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JORDON STEPHANIE

Fundamentals and Applications Springer

This supplement to any standard DSP text is one of the first books to successfully integrate the use of MATLAB® in the study of DSP concepts. In this book, MATLAB® is used as a computing tool to explore traditional DSP topics, and solve problems to gain insight. This greatly expands the range and complexity of problems that students can effectively study in the course. Since DSP applications are primarily algorithms implemented on a DSP processor or software, a fair amount of programming is required. Using interactive software such as MATLAB® makes it possible to place more emphasis on learning new and difficult concepts than on programming algorithms. Interesting practical examples are discussed and useful problems are explored. This updated second edition includes new homework problems and revises the scripts in the book, available functions, and m-files to MATLAB® V7.

A Wavelet-based Approach Oxford Series in Electrical and Computer Engineering
Window functions—otherwise known as weighting functions, tapering functions, or apodization functions—are mathematical functions that are zero-valued outside the chosen interval. They are well established as a vital part of digital signal processing. Window Functions and their Applications in Signal Processing presents an exhaustive and detailed account of window functions and their applications in signal processing, focusing on the areas of digital spectral analysis, design of FIR filters, pulse compression radar, and speech signal processing.

Comprehensively reviewing previous research and recent developments, this book: Provides suggestions on how to choose a window function for particular applications Discusses Fourier analysis techniques and pitfalls in the computation of the DFT Introduces window functions in the continuous-time and discrete-time domains Considers two implementation strategies of window functions in the time- and frequency domain Explores well-known applications of window functions in the fields of radar, sonar, biomedical signal analysis, audio processing, and synthetic aperture radar

Think DSP CRC Press

Some applications of digital signal processing in telecommunications. Digital processing in audio signals. Digital processing of speech. Digital image processing. Applications of digital signal processing to radar. Sonar signal processing. Digital signal processing in geophysics.

A Computer Based Approach McGraw-Hill

Highly acclaimed teacher and researcher Porat presents a clear, approachable text for senior and first-year graduate level DSP courses. Principles are reinforced through the use of MATLAB programs and application-oriented problems.

Principles and Applications CRC Press

New edition of a text intended primarily for the undergraduate courses on the subject which are frequently found in electrical engineering curricula—but the concepts and techniques it covers

are also of fundamental importance in other engineering disciplines. The book is structured to develop in parallel the methods of analysis for continuous-time and discrete-time signals and systems, thus allowing exploration of their similarities and differences. Discussion of applications is emphasized, and numerous worked examples are included. Annotation copyrighted by Book News, Inc., Portland, OR

Signal Processing First Ane Books Pvt Ltd

A comprehensive set of computer exercises of varying levels of difficulty covering the fundamentals of signals and systems. The exercises require the reader to compare answers they compute in MATLAB (R) with results and predictions made based on their understanding of material. KEY TOPICS: Chapter covered include Signals and Systems; Linear Time-Invariant Systems; Fourier Series Representation of Periodic Signals; The Continuous-Time Fourier Transform; The Discrete-Time Fourier Transform; Time and Frequency Analysis of Signals and Systems; Sampling; Communications Systems; The Laplace Transform; The z-Transform; Feedback Systems. MARKET: For readers interested in signals and linear systems.

Digital Signal Processing Wiley-Interscience

In the past few years Biomedical Engineering has received a great deal of attention as one of the emerging technologies in the last decade and for years to come, as witnessed by the many books, conferences, and their proceedings. Media attention, due to the applications-oriented advances in Biomedical Engineering, has also increased. Much of the excitement comes from the fact that technology is rapidly changing and new technological adventures become available and feasible every day. For many years the physical sciences contributed to medicine in the form of expertise in radiology and slow but steady contributions to other more diverse fields, such as computers in surgery and diagnosis, neurology, cardiology, vision and visual prosthesis, audition and hearing aids, artificial limbs, biomechanics, and biomaterials. The list goes on. It is therefore hard for a person unfamiliar with a subject to separate the substance from the hype. Many of the applications of Biomedical Engineering are rather complex and difficult to understand even by the not so novice in the field.

