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Schaum's Outline of Signals and Systems, Second Edition Prentice Hall

[From the Preface] This is a signals and systems textbook with a difference: Engineering applications of signals and systems are integrated into the presentation as equal partners with concepts and mathematical models, instead of just presenting the concepts and models and leaving the student to wonder how it all relates to engineering. The first six chapters of this textbook cover the usual basic concepts of continuous-time signals and systems, including the Laplace and Fourier transforms. Chapters 7 and 8 present the discrete-time version of Chapters 1-6, emphasizing the similarities and analogies, and often using continuous-time results to derive discrete-time results. The two chapters serve to introduce the reader to the world of discrete-time signals and systems. Concepts highlighted in Chapters 1-8 include: compensator feedback configuration (Ch. 4); energy spectral density, group delay, expanded coverage of exponential Fourier series (Ch. 5); filtering of images, Hilbert transform, single-sideband (SSB), zero and first-order hold interpolation (Ch. 6); the Cooley-Tukey FFT (Ch. 7); bilateral z-transform and use for non-minimum-phase deconvolution (Ch. 8). Chapter 9 covers the usual concepts of discrete-time signal processing, including data windows, FIR and IIR filter design, multirate signal processing, and auto-correlation and crosscorrelation. It also includes some nontraditional concepts, including spectrograms, application of multirate signal processing, and the musical circle of fifths to audio signal processing, and some biomedical applications of autocorrelation and cross-correlation. Chapter 10 covers image processing, discrete-time wavelets (including the Smith-Barnwell condition and the Haar and Daubechies discrete-time wavelet expansions), and an introduction to compressed sensing. This is the first sophomore-junior level textbook the authors are aware of that allows students to apply compressed sensing concepts. Applications include: image denoising using 2-D filtering; image denoising using thresholding and shrinkage of image wavelet transforms; image deconvolution using Wiener filters; "valid" image deconvolution using ISTA; image inpainting; tomography and the projection-slice theorem, and image reconstruction from partial knowledge of 2-D DFT values. Problems allow students to apply these techniques to actual images and learn by doing, not by only reading.

Hydrogeophysics Springer Science & Business Media

This ground-breaking work is the first to cover the fundamentals of hydrogeophysics from both the hydrogeological and geophysical perspectives. Authored by leading experts and expert groups, the book starts out by explaining the fundamentals of hydrological characterization, with focus on hydrological data acquisition and measurement analysis as well as geostatistical approaches. The fundamentals of geophysical characterization are then at length, including the geophysical techniques that are often used for hydrogeological characterization. Unlike other books, the geophysical methods and petrophysical discussions presented here emphasize the theory, assumptions, approaches, and interpretations that are particularly important for hydrogeological applications. A series of hydrogeophysical case studies illustrate hydrogeophysical approaches for mapping hydrological units, estimation of hydrogeological parameters, and monitoring of hydrogeological processes. Finally, the book concludes with hydrogeophysical frontiers, i.e. on emerging technologies and stochastic hydrogeophysical inversion approaches.

Microwave Engineering Springer Science & Business Media

Principles of Modern Radar: Basic Principles is a comprehensive text for courses in radar systems and technology, a professional training textbook for formal in-house courses and for new hires; a reference for ongoing study following a radar short course and a self-study and professional reference book.

Optoelectronic Integrated Circuit Design and Device Modeling John Wiley & Sons

Modelling and computations in electromagnetics is a quite fast-growing research area. The recent interest in this field is caused by the increased demand for designing complex microwave components, modeling electromagnetic materials, and rapid increase in computational power for calculation of complex electromagnetic problems. The first part of

this book is devoted to the advances in the analysis techniques such as method of moments, finite-difference time-domain method, boundary perturbation theory, Fourier analysis, mode-matching method, and analysis based on circuit theory. These techniques are considered with regard to several challenging technological applications such as those related to electrically large devices, scattering in layered structures, photonic crystals, and artificial materials. The second part of the book deals with waveguides, transmission lines and transitions. This includes microstrip lines (MSL), slot waveguides, substrate integrated waveguides (SIW), vertical transmission lines in multilayer media as well as MSL to SIW and MSL to slot line transitions.

Spin Waves McGraw-Hill

The new Second Edition of *A First Course in Complex Analysis with Applications* is a truly accessible introduction to the fundamental principles and applications of complex analysis. Designed for the undergraduate student with a calculus background but no prior experience with complex variables, this text discusses theory of the most relevant mathematical topics in a student-friendly manner. With Zill's clear and straightforward writing style, concepts are introduced through numerous examples and clear illustrations. Students are guided and supported through numerous proofs providing them with a higher level of mathematical insight and maturity. Each chapter contains a separate section on the applications of complex variables, providing students with the opportunity to develop a practical and clear understanding of complex analysis.

