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Communications, Signal Processing, and Systems - Qilian Liang 2019-05-04
This book brings together papers from the 2018 International Conference on Communications, Signal Processing, and Systems, which was held in Dalian, China on July 14–16, 2018. Presenting the latest developments and discussing the interactions and links between these multidisciplinary fields, the book spans topics ranging from communications, signal processing and systems. It is aimed at undergraduate and graduate electrical engineering, computer science and mathematics students, researchers and engineers from academia and industry as well as government employees.
Noises in Optical Communications and Photonic Systems - Le Nguyen Binh 2016-11-17
Transmitting information over optical fibers requires a high degree of signal integrity due to noise levels existing in optical systems. Proper methods and techniques for noise evaluations are critical in achieving high-performance. This book provides a fundamental understanding of noise generation processes in optical communications and photonic signals. It discusses techniques for noise evaluation in optical communication systems, especially digital optical systems, as well as transmission systems performance and noise impacts in photonic processing systems
Full-Duplex Wireless Communications Systems - Tho Le-Ngoc 2017-07-02
This book introduces the development of self-interference (SI)-cancellation techniques for full-duplex wireless communication systems. The authors rely on estimation theory and signal processing to develop SI-cancellation algorithms by generating an estimate of the received SI and subtracting it from the received signal. The authors also cover two new SI-cancellation methods using the new concept of active signal injection (ASI) for full-duplex MIMO-OFDM systems. The ASI approach adds an appropriate cancelling signal to each transmitted signal such that the combined signals from transmit antennas attenuate the SI at the receive antennas. The authors illustrate that the SI-pre-cancelling signal does not affect the data-bearing signal. This book is for researchers and professionals working in wireless communications and engineers willing to understand the challenges of deploying full-duplex and practical solutions to implement a full-duplex system. Advanced-level students in electrical engineering and computer science studying wireless communications will also find this book useful as a secondary textbook.
Ambient Communications and Computer Systems - Gregorio Martinez Perez 2018-03-20
This book includes high-quality, peer-reviewed papers from the International Conference on Recent Advancement in Computer, Communication and Computational Sciences (RACCCS-2017), held at Aryabhatta College of Engineering & Research Center, Ajmer, India on September 2–3, 2017, presenting the latest developments and technical solutions in computational sciences. Data science, data- and knowledge engineering require networking and communication as a backbone and have a wide

scope of implementation in engineering sciences. Keeping this ideology in mind, the book offers insights that reflect the advances in these fields from upcoming researchers and leading academicians across the globe. Covering a variety of topics, such as intelligent hardware and software design, advanced communications, intelligent computing technologies, advanced software engineering, the web and informatics, and intelligent image processing, it helps those in the computer industry and academia use the advances of next-generation communication and computational technology to shape real-world applications.

Enabling Technologies for High Spectral-efficiency Coherent Optical Communication Networks - Xiang Zhou 2016-04-11

Enabling Technologies for High Spectral-efficiency Coherent Optical Communication Networks Presents the technological advancements that enable high spectral-efficiency and high-capacity fiber-optic communication systems and networks This book examines key technology advances in high spectral-efficiency fiber-optic communication systems and networks, enabled by the use of coherent detection and digital signal processing (DSP). The first of this book's 16 chapters is a detailed introduction. Chapter 2 reviews the modulation formats, while Chapter 3 focuses on detection and error correction technologies for coherent optical communication systems. Chapters 4 and 5 are devoted to Nyquist-WDM and orthogonal frequency-division multiplexing (OFDM). In chapter 6, polarization and nonlinear impairments in coherent optical communication systems are discussed. The fiber nonlinear effects in a non-dispersion-managed system are covered in chapter 7. Chapter 8 describes linear impairment equalization and Chapter 9 discusses various nonlinear mitigation techniques. Signal synchronization is covered in Chapters 10 and 11. Chapter 12 describes the main constraints put on the DSP algorithms by the hardware structure. Chapter 13 addresses the fundamental concepts and recent progress of photonic integration. Optical performance monitoring and elastic optical network technology are the subjects of Chapters 14 and 15. Finally, Chapter 16 discusses spatial-division multiplexing and MIMO processing technology, a potential solution to solve the capacity limit of single-mode fibers. Contains basic theories and up-to-date technology advancements in each chapter Describes how capacity-approaching coding schemes based on low-density parity check (LDPC) and spatially coupled LDPC codes can be constructed by combining iterative demodulation and decoding Demonstrates that fiber nonlinearities can be accurately described by some analytical models, such as GN-EGN model Presents impairment equalization and mitigation techniques Enabling Technologies for High Spectral-efficiency Coherent Optical Communication Networks is a reference for researchers, engineers, and graduate students.