Much of the hardware and software tools available are either too simplistic to be useful or too complicated to be understood and applied. In addition, the lack of a common language between engineers and computer scientists and their counterparts in the medical profession, sometimes becomes a barrier to progress.

Everything You Need to Know to Get Started McGraw-Hill

Companies

This book covers the fundamental concepts in signal processing illustrated with Python code and made available via IPython Notebooks, which are live, interactive, browser-based documents that allow one to change parameters, redraw plots, and tinker with the ideas presented in the text. Everything in the text is computable in this format and thereby invites readers to

“experiment and learn” as they read. The book focuses on the core, fundamental principles of signal processing. The code corresponding to this book uses the core functionality of the scientific Python toolchain that should remain unchanged into the foreseeable future. For those looking to migrate their signal processing codes to Python, this book illustrates the key signal and plotting modules that can ease this transition. For those already comfortable with the scientific Python toolchain, this book illustrates the fundamental concepts in signal processing and provides a gateway to further signal processing concepts.

Continuous and Discrete Time Signals and Systems

International Student Edition Cambridge University Press
Digital Signal Processing, Second Edition enables electrical engineers and technicians in the fields of biomedical, computer, and electronics engineering to master the essential fundamentals of DSP principles and practice. Many instructive worked examples are used to illustrate the material, and the use of mathematics is minimized for easier grasp of concepts. As such, this title is also useful to undergraduates in electrical engineering, and as a reference for science students and practicing engineers. The book goes beyond DSP theory, to show implementation of algorithms in hardware and software. Additional topics covered include adaptive filtering with noise reduction and echo cancellations, speech compression, signal sampling, digital filter realizations, filter design, multimedia applications, over-sampling, etc. More advanced topics are also covered, such as adaptive filters, speech compression such as PCM, u-law, ADPCM, and multi-rate DSP and over-sampling ADC. New to this edition: MATLAB projects dealing with practical applications added throughout the book New chapter (chapter 13) covering sub-band coding and wavelet transforms, methods that have become popular in the DSP field New applications included in many chapters, including applications of DFT to seismic signals, electrocardiography data, and vibration signals All real-time C programs revised for the TMS320C6713 DSK Covers DSP principles with emphasis on communications and control applications Chapter objectives, worked examples, and end-of-chapter exercises aid the reader in grasping key concepts and solving related problems Website with MATLAB programs for simulation and C programs for real-time DSP

Schaum's Outline of Digital Signal Processing John Wiley & Sons
This text provides a broad introduction to the field of digital signal processing and contains sufficient material for a two-semester sequence in this multifaceted subject. It is also written with the practicing engineer or scientist in mind, having many observations and examples of practical significance drawn from the author's industrial experience. The first semester, at the junior, senior, or first-year graduate level, could cover chapters 2 through 7 with topics perhaps from chapters 8 and 9, depending upon the background of the students. The only requisite background is linear systems theory for continuous-time systems, including Fourier and Laplace transforms. Many students will also have had some previous exposure to discrete-time systems, in which case chapters 2 through 4 may serve to review and expand that preparation. Note, in particular, that knowledge of probability theory and random processes is not required until chapters 10 and 11, except for section 7.6 on the periodogram. A second, advanced course could utilize material from chapters 8 through 13. A comprehensive one-semester course for suitably prepared graduate students might cover chapters 4 through 9 and additional topics from chapters 10 through 13. Sections marked with a dagger (†) cover advanced or specialized topics and may be skipped without loss of continuity. Notable features of the book include the following: 1. Numerous useful filter examples early in the text in chapters 4 and 5. 2. State-space

representation and structures in chapters 4 and 11.

Signals & Systems McGraw-Hill Companies

Unique book/disk set that makes PLL circuit design easier than ever. Table of Contents: PLL Fundamentals; Classification of PLL Types; The Linear PLL (LPLL); The Classical Digital PLL (DPLL); The All-Digital PLL (ADPLL); The Software PLL (SPLL); State Of The Art of Commercial PLL Integrated Circuits; Appendices; Index.

Includes a 5 1/4" disk. 100 illustrations.

