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A First Course in Digital Communications - Ha H. Nguyen 2009-05-28

A concise introduction to the core concepts in digital communication, providing clarity and depth through examples, problems and MATLAB exercises. Its simple structure maps a logical route to understand the most basic principles in digital communication, and also leads students through more in-depth treatment with examples and step-by step instructions.

Digital Design of Signal Processing Systems - Shoab Ahmed Khan 2011-02-02

Digital Design of Signal Processing Systems discusses a spectrum of architectures and methods for effective implementation of algorithms in hardware (HW). Encompassing all facets of the subject this book includes conversion of algorithms from floating-point to fixed-point format, parallel architectures for basic computational blocks, Verilog Hardware Description Language (HDL), SystemVerilog and coding guidelines for synthesis. The book also covers system level design of Multi Processor System on Chip (MPSoC); a consideration of different design methodologies including Network on Chip (NoC) and Kahn Process Network (KPN) based connectivity among processing elements. A special emphasis is placed on implementing streaming applications like a digital communication system in HW. Several novel architectures for implementing commonly used algorithms in signal processing are also revealed. With a comprehensive

coverage of topics the book provides an appropriate mix of examples to illustrate the design methodology. Key Features: A practical guide to designing efficient digital systems, covering the complete spectrum of digital design from a digital signal processing perspective Provides a full account of HW building blocks and their architectures, while also elaborating effective use of embedded computational resources such as multipliers, adders and memories in FPGAs Covers a system level architecture using NoC and KPN for streaming applications, giving examples of structuring MATLAB code and its easy mapping in HW for these applications Explains state machine based and Micro-Program architectures with comprehensive case studies for mapping complex applications The techniques and examples discussed in this book are used in the award winning products from the Center for Advanced Research in Engineering (CARE). Software Defined Radio, 10 Gigabit VoIP monitoring system and Digital Surveillance equipment has respectively won APICTA (Asia Pacific Information and Communication Alliance) awards in 2010 for their unique and effective designs.

The Six-Port Technique with Microwave and Wireless Applications - Fadhel M. Ghannouchi 2009

One of the main issues in microwave and wireless system design is to ensure high performance with low cost techniques. The six-

port technique helps allow for this in critical network design areas. This practical resource offers you a thorough overview the six-port technique, from basic principles of RF measurement based techniques and multiport design, to coverage of key applications, such as vector network analyzers, software defined radio, and radar. The first book dedicated to six-port applications and principles, this volume serves as a current, one-stop guide offering you cost-effective solutions for your challenging projects in the field.

Advanced Digital Design with the Verilog HDL - Michael D. Ciletti 2011

This title builds on the student's background from a first course in logic design and focuses on developing, verifying, and synthesizing designs of digital circuits. The Verilog language is introduced in an integrated, but selective manner, only as needed to support design examples.

Computer Communication, Networking and IoT - Vikrant Bhateja 2021-07-25

This book features a collection of high-quality, peer-reviewed papers presented at the Fourth International Conference on Intelligent Computing and Communication (ICICC 2020) organized by the Department of Computer Science and Engineering and the Department of Computer Science and Technology, Dayananda Sagar University, Bengaluru, India, on 18-20 September 2020. The book is organized in two volumes and discusses advanced and multi-disciplinary research regarding the design of smart computing and informatics. It focuses on innovation paradigms in system knowledge, intelligence and sustainability that can be applied to provide practical solutions to a number of problems in society, the environment and industry. Further, the book also addresses the deployment of emerging computational and knowledge transfer approaches, optimizing solutions in various disciplines of science, technology and health care.

Progress In Astronautics and Aeronautics - Takashi Iida 2003

Vehicle-to-Vehicle and Vehicle-to-Infrastructure Communications - Fei Hu 2018-02-20

This book focuses on the most critical technical aspects of vehicle-to-vehicle (V2V) and vehicle-

to-infrastructure (V2I) communications. It covers the smart city concept and architecture and explains how V2V and V2I fit into it. It describes the wireless communication protocols for V2V and V2I. It then explains the hardware design process for vehicle communication transceiver and antenna systems. It explains next-generation wireless technologies and their requirements for vehicle communication protocols. Case studies provide the latest V2V and V2I commercial design details. Finally, it describes how to implement vehicle communication protocol from practical hardware design angle.

