

Communication Systems Simon Haykin

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An Introduction to Analog and Digital Communications, 2nd Edition John Wiley & Sons
A comprehensive resource guide to digital communications featuring the theories and principles behind advanced communications systems.

Digital Communication Systems Cambridge University Press

The second edition of this accessible book provides readers with an introductory treatment of communication theory as applied to the transmission of information-bearing signals. While it covers analog communications, the emphasis is placed on digital technology. It begins by presenting the functional blocks that constitute the transmitter and receiver of a communication system. Readers will next learn about electrical noise and then progress to multiplexing and multiple access techniques.

Communication Systems Wiley Global Education

Haykin examines both the mathematical theory behind various linear adaptive filters with finite-duration impulse response (FIR) and the elements of supervised neural networks. This edition has been updated and refined to keep current with the field and develop concepts in as unified and accessible a manner as possible. It: introduces a completely new chapter on Frequency-Domain Adaptive Filters; adds a chapter on Tracking Time-Varying Systems; adds two chapters on Neural Networks; enhances material on RLS algorithms; strengthens linkages to Kalman filter theory to gain a more unified treatment of the standard, square-root and order-recursive forms; and includes new computer experiments using MATLAB software that illustrate the underlying theory and applications of the LMS and RLS algorithms.

The Introduction to Analog and Digital Communications 2nd Edition with Wiley Plus Set John Wiley & Sons

A text and general reference on the design and analysis of radar signals As radar technology evolves to encompass a growing spectrum of applications in military, aerospace, automotive, and other sectors, innovations in digital signal processing have risen to meet the demand. Presenting a long overdue, up-to-date, dedicated resource on radar signals, the authors fill a critical gap in radar technology literature. Radar Signals features in-depth coverage of the most prevalent classical and modern radar signals used today, as well as new signal concepts developed in recent years. Inclusion of key MATLAB software codes throughout the book demonstrates how they dramatically simplify the process of describing and analyzing complex signals. Topics covered include:
* Matched filter and ambiguity function concepts * Basic radar signals, with both analytical and numerical analysis * Frequency modulated and phase-coded pulses * Complete discussion of band-limiting schemes * Coherent LFM pulse trains-the most popular radar signal * Diversity in pulse trains, including stepped frequency pulses * Continuous-wave signals * Multicarrier phase-coded signals Combining lucid explanation, preferred signal tables, MATLAB codes, and problem sets in each chapter, Radar Signals is an essential reference for professionals-and a systematic tutorial for any seeking to broaden their knowledge base in this dynamic field.

Communication Systems Addison Wesley Publishing Company

State-of-the-art coverage of Kalman filter methods for the design of neural networks This self-contained book consists of seven chapters by expert contributors that discuss Kalman filtering as applied to the training and use of neural networks. Although the traditional approach to the subject is almost always linear, this book recognizes and deals with the fact that real problems are most often nonlinear. The first chapter offers an introductory treatment of Kalman filters with an emphasis on basic Kalman filter theory, Rauch-Tung-Striebel smoother, and the extended Kalman filter. Other chapters cover: An algorithm for the training of feedforward and recurrent multilayered perceptrons, based on the decoupled extended Kalman filter (DEKF) Applications of the DEKF learning algorithm to the study of image sequences and the dynamic reconstruction of chaotic processes The dual estimation problem Stochastic nonlinear dynamics: the expectation-maximization (EM) algorithm and the extended Kalman smoothing (EKS) algorithm The unscented Kalman filter Each chapter, with the exception of the introduction, includes illustrative applications of the learning algorithms described here, some of which involve the use of simulated and real-life data. Kalman Filtering and Neural Networks serves as an expert resource for researchers in neural networks and nonlinear dynamical systems.

Radar Signals John Wiley & Sons Incorporated

Leading experts present the latest research results in adaptive signal processing Recent developments in signal processing have made it clear that significant performance gains can be achieved beyond those achievable using standard adaptive filtering approaches. Adaptive Signal Processing presents the next generation of algorithms that will produce these desired results, with an emphasis on important applications and theoretical advancements. This highly unique resource brings together leading authorities in the field writing on the key topics of significance, each at the cutting edge of its own area of specialty. It begins by addressing the problem of optimization in the complex domain, fully developing a framework that enables taking full advantage of the power of complex-valued processing. Then, the challenges of multichannel processing of complex-valued signals are explored. This comprehensive volume goes on to cover

Turbo processing, tracking in the subspace domain, nonlinear sequential state estimation, and speech-bandwidth extension. Examines the seven most important topics in adaptive filtering that will define the next-generation adaptive filtering solutions Introduces the powerful adaptive signal processing methods developed within the last ten years to account for the characteristics of real-life data: non-Gaussianity, non-circularity, non-stationarity, and non-linearity Features self-contained chapters, numerous examples to clarify concepts, and end-of-chapter problems to reinforce understanding of the material Contains contributions from acknowledged leaders in the field Adaptive Signal Processing is an invaluable tool for graduate students, researchers, and practitioners working in the areas of signal processing, communications, controls, radar, sonar, and biomedical engineering.