Fundamentals of Signal Processing in Metric Spaces with Lattice Properties - Andrey Popoff 2017-11-03

Exploring the interrelation between information theory and signal processing theory, the book contains a new algebraic approach to signal processing theory. Readers will learn this new approach to constructing the unified mathematical fundamentals of both information theory and signal processing theory in addition to new methods of evaluating quality indices of signal processing. The book discusses the methodology of synthesis and analysis of signal processing algorithms providing qualitative increase of signal processing efficiency under parametric and nonparametric prior uncertainty conditions. Examples are included throughout the book to further emphasize new material.

Magnetic Communications: From Theory to Practice - Fei Hu 2018-07-24

This book covers comprehensively the theories and practical design of magnetic communications. It emphasizes the differences between it and RF communications. It first provides the models and signal propagation principles of magnetic communication systems. Then it describes the hardware architecture of the system, including transmitter, MODEM, inductors, coils, etc. Then, it discusses the corresponding communication software design principles and cases. Finally, it presents several types of practical implementations and applications.

Communication System Design Using DSP Algorithms - Steven A. Tretter 2012-12-06

Designed for senior electrical engineering

students, this textbook explores the theoretical concepts of digital signal processing and communication systems by presenting laboratory experiments using real-time DSP hardware. The experiments are designed for the Texas Instruments TMS320C6701 Evaluation Module or TMS320C6711 DSK but can easily be adapted to other DSP boards. Each chapter begins with a presentation of the required theory and concludes with instructions for performing experiments to implement the theory. In the process of performing the experiments, students gain experience in working with software tools and equipment commonly used in industry.

The Proceedings of the Third International Conference on Communications, Signal Processing, and Systems - Jiasong Mu 2015-06-12

The Proceedings of The Third International Conference on Communications, Signal Processing and Systems provides the state-of-art developments of Communications, Signal Processing and Systems. The conference covered such topics as wireless communications, networks, systems, signal processing for communications. This book is a collection of contributions coming out of Third International Conference on Communications, Signal Processing and Systems held on July 2014 in Hohhot, Inner Mongolia, China.

Algorithms for Communications Systems and their Applications - Nevio Benvenuto 2021-01-12

The definitive guide to problem-solving in the design of communications systems In Algorithms for Communications Systems and their Applications, 2nd Edition, authors Benvenuto, Cherubini, and Tomasin have delivered the ultimate and practical guide to applying algorithms in communications systems. Written for researchers and professionals in the areas of digital communications, signal processing, and computer engineering, Algorithms for Communications Systems presents algorithmic and computational procedures within communications systems that overcome a wide range of problems facing system designers. New material in this fully updated edition includes: MIMO systems (Space-time block coding/Spatial multiplexing /Beamforming and interference management/Channel Estimation) OFDM and SC-FDMA (Synchronization/Resource allocation (bit and power loading)/Filtered OFDM) Improved radio channel model (Doppler and shadowing/mmWave) Polar codes (including practical decoding methods) 5G systems (New Radio architecture/initial access for mmWave/physical channels) The book retains the essential coding and signal processing theoretical and operative elements expected from a classic text, further adopting the new radio of 5G systems as a case study to create the definitive guide to modern communications systems.

