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Multirate Signal Processing For Communication Systems - Harris 2007-09

This Book Provides The Communications Engineer Involved In The Physical Layer Of Communications Systems, The Signal Processing Techniques And Design Tools Needed To Develop Efficient Algorithms For The Design Of Various Systems. These Systems Include Satellite Modems, Cable Modems, Wire-Line Modems, Cell-Phones, Various Radios, Multi-Channel Receivers, Audio Encoders, Surveillance Receivers, Laboratory Instruments, And Various Sonar And Radar Systems. The Emphasis Woven Through The Book Material Is That Of Intuitive Understanding Obtained By The Liberal Use Of Figures And Examples. The Book Contains Examples Of All These Types Of Systems. The Book Also Will Contain Matlab Script Files That Implement The Examples As Well As Design

Tools For Filters Similar To The Examples.

Multirate and Wavelet Signal Processing - Bruce W. Suter 1997-12-10

This innovative and in-depth book integrates the well-developed theory and practical applications of one dimensional and multidimensional multirate signal processing. Using a rigorous mathematical framework, it carefully examines the fundamentals of this rapidly growing field. Areas covered include: basic building blocks of multirate signal processing; fundamentals of multidimensional multirate signal processing; multirate filter banks; lossless lattice structures; introduction to wavelet signal processing. Multirate and Wavelet Signal Processing forms the basis for a graduate course in multirate signal processing. It includes an introduction to wavelet signal processing and emphasizes topics of ever-increasing importance for a wide range of applications. Concise and easy-to-read, this book is also a useful primer for professional engineers. Integrates the well-developed theory and practical applications of one-dimensional and multidimensional multirate signal processing Emphasizes topics of ever-increasing importance for a wide range of applications Written in a concise, easy-to-read style Uses relevant examples General mathematical formulation permits extensions of concepts to diverse applications, such as speech, imaging, video, and synthetic aperture radar Emphasizes key topics of the field, allowing the reader to make the most efficient use of time in learning the fundamentals of multirate Designed to be completely covered in a single semester or quarter

Digital Signal Processing Fundamentals - Vijay Madisetti 2017-12-19

Now available in a three-volume set, this updated and expanded edition of the bestselling The Digital Signal Processing Handbook continues to provide the engineering community with authoritative coverage of the fundamental

and specialized aspects of information-bearing signals in digital form. Encompassing essential background material, technical details, standards, and software, the second edition reflects cutting-edge information on signal processing algorithms and protocols related to speech, audio, multimedia, and video processing technology associated with standards ranging from WiMax to MP3 audio, low-power/high-performance DSPs, color image processing, and chips on video. Drawing on the experience of leading engineers, researchers, and scholars, the three-volume set contains 29 new chapters that address multimedia and Internet technologies, tomography, radar systems, architecture, standards, and future applications in speech, acoustics, video, radar, and telecommunications. Emphasizing theoretical concepts, Digital Signal Processing Fundamentals provides comprehensive coverage of the basic foundations of DSP and includes the following parts: Signals and Systems; Signal Representation and Quantization; Fourier Transforms; Digital Filtering; Statistical Signal Processing; Adaptive Filtering; Inverse Problems and Signal Reconstruction; and Time–Frequency and Multirate Signal Processing.

Multirate Signal Processing for Communication Systems - Fredric J. Harris 2022-09-01

Multirate Signal processing can improve system performance and reduce costs in applications ranging from laboratory instruments, cable modems, wireless systems, satellites, Radar, Sonar, and consumer entertainment products. This second edition continues to offer a systematic, clear, and intuitive introduction to multirate signal processing for working engineers and system designers. Significant new material and fresh concepts, including Green Signal Processing techniques have been introduced. The author uses extensive examples and figures to illustrate a wide range of multirate techniques,

from basic resampling to leading-edge cascade and multi-stage filter structures. Along the way he draws on extensive research and consulting experience to introduce processing “tricks” shown to maximize performance and efficiency. Coverage includes:• Effect of sampling and resampling in time and frequency domains• Relationships between FIR filter specifications and filter length (# of taps)• Window design and equal-ripple (Remez) design techniques• Square-Root Nyquist and Half-band Filters including new enhancements• Polyphase FIR filters: up-sampling, down-sampling• Polyphase M-path analysis and synthesis channelizers and cascade pairs• Polyphase interpolators for arbitrary sample rate changes• Dyadic half-band filters, quadrature mirror filters• Channel banks for multiple arbitrary bandwidths and center frequencies • Comprehensive coverage of recursive all-pass filters and channelizers, non-uniform and uniform phase, mixed recursive and non-recursive• Comparisons with traditional DSP designs• Extensive applications coverage throughout