Innovation and Research - A Driving Force for Socio-Econo-Technological Development - Marcelo Zambrano Vizuet 2022-08-01

This book presents the proceedings of the 2nd International Congress on Innovation and Research—A Driving Force for Socio-Econo-Technological Development (CI3 2021). CI3 was held on September 1-3, 2021. It was organized by the Instituto Tecnológico Superior Rumiñahui and GDEON, in co-organization with Higher Institutes: Bolivariano de Tecnología, Central Técnico, Espíritu Santo, José Chiriboga Grijalva, ISMAC, Policía Nacional del Ecuador Vida Nueva; and sponsored by the Universidad Nacional Mayor de San Marcos (Peru), Universidade Federal de Goiás (Brazil) and City University of New York (United States). CI3 aims to disseminate the research project results that are being carried out in different Higher Education Institutions, research centers, and the business sector.

The Complete Verilog Book - Vivek Sagdeo 2007-05-08

The Verilog hardware description language (HDL) provides the ability to describe digital and analog systems. This ability spans the range from descriptions that express conceptual and architectural design to detailed descriptions of implementations in gates and transistors.

Verilog was developed originally at Gateway Design Automation Corporation during the mid-eighties. Tools to verify designs expressed in Verilog were implemented at the same time and marketed. Now Verilog is an open standard of IEEE with the number 1364. Verilog HDL is now used universally for digital designs in ASIC, FPGA, microprocessor, DSP and many other kinds of design-centers and is supported by most

of the EDA companies. The research and education that is conducted in many universities is also using Verilog. This book introduces the Verilog hardware description language and describes it in a comprehensive manner. Verilog HDL was originally developed and specified with the intent of use with a simulator. Semantics of the language had not been fully described until now. In this book, each feature of the language is described using semantic introduction, syntax and examples. Chapter 4 leads to the full semantics of the language by providing definitions of terms, and explaining data structures and algorithms. The book is written with the approach that Verilog is not only a simulation or synthesis language, or a formal method of describing design, but a complete language addressing all of these aspects. This book covers many aspects of Verilog HDL that are essential parts of any design process.

Software-Defined Radio for Engineers - Alexander M. Wyglinski 2018-04-30

Based on the popular Artech House classic, *Digital Communication Systems Engineering with Software-Defined Radio*, this book provides a practical approach to quickly learning the software-defined radio (SDR) concepts needed for work in the field. This up-to-date volume guides readers on how to quickly prototype wireless designs using SDR for real-world testing and experimentation. This book explores advanced wireless communication techniques such as OFDM, LTE, WLA, and hardware targeting. Readers will gain an understanding of the core concepts behind wireless hardware, such as the radio frequency front-end, analog-to-digital and digital-to-analog converters, as well as various processing technologies. Moreover, this volume includes chapters on timing estimation, matched filtering, frame synchronization message decoding, and source coding. The orthogonal frequency division multiplexing is explained and details about HDL code generation and deployment are provided. The book concludes with coverage of the WLAN toolbox with OFDM beacon reception and the LTE toolbox with downlink reception. Multiple case studies are provided throughout the book. Both MATLAB and Simulink source code are included to assist readers with their projects in the field.

VLSI Design - Vikram Arkalgud Chandrasetty 2011-08-23

This book provides insight into the practical design of VLSI circuits. It is aimed at novice VLSI designers and other enthusiasts who would like to understand VLSI design flows. Coverage includes key concepts in CMOS digital design, design of DSP and communication blocks on FPGAs, ASIC front end and physical design, and analog and mixed signal design. The approach is designed to focus on practical implementation of key elements of the VLSI design process, in order to make the topic accessible to novices. The design concepts are demonstrated using software from Mathworks, Xilinx, Mentor Graphics, Synopsys and Cadence.