Proceedings of the Second International Conference on Computer and Communication Technologies - Suresh Chandra Satapathy 2015-09-04

The book is about all aspects of computing, communication, general sciences and educational research covered at the Second International Conference on Computer & Communication Technologies held during 24-26 July 2015 at Hyderabad. It hosted by CMR Technical Campus in association with Division – V (Education & Research) CSI, India. After a rigorous review only quality papers are selected and included in this book. The entire book is divided into three volumes. Three volumes cover a variety of topics which include medical imaging, networks, data mining, intelligent computing, software design, image processing, mobile computing, digital signals and speech processing, video surveillance and processing, web mining, wireless sensor networks, circuit analysis, fuzzy systems, antenna and communication systems, biomedical signal processing and applications, cloud computing, embedded systems applications and cyber security and digital forensic. The readers of these volumes will be highly benefited from the technical contents of the topics.

Networked Systems - Amr El Abbadi 2017-05-11

This book constitutes the thoroughly refereed conference proceedings of the 5th International Conference on Networked Systems, NETYS 2017, held in Marrakech, Morocco, in May 2017. The 28 full and 6 short papers presented together with 3 keynotes were carefully reviewed and selected from 81 submissions. They are organized around the following topics:

networking; distributed algorithms; atomicity; security and privacy; software engineering; concurrency and specifications; policies; agreement and consensus; clustering based techniques; verification; communication.

Cyber Security Cryptography and Machine Learning - Itai Dinur 2018-06-16

This book constitutes the refereed proceedings of the Second International Symposium on Cyber Security Cryptography and Machine Learning, CSCML 2018, held in Beer-Sheva, Israel, in June 2018. The 16 full and 6 short papers presented in this volume were carefully reviewed and selected from 44 submissions. They deal with the theory, design, analysis, implementation, or application of cyber security, cryptography and machine learning systems and networks, and conceptually innovative topics in the scope.

Discrete Event Systems, Manufacturing Systems, and Communication Networks - P.R. Kumar 2012-12-06

This IMA Volume in Mathematics and its Applications DISCRETE EVENT SYSTEMS, MANUFACTURING SYSTEMS AND COMMUNICATION NETWORKS is based on the proceedings of a workshop that was an integral part of the 1992-93 IMA program on "Control Theory. " The study of discrete event dynamical systems (DEDS) has become rapidly popular among researchers in systems and control, in communication networks, in manufacturing, and in distributed computing. This development has created problems for re searchers and potential "consumers" of the research. The first problem is the veritable Babel of languages, formalisms, and approaches, which makes it very difficult to determine the commonalities and distinctions among the competing schools of approaches. The second, related, problem arises from the different traditions, paradigms, values, and experience that scholars bring to their study of DEDS, depending on whether they come from control, com munication, computer science, or mathematical logic. As a result, intellectual exchange among scholars becomes compromised by unexplicated assumptions. The purpose of the Workshop was to promote exchange among scholars representing some of the major "schools" of thought in DEDS with the hope that (1) greater clarity will be achieved thereby, and (2) cross-fertilization will lead to more fruitful questions. We thank P. R. Kumar and P. P. Varaiya for organizing the workshop and editing the proceedings. We also take this opportunity to thank the National Science Foundation and the Army Research Office, whose financial support made the workshop possible. A vner Friedman Willard Miller, Jr.

Amplify-and-Forward Relaying in Wireless Communications - Leonardo Jiménez Rodríguez 2015-05-22

This SpringerBrief explores the advantage of relaying techniques in addressing the increasing demand for high data rates and reliable services over the air. It demonstrates how to design cost-effective relay systems that provide high spectral efficiency and fully exploit the diversity of the relay channel. The brief covers advances in achievable rates, power allocation schemes, and error performance for half-duplex (HD) and full-duplex (FD) amplify-and-forward (AF) single-relay systems. The authors discuss the capacity and respective optimal power allocation for a wide range of HD protocols over static and fading channels. Then, optimal amplification coefficients in terms of achievable rate are presented. Chapters also examine performance with finite constellations, including the error and diversity performance. The brief concludes with a capacity and error performance analysis of the FD relay mode of operation, where the residual self-interference due to FD transmission is explicitly taken into account. Amplify-and-Forward Relaying in Wireless Communications reveals the benefits and challenges of relaying techniques. It is designed for researchers and professionals in wireless communication. This material is also appropriate for advanced-level students in electrical engineering and computer science.

