covers recent advances and open issues, offering game theoretic solutions for specific network design issues. This publication will benefit students, educators, research strategists, scientists, researchers, and engineers in the field of

network design.

Ad-hoc, Mobile, and Wireless Networks Antonio Puliafito 2017-09-13 This book constitutes the refereed proceedings of the 16th International Conference on Ad-hoc, Mobile, and Wireless Networks, ADHOC-NOW 2017, held in Messina, Italy, in September 2017. The 22 full and 9 short papers presented in this volume were carefully reviewed and selected from 55 submissions. The contributions were organized in topical sections named: internet of things; security; smart city; ad-hoc networks; implementations and validations; wireless sensor networks; data management; wireless systems. Handbook of Research on Mobile Multimedia, Second Edition Khalil, Ismail 2008-09-30 "The book is intended to clarify the hype, which surrounds the concept of mobile multimedia through introducing the idea in a clear and understandable way, with a strong focus on mobile solutions and applications"--Provided by publisher.

Journal of Zhejiang University 2006

WiMAX Syed A. Ahson 2018-10-08 As the demand for broadband services continues to grow worldwide, traditional solutions, such as digital cable and fiber optics, are often difficult and expensive to implement, especially in rural and remote areas. The emerging WiMAX system satisfies the growing need for high data-rate applications such as voiceover IP, video conferencing, interactive gaming, and multimedia streaming. WiMAX deployments not only serve residential and enterprise users but can also be deployed as a backhaul for Wi-Fi hotspots or 3G cellular towers. By providing affordable wireless broadband access, the technology of WiMAX will revolutionize broadband communications in the developed world and bridge the digital divide in developing countries. Part of the WiMAX Handbook, this volume focuses on the standards and security issues of WiMAX. The book examines standardized versus proprietary solutions for wireless broadband access, reviews the core medium access control protocol of WiMAX systems, and presents carriers' perspectives on wireless services. It also discusses the main mobility functions of the IEEE 802.16e standard, describes how to speed up WiMAX handover procedures, presents the 802.16 mesh protocol, and surveys the testing and certification processes used for WiMAX products. In addition, the book reviews the security features of both IEEE 802.16 and WiMAX. With the revolutionary technology of WiMAX, the lives of many will undoubtedly improve, thereby leading to greater economic empowerment.

Ubiquitous Networking Nouredine Boudriga 2018-11-12 This book constitutes the refereed proceedings of the 4th International Symposium on Ubiquitous Networking, UNet 2018, held in Hammamet, Morocco, in May 2018. The 35 full papers presented together with 5 short papers in this volume were carefully reviewed and selected from 87 submissions. The focus of UNet is on technical challenges and solutions related to such a widespread adoption of networking technologies, including broadband multimedia, machine-to-machine applications, Internet of things, security and privacy, data engineering, sensor networks and RFID technologies.

Image Processing and Capsule Networks Joy Iong-Zong Chen

2020-07-23 This book emphasizes the emerging building block of image processing domain, which is known as capsule networks for performing deep image recognition and processing for next-generation imaging science. Recent years have witnessed the continuous development of technologies and methodologies related to image processing, analysis and 3D modeling which have been implemented in the field of computer and image vision. The significant development of these technologies has led to an efficient solution called capsule networks [CapsNet] to solve the intricate challenges in recognizing complex image poses, visual tasks, and object deformation. Moreover, the breakneck growth of

computation complexities and computing efficiency has initiated the significant developments of the effective and sophisticated capsule network algorithms and artificial intelligence [AI] tools into existence. The main contribution of this book is to explain and summarize the significant state-of-the-art research advances in the areas of capsule network [CapsNet] algorithms and architectures with real-time implications in the areas of image detection, remote sensing, biomedical image analysis, computer communications, machine vision, Internet of things, and data analytics techniques.