Mechatronics and Intelligent Materials II - Ran Chen 2012-03-15

Volume is indexed by Thomson Reuters CPCI-S (WoS). This work comprises 798 peer-reviewed papers on Mechatronics and Intelligent Materials, and seeks to promote the development of those topics by strengthening international academic cooperation and communication via the exchange of research ideas. It will provide readers with a broad overview of the latest advances made in the fields of mechatronics and intelligent materials.

Signal and Information Processing, Networking and Computers - Jiande Sun 2022-07-18

This book collects selected papers from the 8th Conference on Signal and Information Processing, Networking and Computers held in Ji'nan, Shandong, China on September 13-17, 2021. It focuses on the current works of information theory, communication system, computer science, aerospace technologies and big data and other related technologies. Readers from both academia and industry of this field can contribute and find their interests from the book.

Computing Platforms for Software-Defined Radio - Waqar Hussain 2016-12-28

This book addresses Software-Defined Radio (SDR) baseband processing from the computer architecture point of view, providing a detailed exploration of different computing platforms by classifying different approaches, highlighting the common features related to SDR requirements and by showing pros and cons of the proposed solutions. It covers architectures exploiting parallelism by extending single-processor

environment (such as VLIW, SIMD, TTA approaches), multi-core platforms distributing the computation to either a homogeneous array or a set of specialized heterogeneous processors, and architectures exploiting fine-grained, coarse-grained, or hybrid reconfigurability.

Advanced Millimeter-wave Technologies -

Duixian Liu 2009-03-03

This book explains one of the hottest topics in wireless and electronic devices community, namely the wireless communication at mmWave frequencies, especially at the 60 GHz ISM band. It provides the reader with knowledge and techniques for mmWave antenna design, evaluation, antenna and chip packaging.

Addresses practical engineering issues such as RF material evaluation and selection, antenna and packaging requirements, manufacturing tolerances, antenna and system interconnections, and antenna

One of the first books to discuss the emerging research and application areas, particularly chip packages with integrated antennas, wafer scale mmWave phased arrays and imaging Contains a good number of case studies to aid understanding Provides the antenna and packaging technologies for the latest and emerging applications with the emphases on antenna integrations for practical applications such as wireless USB, wireless video, phase array, automobile collision avoidance radar, and imaging

Provides the antenna and packaging technologies for the latest and emerging applications with the emphases on antenna integrations for practical applications such as wireless USB, wireless video, phase array, automobile collision avoidance radar, and imaging

Software Radio - Jeffrey Hugh Reed 2002

This guide to radio engineering covers every technique DSP and RF engineers need to build software radios for a wide variety of wireless systems using DSP techniques. Included are practical guidelines for choosing DSP microprocessors, and systematic, object-oriented software design techniques.

Field-Programmable Logic and Applications

- Peter Y.K. Cheung 2003-08-27

This book constitutes the refereed proceedings of the 13th International Conference on Field-Programmable Logic and Applications, FPL 2003, held in Lisbon, Portugal in September 2003. The 90 revised full papers and 56 revised poster papers presented were carefully reviewed and selected from 216 submissions. The papers are organized in topical sections on technologies and trends, communications applications, high

level design tools, reconfigurable architecture, cryptographic applications, multi-context FPGAs, low-power issues, run-time reconfiguration, compilation tools, asynchronous techniques, bio-related applications, codesign, reconfigurable fabrics, image processing applications, SAT techniques, application-specific architectures, DSP applications, dynamic reconfiguration, SoC architectures, emulation, cache design, arithmetic, bio-inspired design, SoC design, cellular applications, fault analysis, and network applications.