Essentials of Digital Signal Processing - B. P. Lathi 2014-04-28

Offers a fresh approach to digital signal processing (DSP), combining heuristic reasoning and physical appreciation with mathematical methods.

Proceedings of the 18th Annual International Conference of the IEEE Engineering in Medicine and Biology Society - IEEE Engineering in Medicine and Biology Society. Conference 1997

2000 IEEE International Conference on Acoustics, Speech, and Signal Processing - 2000

Proceedings IWISP '96, 4–7 November 1996; Manchester, UK - Basil G. Mertzios 1996-11-08

The papers in this volume focus on the most modern and critical aspects of Image and Signal

Processing and related areas that have a significant impact in our society. The papers may be categorized in the following four major parts. Coding and Compression (image coding, image subband, wavelet coding and representation, video coding, motion estimation and multimedia); Image Processing and Pattern Recognition (image analysis, edge detection, segmentation, image enhancement and restoration, adaptive systems, colour processing, pattern and object recognition and classification); Fast Processing Techniques (computational methods, VLSI DSP architectures); Theory and Applications (identificiation and modelling, multirate filter banks, wavelets in image and signal processing, biomedical and industrial applications). The authors of these exceptionally high-quality papers form an interesting group, originating from the five continents, representing 33 countries.

Green Networking and Communications - Shafiullah Khan 2013-10-29

Although the information and communication technology (ICT) industry accounted for only 2 percent of global greenhouse gas emissions in 2007, the explosive increase in data traffic brought about by a rapidly growing user base of more than a billion wireless subscribers is expected to nearly double that number by 2020. It is clear that now is the time to rethink how we design and build our networks. Green Networking and Communications: ICT for Sustainability brings together leading academic and industrial researchers from around the world to discuss emerging developments in energy-efficient networking and communications. It covers the spectrum of research subjects, including methodologies and architectures for energy efficiency, energy-efficient protocols and networks, energy management, smart grid communications, and communication technologies for green solutions. Examines foraging-inspired radio-communication energy management for green multi-

radio networks Considers a cross-layer approach to the design of energy-efficient wireless access networks Investigates the interplay between cooperative device-to-device communications and green LTE cellular networks Considers smart grid energy procurement for green LTE cellular networks Details smart grid networking protocols and standards Considering the spectrum of energy-efficient network components and approaches for reducing power consumption, the book is organized into three sections: Energy Efficiency and Management in Wireless Networks, Cellular Networks, and Smart Grids. It addresses many open research challenges regarding energy efficiency for IT and for wireless sensor networks, including mobile and wireless access networks, broadband access networks, home networks, vehicular networks, intelligent future wireless networks, and smart grids. It also examines emerging standards for energy-efficient protocols. Since ICT technologies touch on nearly all sectors of the economy, the concepts presented in this text offer you the opportunity to make a substantial contribution to the reduction of global greenhouse gas emissions.

Speech Processing in the Auditory System - Steven Greenberg 2006-05-09

Although speech is the primary behavioral medium by which humans communicate, its auditory basis is poorly understood, having profound implications on efforts to ameliorate the behavioral consequences of hearing impairment and on the development of robust algorithms for computer speech recognition. In this volume, the authors provide an up-to-date synthesis of recent research in the area of speech processing in the auditory system, bringing together a diverse range of scientists to present the subject from an interdisciplinary perspective. Of particular concern is the ability to understand speech in uncertain, potentially adverse acoustic environments,

currently the bane of both hearing aid and speech recognition technology. There is increasing evidence that the perceptual stability characteristic of speech understanding is due, at least in part, to elegant transformations of the acoustic signal performed by auditory mechanisms. As a comprehensive review of speech's auditory basis, this book will interest physiologists, anatomists, psychologists, phoneticians, computer scientists, biomedical and electrical engineers, and clinicians.