Communication systems Springer Nature

Combines the latest trends in spectrum sharing, both from a research and a standards/regulation/experimental standpoint Written by noted professionals from academia, industry, and research labs, this unique book provides a comprehensive treatment of the principles and architectures for spectrum sharing in order to help with the existing and future spectrum crunch issues. It presents readers with the most current standardization trends, including CEPT / CEE, eLSA, CBRS, MulteFire, LTE-Unlicensed (LTE-U), LTE WLAN integration with Internet Protocol security tunnel (LWIP), and LTE/Wi-Fi aggregation (LWA), and offers substantial trials and experimental results, as well as system-level performance evaluation results. The book also includes a chapter focusing on spectrum policy reinforcement and another on the economics of spectrum sharing. Beginning with the historic form of cognitive radio, Spectrum Sharing: The Next Frontier in Wireless Networks continues with current standardized forms of spectrum sharing, and reviews all of the technical ingredients that may arise in spectrum sharing approaches. It also looks at policy and implementation aspects and ponders the future of the field. White spaces and data base-assisted spectrum sharing are discussed, as well as the licensed shared access approach and cooperative communication techniques. The book also covers reciprocity-based beam forming techniques for spectrum sharing in MIMO networks; resource allocation for shared spectrum networks; large scale wireless spectrum monitoring; and much more. Contains all the latest standardization trends, such as CEPT / ECC, eLSA, CBRS, MulteFire, LTE-Unlicensed (LTE-U), LTE WLAN integration with Internet Protocol security tunnel (LWIP) and LTE/Wi-Fi aggregation (LWA) Presents a number of emerging technologies for future spectrum sharing (collaborative sensing, cooperative communication, reciprocity-based beamforming, etc.), as well as novel spectrum sharing paradigms (e.g. in full duplex and radar systems) Includes substantial trials and experimental results, as well as system-level performance evaluation results Contains a dedicated chapter on spectrum policy reinforcement and one on the economics of spectrum sharing Edited by experts in the field, and featuring contributions by respected professionals in the field world wide Spectrum Sharing: The Next Frontier in Wireless Networks is highly recommended for graduate students and researchers working in the areas of wireless communications and signal processing engineering. It would also benefit radio communications engineers and practitioners.

COMMUNICATION SYSTEMS, 4TH ED John Wiley & Sons

This collaborative work presents the results of over twenty years of pioneering research by Professor Simon Haykin and his colleagues, dealing with the use of adaptive radar signal processing to account for the nonstationary nature of the environment. These results have profound implications for defense-related signal processing and remote sensing. References are provided in each chapter guiding the reader to the original research on which this book is based.

Communication Systems John Wiley & Sons

Design and MATLAB concepts have been integrated in text. ? Integrates applications as it relates signals to a remote sensing system, a controls system, radio astronomy, a biomedical system and seismology.

Communication Systems Engineering John Wiley & Sons

Edited by the original inventor of the technology. Includes contributions by the foremost experts in the field. The only book to cover these topics together.

SIGNALS AND SYSTEMS, 2ND ED John Wiley & Sons

Offering comprehensive, up-to-date coverage on the principles of digital communications, this book focuses on basic issues, relating theory to practice wherever possible. Topics covered include the sampling process, digital modulation techniques and error-control coding.

Outlines and Highlights for Communication Systems by Simon Haykin
Academic Internet Pub Incorporated

Thorough coverage of basic digital communication system principles ensures that readers are exposed to all basic relevant topics in digital communication system design. The use of CD player and JPEG image coding standard as examples of systems that employ modern communication principles allows readers to relate the theory to practical systems. Over 180 worked-out examples throughout the book aids readers in understanding basic concepts. Over 480 problems involving applications to practical systems such as satellite communications systems, ionospheric channels, and mobile radio channels gives readers ample opportunity to practice the concepts they have just learned. With an emphasis on digital communications, *Communication Systems Engineering, Second Edition* introduces the basic principles underlying the analysis and design of communication systems. In addition, this book gives a solid introduction to analog communications and a review of important mathematical foundation topics. New material has been added on wireless communication systems—GSM and CDMA/IS-94; turbo codes and iterative decoding; multicarrier (OFDM) systems; multiple antenna systems. Includes thorough coverage of basic digital communication system principles—including source coding, channel coding, baseband and carrier modulation, channel distortion, channel equalization, synchronization, and wireless communications. Includes basic coverage of analog modulation such as amplitude modulation, phase modulation, and frequency modulation as well as demodulation methods. For use as a reference for electrical engineers for all basic relevant topics in digital communication system design.