Advances in Biometrics - G.R. Sinha 2019-12-13

This book provides a framework for robust and novel biometric techniques, along with implementation and design strategies. The theory, principles, pragmatic and modern methods, and future directions of biometrics are presented, along with in-depth coverage of biometric applications in driverless cars, automated and AI-based systems, IoT, and wearable devices. Additional coverage includes computer vision and pattern recognition, cybersecurity, cognitive computing, soft biometrics, and the social impact of biometric technology. The book will be a valuable reference for researchers, faculty, and practicing professionals working in biometrics and related fields, such as image processing, computer vision, and artificial intelligence.

Highlights robust and novel biometrics techniques Provides implementation strategies and future research directions in the field of biometrics Includes case studies and emerging applications

International Conference on Computer Networks and Communication Technologies - S. Smys 2018-09-17

The book features research papers presented at the International Conference on Computer Networks and Inventive Communication Technologies (ICCNCT 2018), offering significant contributions from researchers and practitioners in academia and industry. The topics covered include computer networks, network protocols and wireless networks, data communication technologies, and network security. Covering the main core and specialized issues in the areas of next-generation wireless network design, control, and management, as well as in the areas of protection, assurance, and

trust in information security practices, these proceedings are a valuable resource, for researchers, instructors, students, scientists, engineers, managers, and industry practitioners.

VHDL: Hardware Description and Design -

Roger Lipsett 2012-12-06

VHDL is a comprehensive language that allows a user to deal with design complexity. Design, and the data representing a design, are complex by the very nature of a modern digital system constructed from VLSI chips. VHDL is the first language to allow one to capture all the nuances of that complexity, and to effectively manage the data and the design process. As this book shows, VHDL is not by its nature a complex language. In 1980, the U. S. Government launched a very aggressive effort to advance the state-of-the-art in silicon technology. The objective was to significantly enhance operating performance and circuit density for Very Large Scale Integration (VLSI) silicon chips. The U. S. Government realized that in order for contractors to be able to work together to develop VLSI products, to document the resulting designs, to be able to reuse the designs in future products, and to efficiently upgrade existing designs, they needed a common communication medium for the design data. They wanted the design descriptions to be computer readable and executable. They also recognized that with the high densities envisioned for the U. S. Government's Very High Speed Integrated Circuit (VHSIC) chips and the large systems required in future procurements, a means of streamlining the design process and managing the large volumes of design data was required. Thus was born the concept of a standard hardware design and description language to solve all of these problems.

Implementing Software Defined Radio - Eugene Grayver 2012-07-20

Software Defined Radio makes wireless communications easier, more efficient, and more reliable. This book bridges the gap between academic research and practical implementation. When beginning a project, practicing engineers, technical managers, and graduate students can save countless hours by considering the concepts presented in these pages. The author covers the myriad options and trade-offs available when selecting an

appropriate hardware architecture. As demonstrated here, the choice between hardware- and software-centric architecture can mean the difference between meeting an aggressive schedule and bogging down in endless design iterations. Because of the author's experience overseeing dozens of failed and successful developments, he is able to present many real-life examples. Some of the key concepts covered are: Choosing the right architecture for the market - laboratory, military, or commercial, Hardware platforms - FPGAs, GPPs, specialized and hybrid devices, Standardization efforts to ensure interoperability and portability State-of-the-art components for radio frequency, mixed-signal, and baseband processing. The text requires only minimal knowledge of wireless communications; whenever possible, qualitative arguments are used instead of equations. An appendix provides a quick overview of wireless communications and introduces most of the concepts the readers will need to take advantage of the material. An essential introduction to SDR, this book is sure to be an invaluable addition to any technical bookshelf.

Computational Intelligence in Information Systems - Somnuk Phon-Amnuaisuk 2014-11-06

This book constitutes the refereed proceedings of the Fourth International Neural Network Symposia series on Computational Intelligence in Information Systems, INNS-CIIS 2014, held in Bandar Seri Begawan, Brunei in November 2014. INNS-CIIS aims to provide a platform for researchers to exchange the latest ideas and present the most current research advances in general areas related to computational intelligence and its applications in various domains. The 34 revised full papers presented in this book have been carefully reviewed and selected from 72 submissions. They cover a wide range of topics and application areas in computational intelligence and informatics.