Instructional Systems - [Anonymus AC06534878] 1973

Contemporary Communication Systems Using MATLAB - John G. Proakis 2012-07-19

Featuring a variety of applications that motivate students, this book serves as a companion or supplement to any of the comprehensive textbooks in communication systems. The book provides a variety of exercises that may be solved on the computer using MATLAB. By design, the treatment of the various topics is

brief. The authors provide the motivation and a short introduction to each topic, establish the necessary notation, and then illustrate the basic concepts by means of an example. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

MATLAB/Simulink for Digital Communication - Won Y. Yang 2018-03-02

Theory and Design of Digital

Communication Systems - Tri T. Ha 2010-10-28
Providing the underlying principles of digital communication and the design techniques of real-world systems, this textbook prepares senior undergraduate and graduate students for the engineering practices required in industry. Covering the core concepts, including modulation, demodulation, equalization, and channel coding, it provides step-by-step mathematical derivations to aid understanding of background material. In addition to describing the basic theory, the principles of system and subsystem design are introduced, enabling students to visualize the intricate connections between subsystems and understand how each aspect of the design supports the overall goal of achieving reliable communications. Throughout the book, theories are linked to practical applications with over 250 real-world examples, whilst 370 varied homework problems in three levels of difficulty enhance and extend the text material. With this textbook, students can understand how digital communication systems operate in the real world, learn how to design subsystems, and evaluate end-to-end performance with ease and confidence.
Data Communication Systems and Their Performance - G. Pujolle 2014-05-23
The research papers in this volume describe recent, original developments in techniques, tools and applications in the area of communication system performance. Involved in the project are researchers from the world's leading universities, research institutes and companies.
Personal Wireless Communications - Pedro Cuenca 2006-09-30
This book constitutes the refereed proceedings of the IFIP-TC6 11th International Conference on Personal Wireless Communications, PWC 2006. The book presents 25 revised full papers and 13 revised short papers, carefully reviewed and selected from 100 submissions. The papers are organized in topical sections on mobile and wireless networking, QoS, ad-hoc, security, wireless LAN, cross-layer design, wireless sensor networks, physical layer, and mobile and wireless applications.
Digital Communications Systems - North Atlantic Treaty Organization. Advisory Group for Aerospace Research and Development. Sensor and Propagation Panel. Symposium 1996

Fading and Shadowing in Wireless Systems - P. Mohana Shankar 2011-12-06
The author explores the impediments to efficient wireless transmission and techniques and proposes ways to mitigate these problems. Problems presented include both fading and shadowing, which increase the possibility of outrage in wireless systems.
Proceedings of the Eleventh National Conference on Communications - 2005

Index Modulation for OFDM Communications Systems - Miaowen Wen 2021-01-04
Thanks to their considerable advantages, index modulation and orthogonal frequency division multiplexing (OFDM) are considered to be promising candidates for future wireless communications. This book focuses on the index modulation techniques for OFDM communications systems, which allow information to be conveyed not only via constellation symbols, but also by the indices of various transmission entities in OFDM systems, such as signal constellations, spreading codes, and pilots. The book discusses representative transmitter and receiver designs, optimization and performance analysis of index modulation based on various transmission entities. It first introduces readers to constellation-based index modulation via a combinatorial approach, including the classical index modulation scheme and two embodiments of information-guided precoding for OFDM systems. It further discusses constellation-based index modulation via a permutational approach, including the basic, generalized, and diversity-enhancing forms. It then describes how the spreading code is used to design an index modulated spread spectrum for OFDM systems, and the extensions to multi-code and multi-user scenarios. In addition it explores information guided pilot insertion for OFDM systems, followed by applications to carrier phase tracking and channel estimation. Lastly, the book highlights a number of open problems and discusses future research directions in the general field of index modulation. Intended for professionals and researchers in the field of wireless

communications, this book is also a valuable resource for advanced-level electrical engineering and computer science students.