Digital Signal Processing Handbook on CD-ROM - VIJAY MADISETTI 1999-02-26

A best-seller in its print version, this comprehensive CD-ROM reference contains unique, fully searchable coverage of all major topics in digital signal processing (DSP), establishing an invaluable, time-saving resource for the engineering community. Its unique and broad scope includes contributions from all DSP specialties, including: telecommunications, computer engineering, acoustics, seismic data analysis, DSP software and hardware, image and video processing, remote sensing, multimedia applications, medical technology, radar and sonar applications

Green, Pervasive, and Cloud Computing - Shijian Li 2019-03-14

This book constitutes the proceedings of the 13th International Conference on Green, Pervasive, and Cloud Computing, GPC 2018, held in Hangzhou, China, in May 2018. The 35 full papers included in this volume were carefully reviewed and selected from 101 initial submissions. They are organized in the following topical sections: network security, and privacy-preserving; pervasive sensing and analysis; cloud computing, mobile computing, and crowd sensing; social and urban computing; parallel and distributed systems, optimization; pervasive applications; and data mining and knowledge mining.

Multirate Filtering for

Digital Signal Processing: MATLAB Applications - Milic, Ljiljana 2009-01-31
"This book covers basic and the advanced approaches in the design and implementation of multirate filtering"--Provided by publisher.
Multirate Digital Signal Processing - Ronald E. Crochiere 1983
Intended for a one-semester advanced graduate course in digital signal processing or as a reference for practicing engineers and researchers.
Digital Signal Processing with Matlab Examples, Volume 2 - Jose Maria Giron-Sierra 2016-12-02
This is the second volume in a trilogy on modern Signal Processing. The three books provide a concise exposition of signal processing topics, and a guide to support individual practical exploration based on MATLAB programs. This second book focuses on recent developments in response to the demands of new digital technologies. It is divided into two parts: the first part includes four chapters on the decomposition and recovery of signals, with special emphasis on images. In turn, the second part includes three chapters and addresses important data-based actions, such as adaptive filtering, experimental modeling, and classification.
Dissertation Abstracts International - 1998

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.
Digital Signal Processing - Paulo S. R. Diniz 2002-04-18
Digital signal processing lies at the heart of the communications revolution and is an essential element of key technologies such as mobile phones and the Internet. This book covers all the major topics in digital signal processing (DSP) design and analysis, supported by MatLab examples and other modelling

techniques. The authors explain clearly and concisely why and how to use digital signal processing systems; how to approximate a desired transfer function characteristic using polynomials and ratio of polynomials; why an appropriate mapping of a transfer function on to a suitable structure is important for practical applications; and how to analyse, represent and explore the trade-off between time and frequency representation of signals. An ideal textbook for students, it will also be a useful reference for engineers working on the development of signal processing systems.

DAFX - Digital Audio Effects - Udo Zölzer 2002-04-17

* Digital Audio Effects (DAFX) covers the use of digital signal processing and its applications to sounds * Discusses digital audio effects from both an introductory level, for musicians, and an advanced level, for signal processing engineers * Explains what can be done in the digital processing of sounds in the form of computer algorithms and sound examples resulting from these transformations * Brings together essential DSP algorithms for sound processing, providing an excellent introduction to the topic

IEEE/ISPRS Joint Workshop on Remote Sensing and Data Fusion Over Urban Areas - 2001

This volume originates in the IEEE/ISPRS Workshop on Remote Sensing and Data Fusion, and examines power generation. It covers such topics as: 2D detection and classification; 3D urban modelling and reconstruction; data fusion over urban areas; and urban remote sensing applications.