Field-Programmable Logic and Applications: The Roadmap to Reconfigurable Computing

- Reiner W. Hartenstein 2003-06-29

This book is the proceedings volume of the 10th International Conference on Field Programmable Logic and its Applications (FPL), held August 27 30, 2000 in Villach, Austria, which covered areas like reconfigurable logic

(RL), reconfigurable computing (RC), and its applications, and all other aspects. Its subtitle "The Roadmap to Reconfigurable Computing" reminds us, that we are currently witnessing the runaway of a breakthrough. The annual FPL series is the eldest international conference in the world covering configware and all its aspects. It was founded 1991 at Oxford University (UK) and is 2 years older than its two most important competitors usually taking place at Monterey and Napa. FPL has been held at Oxford, Vienna, Prague, Darmstadt, London, Tallinn, and Glasgow (also see: <http://www.fpl.uni-kl.de/FPL/>). The New Case for Reconfigurable Platforms: Converging Media. Indicated by palmtops, smart mobile phones, many other portables, and consumer electronics, media such as voice, sound, video, TV, wireless, cable, telephone, and Internet continue to converge. This creates new opportunities and even necessities for reconfigurable platform usage. The new converged media require high volume, flexible, multi purpose, multi standard, low power products adaptable to support evolving standards, emerging new standards, field upgrades, bug fixes, and, to meet the needs of a growing number of different kinds of services offered to zillions of individual subscribers preferring different media mixes.

Digital Signal Processing with Field Programmable Gate Arrays - Uwe Meyer-Baese 2007-09-28

A practical and fascinating book on a topic at the forefront of communications technology. Field-Programmable Gate Arrays (FPGAs) are on the verge of revolutionizing digital signal processing. Novel FPGA families are replacing ASICs and PDSs for front-end digital signal processing algorithms at an accelerating rate. The efficient implementation of these algorithms is the main goal of this book. It starts with an overview of today's FPGA technology, devices, and tools for designing state-of-the-art DSP systems. Each of the book's chapter contains exercises. The VERILOG source code and a glossary are given in the appendices.

Emerging Research in Electronics, Computer Science and Technology - V Sridhar 2013-09-13

PES College of Engineering is organizing an International Conference on Emerging Research

in Electronics, Computer Science and Technology (ICERECT-12) in Mandya and merging the event with Golden Jubilee of the Institute. The Proceedings of the Conference presents high quality, peer reviewed articles from the field of Electronics, Computer Science and Technology. The book is a compilation of research papers from the cutting-edge technologies and it is targeted towards the scientific community actively involved in research activities.

Field-Programmable Logic and Applications: Reconfigurable Computing Is Going Mainstream - Manfred Glesner 2003-08-02

This book constitutes the refereed proceedings of the 12th International Conference on Field-Programmable Logic and Applications, FPL 2002, held in Montpellier, France, in September 2002. The 104 revised regular papers and 27 poster papers presented together with three invited contributions were carefully reviewed and selected from 214 submissions. The papers are organized in topical sections on rapid prototyping, FPGA synthesis, custom computing engines, DSP applications, reconfigurable fabrics, dynamic reconfiguration, routing and placement, power estimation, synthesis issues, communication applications, new technologies, reconfigurable architectures, multimedia applications, FPGA-based arithmetic, reconfigurable processors, testing and fault-tolerance, crypto applications, multitasking, compilation techniques, etc.

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.