Intelligent Information and Database Systems - Manh Thanh Le 2010-03-05

The 2010 Asian Conference on Intelligent Information and Database Systems (ACIIDS) was the second event of the series of international scientific conferences for research and applications in the field of intelligent information and database systems. The aim of ACIIDS 2010 was to provide an international forum for scientific research in the technologies and applications of intelligent information, database systems and their applications. ACIIDS 2010 was co-organized by Hue University (Vietnam) and Wroclaw University of Technology (Poland) and took place in Hue city (Vietnam) during March 24–26, 2010. We received almost 330 papers from 35 countries. Each paper was peer reviewed by at least two members of the International Program Committee and International Reviewer Board. Only 96 best papers were selected for oral presentation and publi- tion in the two volumes of the ACIIDS 2010 proceedings. The papers included in the proceedings cover the following topics: artificial social systems, case studies and reports on deployments, collaborative learning, collaborative systems and applications, data warehousing and data mining, database management technologies, database models and query languages, database security and integrity,- business, e-commerce, e-finance, e-learning systems, information modeling and - quirements engineering, information retrieval systems, intelligent agents and mul- agent systems, intelligent information systems, intelligent internet systems, intelligent optimization techniques, object-relational DBMS, ontologies and information sharing, semi-structured and XML database systems, unified modeling language and unified processes, Web services and Semantic Web, computer networks and communication systems.

Distributed Fusion Estimation for Sensor Networks with Communication Constraints - Wen-An Zhang 2016-05-27

This book systematically presents energy-efficient robust fusion estimation methods to achieve thorough and comprehensive results in the context of network-based fusion estimation. It summarizes recent findings on fusion estimation with communication constraints; several novel energy-efficient and robust design methods for dealing with energy constraints and network-induced uncertainties are presented, such as delays, packet losses, and asynchronous information... All the results are presented as algorithms, which are convenient for practical applications.

Digital Optical Communications - Le Nguyen Binh 2008-11-20

The need for advanced transmission techniques over long haul optically amplified communications has prompted a convergence of digital and optical communications. Digital Optical Communications explores the practical applications of this union and applies digital modulation techniques to optical communications systems.After reviewing the fundamental

Optical Fiber Communication Systems with MATLAB® and Simulink® Models - Le Nguyen Binh 2014-12-01

Carefully structured to instill practical knowledge of fundamental issues, Optical Fiber Communication Systems with MATLAB® and Simulink® Models describes the modeling of optically amplified fiber communications systems using MATLAB® and Simulink®. This lecture-based book focuses on concepts and interpretation, mathematical procedures, and engineering applications, shedding light on device behavior and dynamics through computer modeling. Supplying a deeper understanding of the current and future state of optical systems and networks, this Second Edition: Reflects the latest developments in optical fiber communications technology Includes new and updated case studies, examples, end-of-chapter problems, and MATLAB® and Simulink® models Emphasizes DSP-based coherent reception techniques essential to advancement in short- and long-term optical transmission networks Optical Fiber Communication Systems with MATLAB® and Simulink® Models, Second Edition is intended for use in university and professional training courses in the specialized field of optical communications. This text should also appeal to students of engineering and science who have already taken courses in

electromagnetic theory, signal processing, and digital communications, as well as to optical engineers, designers, and practitioners in industry.