Optimal Design of Multirate Systems - William M. Campbell 1995

Filter Bank Transceivers for OFDM and DMT Systems - Yuan-Pei Lin 2010-10-28

Providing key background material together with advanced topics, this self-contained book is written in an

easy-to-read style and is ideal for newcomers to multicarrier systems. Early chapters provide a review of basic digital communication, starting from the equivalent discrete time channel and including a detailed review of the MMSE receiver. Later chapters then provide extensive performance analysis of OFDM and DMT systems, with discussions of many practical issues such as implementation and power spectrum considerations. Throughout, theoretical analysis is presented alongside practical design considerations, whilst the filter bank transceiver representation of OFDM and DMT systems opens up possibilities for further optimization such as minimum bit error rate, minimum transmission power, and higher spectral efficiency. With plenty of insightful real-world examples and carefully designed end-of-chapter problems this is an ideal single-semester textbook for senior undergraduate and graduate students, as well as a self-study guide for researchers and professional engineers.
Multirate Systems And Filter Banks - P. P. Vaidyanathan 2006

Digital Signal Processing - Thomas Holton 2021-02-18
Combining clear explanations of elementary principles, advanced topics and applications with step-by-step mathematical derivations, this textbook provides a comprehensive yet accessible introduction to digital signal processing. All the key topics are covered, including discrete-time Fourier transform, z-transform, discrete Fourier transform and FFT, A/D conversion, and FIR and IIR filtering algorithms, as well as more advanced topics such as multirate systems, the discrete cosine transform and spectral signal processing. Over 600 full-color illustrations, 200 fully worked examples, hundreds of end-of-chapter homework problems and detailed computational examples of DSP algorithms implemented in MATLAB® and C aid understanding, and help put

knowledge into practice. A wealth of supplementary material accompanies the book online, including interactive programs for instructors, a full set of solutions and MATLAB® laboratory exercises, making this the ideal text for senior undergraduate and graduate courses on digital signal processing.

Advances in Audio and Speech Signal Processing: Technologies and Applications - Perez-Meana, Hector 2007-02-28

"This book provides a comprehensive approach of signal processing tools regarding the enhancement, recognition, and protection of speech and audio signals. It offers researchers and practitioners the information they need to develop and implement efficient signal processing algorithms in the enhancement field"--Provided by publisher.

Digital Signal Processing - Winser Alexander 2016-11-14

Digital signal processing (DSP) has been applied to a very wide range of applications. This includes voice processing, image processing, digital communications, the transfer of data over the internet, image and data compression, etc. Engineers who develop DSP applications today, and in the future, will need to address many implementation issues including mapping algorithms to computational structures, computational efficiency, power dissipation, the effects of finite precision arithmetic, throughput and hardware implementation. It is not practical to cover all of these in a single text. However, this text emphasizes the practical implementation of DSP algorithms as well as the fundamental theories and analytical procedures that form the basis for modern DSP applications. Digital Signal Processing: Principles, Algorithms and System Design provides an introduction to the principals of digital signal processing along with a balanced analytical and practical treatment of algorithms and applications for digital signal processing. It is intended to serve as a suitable

text for a one semester junior or senior level undergraduate course. It is also intended for use in a following one semester first-year graduate level course in digital signal processing. It may also be used as a reference by professionals involved in the design of embedded computer systems, application specific integrated circuits or special purpose computer systems for digital signal processing, multimedia, communications, or image processing. Covers fundamental theories and analytical procedures that form the basis of modern DSP Shows practical implementation of DSP in software and hardware Includes Matlab for design and implementation of signal processing algorithms and related discrete time systems Bridges the gap between reference texts and the knowledge needed to implement DSP applications in software or hardware

Information Systems Design and Intelligent Applications - Vikrant Bhateja 2018-03-01

The book is a collection of high-quality peer-reviewed research papers presented at International Conference on Information System Design and Intelligent Applications (INDIA 2017) held at Duy Tan University, Da Nang, Vietnam during 15-17 June 2017. The book covers a wide range of topics of computer science and information technology discipline ranging from image processing, database application, data mining, grid and cloud computing, bioinformatics and many others. The various intelligent tools like swarm intelligence, artificial intelligence, evolutionary algorithms, bio-inspired algorithms have been well applied in different domains for solving various challenging problems.