Fundamentals of Digital Communication -

Upamanyu Madhow 2008-03-06

This is a concise presentation of the concepts underlying the design of digital communication systems, without the detail that can overwhelm students. Many examples, from the basic to the cutting-edge, show how the theory is used in the design of modern systems and the relevance of this theory will motivate students. The theory is supported by practical algorithms so that the student can perform computations and simulations. Leading edge topics in coding and wireless communication make this an ideal text for students taking just one course on the subject. Fundamentals of Digital

Communications has coverage of turbo and LDPC codes in sufficient detail and clarity to enable hands-on implementation and performance evaluation, as well as 'just enough' information theory to enable computation of performance benchmarks to compare them against. Other unique features include space-time communication and geometric insights into noncoherent communication and equalization.

Digital Radio System Design - Grigorios Kalivas 2009-10-23

A systematic explanation of the principles of radio systems, Digital Radio System Design offers a balanced treatment of both digital transceiver modems and RF front-end subsystems and circuits. It provides an in-depth examination of the complete transceiver chain which helps to connect the two topics in a unified system concept. Although the book tackles such diverse fields it treats them in sufficient depth to give the designer a solid foundation and an implementation perspective. Covering the key concepts and factors that characterise and impact radio transmission and reception, the book presents topics such as receiver design, noise and distortion.

Information is provided about more advanced aspects of system design such as implementation losses due to non-idealities. Providing vivid examples, illustrations and detailed case-studies,

this book is an ideal introduction to digital radio systems design. Offers a balanced treatment of digital modem and RF front-end design concepts for complete transceivers Presents a diverse range of topics related to digital radio design including advanced transmission and synchronization techniques with emphasis on implementation Provides guidance on imperfections and non-idealities in radio system design Includes detailed design case-studies incorporating measurement and simulation results to illustrate the theory in practice

2019 IEEE International WIE Conference on Electrical and Computer Engineering (WIECON ECE) - IEEE Staff 2019-11-15

Antenna, Microwave & RF Engineering AI, Computer Networks, Security & IOT Biomedical Engineering & Bioinformatics Cloud, Big Data & ICT Computer Architecture & Systems Computer Vision, Graphics & HCI Devices, Materials & Processing Electrical Machines & Drives Humanitarian Technology Nano & Semiconductor Technology Photonic Technologies & Applications Power Electronics Power System & Renewable Energy Robotics, Control & Automation Software & Database Systems Signal, Image & Video Processing VLSI, Circuits & Systems Wireless & Optical Communication

Information Hiding - Matthias Kirchner 2013-02-20

This book contains the thoroughly refereed post-conference proceedings of the 14th Information Hiding Conference, IH 2012, held in Berkeley, CA, USA, in May 2012. The 18 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on multimedia forensics and counter-forensics, steganalysis, data hiding in unusual content, steganography, covert channels, anonymity and privacy, watermarking, and fingerprinting.

Applied Informatics and Cybernetics in Intelligent Systems - Radek Silhavy 2020-08-07

This book gathers the refereed proceedings of the Applied Informatics and Cybernetics in Intelligent Systems Section of the 9th Computer Science On-line Conference 2020 (CSOC 2020), held on-line in April 2020. Modern cybernetics and computer engineering in connection with

intelligent systems are an essential aspect of ongoing research. This book addresses these topics, together with automation and control theory, cybernetic applications, and the latest research trends.

Proceedings - 2000

Information Metamaterials - Tie Jun Cui
2021-02-18

Metamaterials have attracted enormous interests from both physics and engineering communities in the past 20 years, owing to their powerful ability in manipulating electromagnetic waves. However, the functionalities of traditional metamaterials are fixed at the time of fabrication. To control the EM waves dynamically, active components are introduced to the meta-atoms, yielding active metamaterials. Recently, a special kind of active metamaterials, digital coding and programmable metamaterials, are proposed, which can achieve dynamically controllable functionalities using field programmable gate array (FPGA). Most importantly, the digital coding representations of metamaterials set up a bridge between the digital world and physical world, and allow metamaterials to process digital information directly, leading to information metamaterials. In this Element, we review the evolution of information metamaterials, mainly focusing on their basic concepts, design principles, fabrication techniques, experimental measurement and potential applications. Future developments of information metamaterials are also envisioned.

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.