Communication and Agreement Abstractions for Fault-Tolerant Asynchronous Distributed Systems - Michel Raynal 2022-06-01

Understanding distributed computing is not an easy task. This is due to the many facets of uncertainty one has to cope with and master in order to produce correct distributed software. Considering the uncertainty created by asynchrony and process crash failures in the context of message-passing systems, the book focuses on the main abstractions that one has to understand and master in order to be able to produce software with guaranteed properties. These fundamental abstractions are communication abstractions that allow the processes to communicate consistently (namely the register abstraction and the reliable broadcast abstraction), and the consensus agreement abstractions that allows them to cooperate despite failures. As they give a precise meaning to the words "communicate" and "agree" despite asynchrony and failures, these abstractions allow distributed programs to be designed with properties that can be stated and proved. Impossibility results are associated with these abstractions. Hence, in order to circumvent these impossibilities, the book relies on the failure detector approach, and, consequently, that approach to fault-tolerance is central to the book. Table of Contents: List of Figures / The Atomic Register Abstraction / Implementing an Atomic Register in a Crash-Prone Asynchronous System / The Uniform Reliable Broadcast Abstraction / Uniform Reliable Broadcast Abstraction Despite Unreliable Channels / The Consensus Abstraction / Consensus Algorithms for Asynchronous Systems Enriched with Various Failure Detectors / Constructing Failure Detectors

Cognitive Communications - David Grace 2012-10-01

This book discusses in-depth the concept of distributed artificial intelligence (DAI) and its application to cognitive communications In this book, the authors present an overview of cognitive communications, encompassing both cognitive radio and cognitive networks, and also other application areas such as cognitive acoustics. The book also explains the specific rationale for the integration of different forms of distributed artificial intelligence into cognitive communications, something which is often neglected in many forms of technical contributions available today. Furthermore, the chapters are divided into four disciplines: wireless communications, distributed artificial intelligence, regulatory policy and economics and implementation. The book contains contributions from leading experts (academia and industry) in the field. Key Features: Covers the broader field of cognitive communications as a whole, addressing application to communication systems in general (e.g. cognitive acoustics and Distributed Artificial Intelligence (DAI) Illustrates how different DAI based techniques can be used to self-organise the radio spectrum Explores the regulatory, policy and economic issues of cognitive communications in the context of secondary spectrum access Discusses application and implementation of cognitive communications techniques in different application areas (e.g. Cognitive Femtocell Networks (CFN) Written by experts in the field from both academia and industry Cognitive Communications will be an invaluable guide for research community (PhD students, researchers) in the areas of wireless communications, and development engineers involved in the design and development of mobile, portable and fixed wireless systems., wireless network design engineer. Undergraduate and postgraduate students on elective courses in electronic engineering or computer science, and the research and engineering community will also find this book of interest.

Discrete Communication Systems - Stevan Berber 2021-07-19

This is the first textbook which presents the theory of pure discrete communication systems and its relation to the existing theory of digital and analog communications at a graduate level. Based on the orthogonality principles and theory of discrete time stochastic processes, a generic structure of communication systems, based on correlation demodulation and optimum detection, is developed and presented in the

form of mathematical operators with precisely defined inputs and outputs and related functions. Based on this generic structure, the traditionally defined phase shift keying (PSK), frequency shift keying (FSK), quadrature amplitude modulation (QAM), orthogonal frequency division multiplexing (OFDM) and code division multiple access (CDMA) systems are deduced as its special cases. The main chapters, presenting the theory of communications, are supported by a set of supplementary chapters containing the theory of deterministic and stochastic signal processing, which makes the book a self-contained presentation of the subject. The book uses unified notation and unified terminology, which allows a clear distinction between deterministic and stochastic signals, power signals and energy signals, discrete time signals and processes and continuous time signals and processes, and an easy way of understanding the differences in defining the correlation functions, power and energy spectral densities, and amplitudes and power spectra of the mentioned signals and processes. In addition to solved examples in the text, about 300 solved problems are available to readers in the supplementary material that aim to enhance the understanding of the theory in the text. In addition, five research Projects are added to be used by lecturers or instructors that aim to enhance the understanding of theory and to establish its relation to the practice.