Speech Coding and Synthesis - W. Bastiaan Kleijn 1995

Hardbound. The fields of speech coding and synthesis have developed rapidly over the last decade. Text-to-text speech systems now produce reasonable quality speech, and currently available speech

coders can transmit good quality speech at below 10kb/s. This, in combination with the ever-increasing speed of microprocessors and signal processing hardware, has resulted in a large number of practical applications. These applications in turn have stimulated research, and the number of papers published on speech coding and synthesis have proliferated rapidly. Reflecting periodically on such developments have inspired the publication of this book. Topics such as the effect of cross channel errors on coded speech and the determination of a proper pitch contour for synthesized speech are included.Both readers unfamiliar with the fields of speech coding and speech synthesis as well as those already working within the areas, will find the book of interest.

Advances in Multirate Systems - Gordana Jovanovic Dolecek 2017-09-09

This book offers readers a single-source reference to the implementation aspects of multirate systems, advances in design of comb decimation filters and multirate filter banks. The authors describe a variety of the most recent applications in fields such as, image and video processing, digital communications, software and cognitive radio.

Multirate Statistical Signal Processing - Omid S. Jahromi 2007-05-15

Multirate Statistical Signal Processing introduces a statistical theory for extracting information from related signals with different sampling rates. This new theory generalizes the conventional deterministic theory of multirate systems beyond many of its constraints. Further, it allows for the formulation and solution of new problems: spectrum estimation, time-delay estimation and sensor fusion in the realm of multirate signal processing. This self-contained book presents background material, potential applications and leading-edge research.

Applied Digital Signal Processing - Dimitris G. Manolakis 2011-11-21

Master the basic concepts and methodologies of digital signal processing with this systematic introduction, without the need for an extensive mathematical background. The authors lead the reader through the fundamental mathematical principles underlying the operation of key signal processing techniques, providing simple arguments and cases rather than detailed general proofs. Coverage of practical implementation, discussion of the limitations of particular methods and plentiful MATLAB illustrations allow readers to better connect theory and practice. A focus on algorithms that are of theoretical importance or useful in real-world applications ensures that students cover material relevant to engineering practice, and equips students and practitioners alike with the basic principles necessary to apply DSP techniques to a variety of applications. Chapters include worked examples, problems and computer experiments, helping students to absorb the material they have just read. Lecture slides for all figures and solutions to the numerous problems are available to instructors.

Foundations of Signal Processing - Martin Vetterli 2014-09-04

This comprehensive and engaging textbook introduces the basic principles and techniques of signal processing, from the fundamental ideas of signals and systems theory to real-world applications. Students are introduced to the powerful foundations of modern signal processing, including the basic geometry of Hilbert space, the mathematics of Fourier transforms, and essentials of sampling, interpolation, approximation and compression The authors discuss real-world issues and hurdles to using these tools, and ways of adapting them to overcome problems of finiteness and localization, the limitations of uncertainty, and computational costs. It includes over 160 homework problems and over 220 worked examples,

specifically designed to test and expand students' understanding of the fundamentals of signal processing, and is accompanied by extensive online materials designed to aid learning, including Mathematica® resources and interactive demonstrations.

Big Data in Astronomy - Linghe Kong 2020-06-13

Big Data in Radio Astronomy: Scientific Data Processing for Advanced Radio Telescopes provides the latest research developments in big data methods and techniques for radio astronomy. Providing examples from such projects as the Square Kilometer Array (SKA), the world's largest radio telescope that generates over an Exabyte of data every day, the book offers solutions for coping with the challenges and opportunities presented by the exponential growth of astronomical data. Presenting state-of-the-art results and research, this book is a timely reference for both practitioners and researchers working in radio astronomy, as well as students looking for a basic understanding of big data in astronomy. Bridges the gap between radio astronomy and computer science Includes coverage of the observation lifecycle as well as data collection, processing and analysis Presents state-of-the-art research and techniques in big data related to radio astronomy Utilizes real-world examples, such as Square Kilometer Array (SKA) and Five-hundred-meter Aperture Spherical radio Telescope (FAST)

Cognitive Communications - David Grace 2012-07-25

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.