Solutions Manual to Accompany Digital Communications Walter de Gruyter

Detail Practice: Building with Steel is a handbook for quick, goal-oriented reading and implementation. Case study projects exemplify common norm details using large-scale drawings. The fundamentals of planning load-bearing structures provide design and planning help. This is supplemented by explanations of common load-bearing structures using examples of residential, office, hall and industrial buildings. Issues of fire safety and building physics particularly relevant to steel construction are treated alongside the use of steel as a material for cladding facades.

Computational and Statistical Methods in Intelligent Systems Pearson Education India

This book presents real-world problems and pioneering research in computational statistics, mathematical modeling, artificial intelligence and software engineering in the context of intelligent systems. It gathers the peer-reviewed proceedings of the 2nd Computational Methods in Systems and Software 2018 (CoMeSySo 2018), a conference that broke down traditional barriers by being held online. The goal of the event was to provide an international forum for discussing the latest high-quality research results.

Introduction to Communication Systems New York ; Toronto : Wiley
Market_Desc: Electrical Engineers Special Features: · Design and MATLAB concepts have been integrated in the text· Integrates applications as it relates signals to a remote sensing system, a controls system, radio astronomy, a biomedical system and seismology About The Book: The text provides a balanced and integrated treatment of continuous-time and discrete-time forms of signals and systems intended to reflect their roles in engineering practice. This approach has the pedagogical advantage of helping the reader see the fundamental similarities and differences between discrete-time and continuous-time representations. It includes a discussion of filtering, modulation and feedback by building on the fundamentals of signals and systems covered in earlier chapters of the book.

Modern Wireless Communications Springer

An introductory treatment of communication theory as applied to the transmission of information-bearing signals with attention given to both analog and digital communications. Chapter 1 reviews basic concepts. Chapters 2 through 4 pertain to the characterization of signals and systems. Chapters 5 through 7 are concerned with transmission of message signals over communication channels. Chapters 8 through 10 deal with noise in analog and digital communications. Each chapter (except chapter 1) begins with introductory remarks and ends with a problem set. Treatment is self-contained with numerous worked-out examples to support the theory.· Fourier Analysis · Filtering and Signal Distortion · Spectral Density and Correlation · Digital Coding of Analog Waveforms · Intersymbol Interference and Its Cures · Modulation Techniques · Probability Theory and Random Processes · Noise in Analog Modulation · Optimum Receivers for Data Communication

Digital Communication Systems Wiley-Liss

This undergraduate textbook has been revised to include updated information on digital communication, while preserving its introduction to Fourier analysis. In addition, a new appendix has been added on cryptography.

Fundamentals of Cognitive Radio John Wiley & Sons

About The Book: This best-selling, easy to read, communication systems book has been extensively revised to include an exhaustive treatment of digital communications. Throughout, it emphasizes the statistical underpinnings of communication theory in a complete and detailed manner.

Spectrum Sharing John Wiley & Sons

Offers the most complete, up-to-date coverage available on the principles of digital communications. Focuses on basic issues, relating theory to practice wherever possible. Numerous examples, worked out in detail, have been included to help the reader develop an intuitive grasp of the theory. Topics covered include the sampling process, digital modulation techniques, error-control coding, robust quantization for pulse-code modulation, coding speech at low bit radio, information theoretic concepts, coding and computer communication. Because the book covers a broad range of topics in digital communications, it should satisfy a variety of backgrounds and interests.

Communication Systems 2ed John Wiley & Sons

A comprehensive treatment of cognitive radio networks and the specialized techniques used to improve wireless communications The human brain, as exemplified by cognitive radar, cognitive radio, and cognitive computing, inspires the field of Cognitive Dynamic Systems. In particular, cognitive radio is growing at an exponential rate. *Fundamentals of Cognitive Radio* details different aspects of the human brain and provides examples of how it can be mimicked by cognitive dynamic systems. The text offers a communication-theoretic background, including information on resource allocation in wireless networks and the concept of robustness. The authors provide a thorough mathematical background with data on game theory, variational inequalities, and projected dynamic systems. They then delve more deeply into resource allocation in cognitive radio networks. The text investigates the dynamics of cognitive radio networks from the perspectives of information theory, optimization, and control theory. It also provides a vision for the new world of wireless communications by integration of cellular and cognitive radio networks. This groundbreaking book: Shows how wireless communication systems increasingly use cognition to enhance their networks Explores how cognitive radio networks can be viewed as spectrum supply chain networks Derives analytic models for two complementary regimes for spectrum sharing (open-access and market-driven) to study both equilibrium and disequilibrium behaviors of networks Studies cognitive heterogeneous networks with emphasis on economic provisioning for resource sharing Introduces a framework that addresses the issue of spectrum sharing across licensed and unlicensed bands aimed for Pareto optimality Written for students of cognition, communication engineers, telecommunications professionals, and others, *Fundamentals of Cognitive Radio* offers a new generation of ideas and provides a fresh way of thinking about cognitive techniques in order to improve radio networks.