Emergence of Cyber Physical System and IoT in Smart Automation and Robotics Krishna Kant Singh 2021-05-04
Cyber-Physical Systems (CPS) integrate computing and communication capabilities by monitoring and controlling the physical systems via embedded hardware and computers. This book brings together new and futuristic findings on IoT, Cyber Physical Systems and Robotics leading towards Automation and solving issues of various critical applications in Real-time. The book initially overviews the concepts of IoT, IIoT and Cyber Physical Systems followed by various critical applications and discusses the latest designs and developments that provide common solutions for the convergence of technologies. In addition, the book specifies methodologies, algorithms and other relevant architectures in various fields that include Automation, Robotics, Smart Agriculture and Industry 4.0. The book is intended for practitioners, enterprise representatives, scientists, students and Ph.D Scholars in hopes of steering research further towards cyber physical systems design and development and implementation across various domains. Additionally, this book can be used as a secondary reference, or rather one-stop guide, by professionals for real-life implementation of cyber physical systems. The book highlights: • A Critical Coverage of various domains: IoT, Cyber Physical Systems, Industry 4.0, Smart Automation and related critical applications. • Advanced elaborations for target audiences to understand the conceptual methodology and future directions of cyber physical systems and IoT. • An approach towards Research Orientations to enable researchers to point out areas and scope for implementation of Cyber Physical Systems in several domains for better productivity.

ICT Acceptance, Investment and Organization: Cultural Practices and Values in the Arab World Abdallah, Salam 2010-10-31 "This book is a unique source of information outlining the importance of Information Communication Technology (ICT) adoption and diffusion, covering the Arab world's strong need for access to information systems, while still paying close attention to their culture and localization of practices"--Provided by publisher.

New Knowledge in Information Systems and Technologies Álvaro Rocha 2019-03-29 This book includes a selection of articles from The 2019 World Conference on Information Systems and Technologies (WorldCIST'19), held from April 16 to 19, at La Toja, Spain. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and challenges in modern information systems and technologies research, together with their technological development and applications. The book covers a number of topics, including A) Information and Knowledge Management; B) Organizational Models and Information Systems; C) Software and Systems Modeling; D) Software Systems, Architectures, Applications and Tools; E) Multimedia Systems and Applications; F) Computer Networks, Mobility and Pervasive Systems; G) Intelligent and Decision Support Systems; H) Big Data Analytics and Applications; I) Human-Computer Interaction; J) Ethics, Computers & Security; K) Health Informatics; L) Information

Technologies in Education; M) Information Technologies in Radiocommunications; and N) Technologies for Biomedical Applications.

Information Systems Design and Intelligent Applications J. K. Mandal 2015-01-20 The second international conference on Information Systems Design and Intelligent Applications (INDIA – 2015) held in Kalyani, India during January 8-9, 2015. The book covers all aspects of information system design, computer science and technology, general sciences, and educational research. Upon a double blind review process, a number of high quality papers are selected and collected in the book, which is composed of two different volumes, and covers a variety of topics, including natural language processing, artificial intelligence, security and privacy, communications, wireless and sensor networks, microelectronics, circuit and systems, machine learning, soft computing, mobile computing and applications, cloud computing, software engineering, graphics and image processing, rural engineering, e-commerce, e-governance, business computing, molecular computing, nano-computing, chemical computing, intelligent computing for GIS and remote sensing, bio-informatics and bio-computing. These fields are not only limited to computer researchers but also include mathematics, chemistry, biology, bio-chemistry, engineering, statistics, and all others in which computer techniques may assist.

Advanced Microwave Circuits and Systems Vitaliy Zhurbenko 2010-04-01 This book is based on recent research work conducted by the authors dealing with the design and development of active and passive microwave components, integrated circuits and systems. It is divided into seven parts. In the first part comprising the first two chapters, alternative concepts and equations for multiport network analysis and characterization are provided. A thru-only de-embedding technique for accurate on-wafer characterization is introduced. The second part of the book corresponds to the analysis and design of ultra-wideband low-noise amplifiers (LNA).

Broadband Wireless Access Networks for 4G: Theory, Application, and Experimentation Santos, Raul Aquino 2013-12-31 With the increased functionality demand for mobile speed and access in our everyday lives, broadband wireless networks have emerged as the solution in providing high data rate communications systems to meet these growing needs. Broadband Wireless Access Networks for 4G: Theory, Application, and Experimentation presents the latest trends and research on mobile ad hoc networks, vehicular ad hoc networks, and routing algorithms which occur within various mobile networks. This publication smartly combines knowledge and experience from enthusiastic scholars and expert researchers in the area of wideband and broadband wireless networks. Students, professors, researchers, and other professionals in the field will benefit from this book's practical applications and relevant studies.