Digital Signal Processing - K. Deergha Rao 2018-04-14

The book provides a comprehensive exposition of all major topics in digital signal processing (DSP). With numerous illustrative examples for easy understanding of the topics, it also includes MATLAB-based examples with codes in order to encourage the readers

to become more confident of the fundamentals and to gain insights into DSP. Further, it presents real-world signal processing design problems using MATLAB and programmable DSP processors. In addition to problems that require analytical solutions, it discusses problems that require solutions using MATLAB at the end of each chapter. Divided into 13 chapters, it addresses many emerging topics, which are not typically found in advanced texts on DSP. It includes a chapter on adaptive digital filters used in the signal processing problems for faster acceptable results in the presence of changing environments and changing system requirements. Moreover, it offers an overview of wavelets, enabling readers to easily understand the basics and applications of this powerful mathematical tool for signal and image processing. The final chapter explores DSP processors, which is an area of growing interest for researchers. A valuable resource for undergraduate and graduate students, it can also be used for self-study by researchers, practicing engineers and scientists in electronics, communications, and computer engineering as well as for teaching one- to two-semester courses.

Architecture and System Design for Digital Subscriber Loop Communications - Ahmed Farouk Shalash 1998

Terahertz Imaging for Biomedical Applications - Xiaoxia Yin 2012-03-20

Terahertz biomedical imaging has become an area of interest due to its ability to simultaneously acquire both image and spectral information. Terahertz imaging systems are being commercialized, with increasing trials performed in a biomedical setting. As a result, advanced digital image processing algorithms are needed to assist screening, diagnosis, and treatment. "Pattern Recognition and Tomographic Reconstruction" presents these necessary algorithms, which will play a critical role in the accurate

detection of abnormalities present in biomedical imaging. Terhazertz tomographic imaging and detection technology contributes to the ability to identify opaque objects with clear boundaries, and would be useful to both in vivo and ex vivo environments, making this book a must-read for anyone in the field of biomedical engineering and digital imaging.

A Short History of Circuits and Systems - Franco Maloberti 2016-04-26

After an overview of major scientific discoveries of the 18th and 19th centuries, which created electrical science as we know and understand it and led to its useful applications in energy conversion, transmission, manufacturing industry and communications, this Circuits and Systems History book fills a gap in published literature by providing a record of the many outstanding scientists, mathematicians and engineers who laid the foundations of Circuit Theory and Filter Design from the mid-20th Century. Additionally, the book records the history of the IEEE Circuits and Systems Society from its origins as the small Circuit Theory Group of the Institute of Radio Engineers (IRE), which merged with the American Institute of Electrical Engineers (AIEE) to form IEEE in 1963, to the large and broad-coverage worldwide IEEE Society which it is today.Many authors from many countries contributed to the creation of this book, working to a very tight time-schedule. The result is a substantial contribution to their enthusiasm and expertise which it is hoped that readers will find both interesting and useful. It is sure that in such a book omissions will be found and in the space and time available, much valuable material had to be left out. It is hoped that this book will stimulate an interest in the marvellous heritage and contributions that have come from the many outstanding people who worked in the Circuits and Systems area.

Orthogonal Waveforms and Filter Banks for Future

Communication Systems - Markku Renfors 2017-07-12
Orthogonal Waveforms and Filter Banks for Future Communication Systems provides an up-to-date account of orthogonal filter bank-based multicarrier (FBMC) systems and their applications in modern and future communications, highlighting the crucial role that advanced multicarrier waveforms play. It is an up-to-date overview of the theory, algorithms, design and applications of FBMC systems at both the link- and system levels that demonstrates the various gains offered by FBMC over existing transmission schemes via both simulation and test bed experiments. Readers will learn the requirements and challenges of advanced waveform design for future communication systems, existing FBMC approaches, application areas, and their implementation. In addition, the state-of-the-art in PHY- and MAC-layer solutions based on FBMC techniques, including theoretical, algorithmic and implementation aspects are explored.

Wireless AI - K. J. Ray Liu 2019-10-03
An innovative and groundbreaking text explaining how wireless AI can determine position, sense motion and vital signs, and identify events and people.