Head First C# John Wiley & Sons

Geomatics is a neologism, the use of which is becoming increasingly widespread, even if it is not still universally accepted. It includes several disciplines and techniques for the study of the Earth's surface and its environments, and computer science plays a decisive role. A more meaningful and appropriate expression is Geo-spatial Information or GeoInformation. Geo-spatial Information embeds topography in its more modern forms (measurements with electronic instrumentation, sophisticated techniques of data analysis and network compensation, global satellite positioning techniques, laser scanning, etc.), analytical and digital photogrammetry, satellite and airborne remote sensing, numerical cartography, geographical information systems, decision support systems, WebGIS, etc. These specialized fields are intimately interrelated in terms of both the basic science and the results pursued: rigid separation does not allow us to discover several common aspects and the fundamental importance assumed in a search for solutions in the complex survey context. The objective pursued by Mario A. Gomarasca, one that is only apparently modest, is to publish an integrated text on the surveying theme, containing simple and comprehensible concepts relevant to experts in Geo-spatial Information and/or specially in one of the disciplines that compose it. At the same time, the book is rigorous and synthetic, describing with precision the main instruments and methods connected to the multiple techniques available today.

Antenna Design for Mobile Devices Springer Science & Business Media

A comprehensive, modern introduction to electromagnetism This graduate-level physics textbook provides a comprehensive treatment of the basic principles and phenomena of classical electromagnetism. While many electromagnetism texts use the subject to teach mathematical methods of physics, here the emphasis is on the physical ideas themselves. Anupam Garg distinguishes between electromagnetism in vacuum and that in material media, stressing that the core physical questions are different for each. In vacuum, the focus is on the fundamental content of electromagnetic laws, symmetries, conservation laws, and the implications for phenomena such as radiation and light. In material media, the focus is on understanding the response of the media to imposed fields, the attendant constitutive relations, and the phenomena encountered in different types of media such as dielectrics, ferromagnets, and conductors. The text includes applications to many topical subjects, such as magnetic levitation, plasmas, laser beams, and synchrotrons. *Classical Electromagnetism in a Nutshell* is ideal for a yearlong graduate course and features more than 300 problems, with solutions to many of the advanced ones. Key formulas are given in both SI and Gaussian units; the book includes a discussion of how to convert between them, making it accessible to adherents of both systems. Offers a complete treatment of classical electromagnetism Emphasizes physical ideas Separates the treatment of electromagnetism in vacuum and material media Presents key formulas in both SI and Gaussian units Covers applications to other areas of physics Includes more than 300 problems

Fundamentals of Applied Electromagnetics O'Reilly Media, Inc.

Wireless localization techniques are an area that has attracted interest from both industry and academia, with self-localization capability providing a highly desirable characteristic of wireless sensor networks. *Localization Algorithms and Strategies for Wireless Sensor Networks* encompasses the significant and fast growing area of wireless localization techniques. This book

provides comprehensive and up-to-date coverage of topics and fundamental theories underpinning measurement techniques and localization algorithms. A useful compilation for academicians, researchers, and practitioners, this Premier Reference Source contains relevant references and the latest studies emerging out of the wireless sensor network field.

A First Course in Complex Analysis with Applications SciTech Publishing

As the availability of powerful computer resources has grown over the last three decades, the art of computation of electromagnetic (EM) problems has also grown - exponentially. Despite this dramatic growth, however, the EM community lacked a comprehensive text on the computational techniques used to solve EM problems. The first edition of *Numerical Techniques in Electromagnetics* filled that gap and became the reference of choice for thousands of engineers, researchers, and students. The Second Edition of this bestselling text reflects the continuing increase in awareness and use of numerical techniques and incorporates advances and refinements made in recent years. Most notable among these are the improvements made to the standard algorithm for the finite difference time domain (FDTD) method and treatment of absorbing boundary conditions in FDTD, finite element, and transmission-line-matrix methods. The author also added a chapter on the method of lines. *Numerical Techniques in Electromagnetics* continues to teach readers how to pose, numerically analyze, and solve EM problems, give them the ability to expand their problem-solving skills using a variety of methods, and prepare them for research in electromagnetism. Now the Second Edition goes even further toward providing a comprehensive resource that addresses all of the most useful computation methods for EM problems.

Low-Noise Systems in the Deep Space Network Springer Nature

The fourth edition of *CMOS Digital Integrated Circuits: Analysis and Design* continues the well-established tradition of the earlier editions by offering the most comprehensive coverage of digital CMOS circuit design, as well as addressing state-of-the-art technology issues highlighted by the widespread use of nanometer-scale CMOS technologies. In this latest edition, virtually all chapters have been re-written, the transistor model equations and device parameters have been revised to reflect the significant changes that must be taken into account for new technology generations, and the material has been reinforced with up-to-date examples. The broad-ranging coverage of this textbook starts with the fundamentals of CMOS process technology, and continues with MOS transistor models, basic CMOS gates, interconnect effects, dynamic circuits, memory circuits, arithmetic building blocks, clock and I/O circuits, low power design techniques, design for manufacturability and design for testability.