Radio Resource Management in Multi-Tier Cellular Wireless Networks Ekram Hossain 2013-12-09 Providing an extensive overview of the radio resource management problem in femtocell networks, this invaluable book considers both code division multiple access femtocells and orthogonal frequency-division multiple access femtocells. In addition to incorporating current research on this topic, the book also covers technical challenges in femtocell deployment, provides readers with a variety of approaches to resource allocation and a comparison of their effectiveness, explains how to model various networks using Stochastic geometry and shot noise theory, and much more.

Modelling, Computation and Optimization in Information Systems and Management Sciences Le Thi Hoai An 2008-10-25 Constitutes the refereed proceedings of the Second International Conference MCO 2008, Metz, France, September 2008. This title organizes the papers in

topical sections on optimization and decision making; data mining theory, systems and applications; computer vision and image processing; and computer communications and networks.

Green IT Engineering: Components, Networks and Systems Implementation Vyacheslav Kharchenko 2017-04-11 This book presents modern approaches to improving the energy efficiency, safety and environmental performance of industrial processes and products, based on the application of advanced trends in Green Information Technologies (IT) Engineering to components, networks and complex systems (software, programmable and hardware components, communications, Cloud and IoT-based systems, as well as IT infrastructures). The book's 16 chapters, prepared by authors from Greece, Malaysia, Russia, Slovakia, Ukraine and the United Kingdom, are grouped into four sections: (1) The Green Internet of Things, Cloud Computing and Data Mining, (2) Green Mobile and Embedded Control Systems, (3) Green Logic and FPGA Design, and (4) Green IT for Industry and Smart Grids. The book will motivate researchers and engineers from different IT domains to develop, implement and propagate green values in complex systems. Further, it will benefit all scientists and graduate students pursuing research in computer science with a focus on green IT engineering.

Radio Resources Management in WiMAX Emmanuelle Vivier 2013-03-28 WiMAX, the Worldwide Interoperability for Microwave Access, is a telecommunications technology aimed at providing wireless data over long distances in a variety of ways based on the IEEE 802.16 standard. This book presents radio resource management and performance analysis for WiMax by using PRM (Performance Resource Management). Providing a balance between academic and manufacturer contributors, the title offers different standpoints that can satisfy a reader looking for theoretical analysis and advanced algorithms or searching for their concrete application in the early deployment of Wimax. The title also demonstrates the importance of relaying to WiMax based on both research and standardization. Illustrated by many simulation results, this book will increase the reader's knowledge of WiMax and provide an up-to-date outlook of the R&D activities currently undergone in the broadband wireless system area.

TV White Space Spectrum Technologies Rashid Abdelhaleem Saeed 2016-04-19 Although sophisticated wireless radio technologies make it possible for unlicensed wireless devices to take advantage of un-used broadcast TV spectra, those looking to advance the field have lacked a book that covers cognitive radio in TV white spaces (TVWS). Filling this need, *TV White Space Spectrum Technologies: Regulations, Standards and Applications* *WiMAX/MobileFi* Yang Xiao 2007-12-10 WiMAX is bringing about a worldwide revolution in broadband wireless access, including both fixed and mobile handsets. The IEEE 802.16 working group standardized most aspects of WiMAX signaling messages. However, several algorithms were left unspecified opening the door for innovations in protocol engineering for 802.16/802.20-based broadband wireless.

Mobile Communications Handbook Jerry D. Gibson 2017-12-19 With 26 entirely new and 5 extensively revised chapters out of the total of 39, the *Mobile Communications Handbook, Third Edition* presents an in-depth and up-to-date overview of the full range of wireless and mobile technologies that we rely on every day. This includes, but is not limited to, everything from digital cellular mobile radio and evolving personal communication systems to wireless data and wireless networks. Illustrating the extraordinary evolution of wireless communications and networks in the last 15 years, this book is divided into five sections: *Basic Principles* provides the essential underpinnings for the wide-ranging mobile communication technologies currently

in use throughout the world. *Wireless Standards* contains technical details of the standards we use every day, as well as insights into their development. *Source Compression and Quality Assessment* covers the compression techniques used to represent voice and video for transmission over mobile communications systems as well as how the delivered voice and video quality are assessed. *Wireless Networks* examines the wide range of current and developing wireless networks and wireless methodologies. *Emerging Applications* explores newly developed areas of vehicular communications and 60 GHz wireless communications. Written by experts from industry and academia, this book provides a succinct overview of each topic, quickly bringing the reader up to date, but with sufficient detail and references to enable deeper investigations. Providing much more than a "just the facts" presentation, contributors use their experience in the field to provide insights into how each topic has emerged and to point toward forthcoming developments in mobile communications.