A Practical Approach Pearson Education

Digital Signal Processing 101: Everything You Need to Know to Get Started provides a basic tutorial on digital signal processing (DSP). Beginning with discussions of numerical representation and complex numbers and exponentials, it goes on to explain difficult concepts such as sampling, aliasing, imaginary numbers, and frequency response. It does so using easy-to-understand examples with minimum mathematics. In addition, there is an overview of the DSP functions and implementation used in several DSP-intensive fields or applications, from error correction to CDMA mobile communication to airborne radar systems. This book has been updated to include the latest developments in Digital Signal Processing, and has eight new chapters on: Automotive Radar Signal Processing Space-Time Adaptive Processing Radar Field Orientated Motor Control Matrix Inversion algorithms GPUs for computing Machine Learning Entropy and Predictive Coding Video compression Features eight new chapters on Automotive Radar Signal Processing, Space-Time Adaptive Processing Radar, Field Orientated Motor Control, Matrix Inversion algorithms, GPUs for computing, Machine Learning, Entropy and Predictive Coding, and Video compression Provides clear examples and a non-mathematical approach to get you up to speed quickly Includes an overview of the DSP functions and implementation used in typical DSP-intensive applications, including error correction, CDMA mobile communication, and radar systems

Instructor's Manual Pearson Education

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.

Python for Signal Processing Addison Wesley Longman

Confusing Textbooks? Missed Lectures? Not Enough Time? Fortunately for you, there's Schaum's Outlines. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you Practice problems with full explanations that reinforce knowledge Coverage of the most up-to-date developments in your course field In-depth review of

practices and applications Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time-and get your best test scores! Schaum's Outlines-Problem Solved.

Applied Digital Signal Processing Discrete-time Signal Processing

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

Window Functions and Their Applications in Signal Processing
Pearson Higher Ed

Fractal geometry and recent developments in wavelet theory are having an important impact on the field of signal processing. Efficient representations for fractal signals based on wavelets are opening up new applications for signal processing, and providing better solutions to problems in existing applications. Signal Processing with Fractals provides a valuable introduction to this new and exciting area, and develops a powerful conceptual foundation for understanding the topic. Practical techniques for synthesizing, analyzing, and processing fractal signals for a wide range of applications are developed in detail, and novel applications in communications are explored.

Theory and Practice Pearson

For senior/graduate-level courses in Discrete-Time Signal Processing. THE definitive, authoritative text on DSP — ideal for those with an introductory-level knowledge of signals and systems. Written by prominent DSP pioneers, it provides thorough treatment of the fundamental theorems and properties

of discrete-time linear systems, filtering, sampling, and discrete-time Fourier Analysis. By focusing on the general and universal concepts in discrete-time signal processing, it remains vital and relevant to the new challenges arising in the field.

Digital Signal Processing Cambridge University Press

Introduction to digital filters. Finite impulse-response filters. Design of linear-phase finite impulse-response. Minimum-phase and complex approximation. Implementation of finite impulse-response filters. Properties of infinite impulse-response filters. Design of infinite impulse-response filters. Implementation of infinite impulse-response filters. Programs.

Pearson

If you understand basic mathematics and know how to program with Python, you're ready to dive into signal processing. While most resources start with theory to teach this complex subject, this practical book introduces techniques by showing you how they're applied in the real world. In the first chapter alone, you'll be able to decompose a sound into its harmonics, modify the harmonics, and generate new sounds. Author Allen Downey explains techniques such as spectral decomposition, filtering, convolution, and the Fast Fourier Transform. This book also provides exercises and code examples to help you understand the material. You'll explore: Periodic signals and their spectrums Harmonic structure of simple waveforms Chirps and other sounds whose spectrum changes over time Noise signals and natural sources of noise The autocorrelation function for estimating pitch The discrete cosine transform (DCT) for compression The Fast Fourier Transform for spectral analysis Relating operations in time to filters in the frequency domain Linear time-invariant (LTI) system theory Amplitude modulation (AM) used in radio Other books in this series include Think Stats and Think Bayes, also by Allen Downey.

Digital Signal Processing Handbook on CD-ROM Prentice Hall

Discrete-time Signal Processing Prentice Hall