Electromagnetic Waves Springer Nature

This book is a self-contained introduction to the theory of signals and systems, which lies at the basis of many areas of electrical and computer engineering. In the seventy short lectures, formatted to facilitate self-learning and to provide easy reference, the book covers such topics as linear time-invariant (LTI) systems, the Fourier transform, the Laplace Transform and its application to LTI differential systems, state-space systems, the z-transform, signal analysis using MATLAB, and the application of transform techniques to communication systems. A wide array of technologies, including feedback control, analog and discrete-time filters, modulation, and sampling systems are discussed in connection with their basis in signals and systems theory. The accompanying CD-ROM includes applets, source code, sample examinations, and exercises with selected solutions.

Design of Rotating Electrical Machines John Wiley & Sons

Widely praised for its balanced treatment of computer ethics, *Ethics for the Information Age* offers a modern presentation of the moral controversies surrounding information technology. Topics such as privacy and intellectual property are explored through multiple ethical theories, encouraging readers to think critically about these issues and to make their own ethical decisions. *Fundamentals of Electric Circuits* Michael Adams

Possibly the greatest change confronting the practitioner and student of remote sensing in the period since the first edition of this text appeared in 1986 has been the enormous improvement in accessibility to image processing technology. Falling hardware and software costs, combined with an increase in functionality through the development of extremely versatile user interfaces, has meant that even the user unskilled in computing now has immediate and ready access to powerful and flexible means for digital image analysis and enhancement. An understanding, at algorithmic level, of the various methods for image processing has become therefore even more important in the past few years to ensure the full capability of digital image processing is utilised. This period has also been a busy one in relation to digital data supply. Several nations have become satellite data gatherers and providers, using both optical and microwave technology. Practitioners and researchers are now faced, therefore, with the need to be able to process imagery from several sensors, together with other forms of spatial data. This has been driven, to an extent, by developments in Geographic Information Systems (GIS) which, in turn, have led to the

appearance of newer image processing procedures as adjuncts to more traditional approaches.

Fundamentals of Electromagnetics with MATLAB Springer Science & Business Media

The book explores the low-noise microwave systems that form the front end of all DSN ground receiving stations. It explains why the front end of each antenna is key to establishing the sensitivity, polarization, frequency diversity, and capabilities of the receiving chain and, therefore, the entire ground station.

Circuits IGI Global

Jointly published with INRA, Paris. Pesticide resistance is becoming more frequent and widespread with more than 500 insect species known to have become resistant to synthetic insecticides. On the other hand, consumers increasingly demand agricultural products without any pesticide residues. This book, for the first time, shows the alternative: solely physical methods for plant protection by means of thermal, electromagnetic, mechanical and vacuum processes. A glossary rounds up this extremely valuable book.

Field and Wave Electromagnetics New Age International

For use in an introductory circuit analysis or circuit theory course, this text presents circuit analysis in a clear manner, with many practical applications. It demonstrates the principles, carefully explaining each step.

Schaum's Outline of Signals and Systems John Wiley & Sons

Focuses on the first control systems course of BTech, JNTU, this book helps the student prepare for further studies in modern control system design. It offers a profusion of examples on various aspects of study.

Geospatial Technology for Earth Observation NTS Press

CD-ROM contains: Demonstration exercises -- Complete solutions -- Problem statements.

Media and Crime in the U.S. John Wiley & Sons

This book has focussed on different aspects of smart sensors and sensing technology, i.e. intelligent measurement, information processing, adaptability, recalibration, data fusion, validation, high reliability and integration of novel and high performance sensors in the areas of magnetic, ultrasonic, vision and image sensing, wireless sensors and network, microfluidic, tactile, gyro, flow, surface acoustic wave, humidity and ultra-wide band. While future interest in this field is ensured by the constant supply of emerging modalities, techniques and engineering solutions, as well as an increasing need from aging structures, many of the basic concepts and strategies have already matured and now offer opportunities to build upon. The book has primarily been focussed for postgraduate and research students working on different aspects of design and developments of smart sensors and sensing technology.

Engineering Electromagnetics SAGE Publications

What will you learn from this book? Dive into C# and create apps, user interfaces, games, and more using this fun and highly visual introduction to C#, .NET Core, and Visual Studio. With this completely updated guide, which covers C# 8.0 and Visual Studio 2019, beginning programmers like you will build a fully functional game in the opening chapter. Then you'll learn how to use classes and object-oriented programming, create 3D games in Unity, and query data with LINQ. And you'll do it all by solving puzzles, doing hands-on exercises, and building real-world applications. By the time you're done, you'll be a solid C# programmer--and you'll have a great time along the way! What's so special about this book? Based on the latest research in cognitive science and learning theory, Head First C# uses a visually rich format to engage your mind rather than a text-heavy approach that puts you to sleep. Why waste your time struggling with new concepts? This multisensory learning experience is designed for the way your brain really works.