Emerging Trends in Computing, Informatics, Systems Sciences, and Engineering Tarek Sobh 2012-08-14 *Emerging Trends in Computing, Informatics, Systems Sciences, and Engineering* includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Industrial Electronics, Technology & Automation, Telecommunications and Networking, Systems, Computing Sciences and Software Engineering, Engineering Education, Instructional Technology, Assessment, and E-learning. This book includes the proceedings of the International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE 2010). The proceedings are a set of rigorously reviewed world-class manuscripts presenting the state of international practice in Innovative Algorithms and Techniques in Automation, Industrial Electronics and Telecommunications.

Wireless Virtualization Heming Wen 2013-08-28 This SpringerBriefs is an overview of the emerging field of wireless access and mobile network virtualization. It provides a clear and relevant picture of the current virtualization trends in wireless technologies by summarizing and comparing different architectures, techniques and technologies applicable to a future virtualized wireless network infrastructure. The readers are exposed to a short walkthrough of the future Internet initiative and network virtualization technologies in order to understand the potential role of wireless virtualization in the broader context of next-generation ubiquitous networks. Three main wireless virtualization perspectives are explored, along with the potential challenges and requirements of a sustainable wireless virtualization framework. Finally, it presents an example of a multi-perspective wireless virtualization framework. The readers learn the latest concepts in the application of wireless virtualization as well as its relationship with cutting-edge wireless technologies such as software-defined radio (SDR) and cognitive radio.

LTE Communications and Networks Masood Ur Rehman 2018-06-11 A comprehensive resource to the latest developments of system enhancement techniques of Femtocells, power management, interference mitigation and antenna design *LTE Communications and Networks* fills a gap in the literature to offer a comprehensive review of the most current developments of LTE Femtocells and antennas and explores their future growth. With contributions from a group of experts that represent the fields of wireless communications and mobile communications, signal processing and antenna design, this text identifies technical challenges and presents recent results related to the development, integration and enhancement of LTE systems in portable devices. The authors examine topics such as application of cognitive radio with efficient sensing mechanisms, interference

mitigation and power management schemes for the LTE systems. They also provide a comprehensive account of design challenges and approaches, performance enhancement techniques and effects of user's presence on the LTE antennas. LTE Communications and Networks also highlights the promising technologies of multiband, multimode and reconfigurable antennas for efficient design of portable LTE devices. Designed to be a practical resource, this text: Explores the interference mitigation, power control and spectrum management in LTE Femtocells and related issues Contains information on the design challenges, different approaches, performance enhancement and application case scenarios for the LTE antennas Covers the most recent developments of system enhancement techniques in terms of Femtocells, power management, interference mitigation and antenna design Includes contributions from leading experts in the field Written for industry professionals and researchers, LTE Communications and Networks is a groundbreaking book that presents a comprehensive treatment to the LTE

systems in the context of Femtocells and antenna design and covers the wide range of issues related to the topic.

Foundation of Cognitive Radio Systems Samuel Cheng
2012-03-16 The fast user growth in wireless communications has created significant demands for new wireless services in both the licensed and unlicensed frequency spectra. Since many spectra are not fully utilized most of the time, cognitive radio, as a form of spectrum reuse, can be an effective means to significantly boost communications resources. Since its introduction in late last century, cognitive radio has attracted wide attention from academics to industry. Despite the efforts from the research community, there are still many issues of applying it in practice. This book is an attempt to cover some of the open issues across the area and introduce some insight to many of the problems. It contains thirteen chapters written by experts across the globe covering topics including spectrum sensing fundamental, cooperative sensing, spectrum management, and interaction among users.