Advanced Wireless Communications - Savo

G. Glisic 2005-12-13

The wireless community is on the verge of the standardization of fourth generation (4G) systems. Research has generated a number of solutions for significant improvement of system performance. The development of enabling technologies such as adaptive coding and modulation, iterative (turbo) decoding algorithms and space-time coding, means that industry can now implement these solutions. **Advanced Wireless Communications: 4G Technologies** focuses on the system elements that provide adaptability and reconfigurability and discusses how these features can improve 4G system performance. There are several different systems comprising 4G, including adaptive WCDMA (Wideband Code Division Multiple Access), ATDMA (Adaptive Time Division Multiple Access), Multicarrier (OFDMA) and Ultra Wide Band (UWB) receiver elements. This book provides a comparative study of these technologies and focuses on their future co-existence. Topics covered include: Space Time Coding, including discussions on diversity gain, the encoding and transmission sequence, the combining scheme and ML decision rule for two-branch transmit diversity scheme with one and M receivers. Ultra Wide Band Radio, UWB multiple access in Gaussian channels, the UWB channel, UWB system with M-ary modulation, M-ary PPM UWB multiple access, coded UWB schemes, multi-user detection in UWB radio, UWB with space time processing and beam forming for UWB radio. Antenna array signal processing with focus on Space-Time receivers for CDMA communications, MUSIC and ESPRIT DOA estimation, joint array combining and MLSE receivers, joint combiner and channel response estimation and complexity reduction in the wide-band beam forming Channel modeling and measurement, adaptive MAC, adaptive routing and TCP layer are also addressed. This book will supply the reader with a comprehensive understanding of the relationship between the systems performance, its complexity/reliability and cost-effectiveness. It gives an insight into the impact of existing and new technologies on the receiver structure and provides an understanding of current approaches and evolving directions for personal and indoor communication.

Cyber Security and Digital Forensics - Kavita Khanna 2021-10-01

This book features high-quality research papers presented at the International Conference on Applications and Techniques in Cyber Security and Digital Forensics (ICCSDf 2021), held at The NorthCap University, Gurugram, Haryana, India, during April 3-4, 2021. This book discusses the topics ranging from information security to cryptography, mobile application attacks to digital forensics, and from cyber security to blockchain. The goal of the book is to provide 360-degree view of cybersecurity to the readers which include cyber security issues, threats, vulnerabilities, novel idea, latest technique and technology, and mitigation of threats and attacks along with demonstration of practical applications. This book also highlights the latest development, challenges, methodologies as well as other emerging areas in this field. It brings current understanding of common Web vulnerabilities while maintaining awareness and knowledge of contemporary standards, practices, procedures, and methods of Open Web Application Security Project. It also expounds how to recover information after a cybercrime.

Energy Science and Applied Technology ESAT 2016 - Zhigang Fang 2016-10-14

The 2016 International Conference on Energy Science and Applied Technology (ESAT 2016)

held on June 25-26 in Wuhan, China aimed to provide a platform for researchers, engineers, and academicians, as well as industrial professionals, to present their research results and development activities in energy science and engineering and its applied technology. The themes presented in Energy Science and Applied Technology ESAT 2016 are: Technologies in Geology, Mining, Oil and Gas; Renewable Energy, Bio-Energy and Cell Technologies; Energy Transfer and Conversion, Materials and Chemical Technologies; Environmental Engineering and Sustainable Development; Electrical and Electronic Technology, Power System Engineering; Mechanical, Manufacturing, Process Engineering; Control and Automation; Communications and Applied Information Technologies; Applied and Computational Mathematics; Methods and Algorithms Optimization; Network Technology and Application; System Test, Diagnosis, Detection and Monitoring; Recognition, Video and Image Processing.

Introduction to Communication Systems - Upamanyu Madhow 2014-11-24

An accessible undergraduate textbook introducing key fundamental principles behind modern communication systems, supported by exercises, software problems and lab exercises.

Field-programmable Logic and Applications - 2002