An improved system of telegraphic communications. (Continuation of the general vocabulary. Supplementary vocabulary.). - Thomas LYNN 1814

An Improved System of Telegraphic Communication - Thomas Lynn 1818

Feedback Strategies for Wireless Communication - Berna Özbek 2013-10-19

This book explores the different strategies regarding limited feedback information. The book analyzes the impact of quantization and the delay of CSI on the performance. The author shows the effect of the reduced feedback information and gives an overview about the feedback strategies in the standards. This volume presents theoretical analysis as well as practical algorithms for the required feedback information at the base stations to perform adaptive resource algorithms efficiently and mitigate interference coming from other cells.

Information and Communication Technology and Applications - Sanjay Misra 2021-02-13

This book constitutes revised selected papers from the Third International Conference on Information and Communication Technology and Applications, ICTA 2020, held in Minna, Nigeria, in November 2020. Due to the COVID-19 pandemic the conference was held online. The 67 full papers were carefully reviewed and selected from 234 submissions. The papers are organized in the topical sections on Artificial Intelligence, Big Data and Machine Learning; Information Security Privacy and Trust; Information Science and Technology.

Embedded Systems Specification and Design Languages - Eugenio Villar 2008-05-15

This book is the latest contribution to the Chip Design Languages series and it consists of selected papers presented at the Forum on Specifications and Design Languages (FDL'07), in September 2007. The book represents the state-of-the-art in research and practice, and it identifies new research directions. It highlights the role of specification and modelling languages, and presents practical experiences with specification and modelling languages

Systems Engineering in Wireless Communications - Heikki Niilo Koivo 2009-11-04

This book provides the reader with a complete coverage of radio resource management for 3G wireless communications Systems Engineering in Wireless Communications focuses on the area of radio resource management in third generation wireless communication systems from a systems engineering perspective. The authors provide an introduction into cellular radio systems as well as a review of radio resource management issues. Additionally, a detailed discussion of power control, handover, admission control, smart antennas, joint optimization of different radio resources , and cognitive radio networksis offered. This book differs from books currently available, with its emphasis on the dynamical issues arising from mobile nodes in the network. Well-known control techniques, such as least squares estimation, PID control, Kalman filers, adaptive control, and fuzzy logic are used throughout the book. Key

Features: Covers radio resource management of third generation wireless communication systems at a systems level First book to address wireless communications issues using systems engineering methods Offers the latest research activity in the field of wireless communications, extending to the control engineering community Includes an accompanying website containing MATLABTM/SIMULINKTM exercises Provides illustrations of wireless networks This book will be a valuable reference for graduate and postgraduate students studying wireless communications and control engineering courses, and R&D engineers.

Innovation in Electrical Power Engineering, Communication, and Computing Technology - Manohar Mishra 2021-12-15

This book features selected high-quality papers from the Second International Conference on Innovation in Electrical Power Engineering, Communication, and Computing Technology (IEPCCT 2021), held at Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, India, on 24–26 September 2021. Presenting innovations in power, communication, and computing, it covers topics such as mini, micro, smart and future power grids; power system economics; energy storage systems; intelligent control; power converters; improving power quality; signal processing; sensors and actuators; image/video processing; high-performance data mining algorithms; advances in deep learning; and optimization methods.

Millimeter-Wave (mmWave) Communications - Manuel García Sanchez 2020-03-25

The millimeter-wave frequency band (30–300 GHz) is considered a potential candidate to host very high data rate communications. First used for high capacity radio links and then for broadband indoor wireless networks, the interest in this frequency band has increased as it is proposed to accommodate future 5G mobile communication systems. The large bandwidth available will enable a number of new uses for 5G. In addition, due to the large propagation attenuation, this frequency band may provide some additional advantages regarding frequency reuse and communication security. However, a number of issues have to be addressed to make mm-wave communications viable. This book collects a number of contributions that present solutions to these challenges.