

Stark Woods Probability Statistics Random Processes

This newly revised edition of a classic Artech House book provides you with a comprehensive and current understanding of signal detection and estimation. Featuring a wealth of new and expanded material, the second edition introduces the concepts of adaptive CFAR detection and distributed CA-CFAR detection. The book provides complete explanations of the mathematics you need to fully master the material, including probability theory, distributions, and random processes.

This authored monograph presents key aspects of signal processing analysis in the biomedical arena. Unlike wireless communication systems, biological entities produce signals with underlying nonlinear, chaotic nature that elude classification using the standard signal processing techniques, which have been developed over the past several decades for dealing primarily with standard communication systems. This book separates what is random from that which appears to be random and yet is truly deterministic with random appearance. At its core, this work gives the reader a perspective on biomedical signals and the means to classify and process such signals. In particular, a review of random processes along with means to assess the behavior of random signals is also provided. The book also includes a general discussion of biological signals in order to demonstrate the inefficacy of the well-known techniques to correctly extract meaningful information from such signals. Finally, a thorough discussion of recently proposed signal processing tools and methods for addressing biological signals is included. The target audience primarily comprises researchers and expert practitioners but the book may also be beneficial for graduate students.

The recent launches of three fully polarimetric synthetic aperture radar (PolSAR) satellites have shown that polarimetric radar imaging can provide abundant data on the Earth's environment, such as biomass and forest height estimation, snow cover mapping, glacier monitoring, and damage assessment. Written by two of the most recognized leaders in this field, *Polarimetric Radar Imaging: From Basics to Applications* presents polarimetric radar imaging and processing techniques and shows how to develop remote sensing applications using PolSAR imaging radar. The book provides a substantial and balanced introduction to the basic theory and advanced concepts of polarimetric scattering mechanisms, speckle statistics and speckle filtering, polarimetric information analysis and extraction techniques, and applications typical to radar polarimetric remote sensing. It explains the importance of wave polarization theory and the speckle phenomenon in the information retrieval problem of microwave imaging and inverse scattering. The authors demonstrate how to devise intelligent information extraction algorithms for remote sensing applications. They also describe more advanced polarimetric analysis techniques for polarimetric target decompositions, polarization orientation effects, polarimetric scattering modeling, speckle filtering, terrain and forest classification, manmade target analysis, and PolSAR interferometry. With sample PolSAR data sets and software available for download, this self-contained, hands-on book encourages you to analyze space-borne and airborne PolSAR and polarimetric interferometric SAR (Pol-InSAR) data and then develop applications using this data.

"Provides a current review of computer processing algorithms for the identification of lesions, abnormal masses, cancer, and disease in medical images. Presents useful examples from numerous imaging modalities for increased recognition of anomalies in MRI, CT, SPECT and digital/film X-Ray."

Probability/Random Processes Responding to the needs of graduate engineers and ABET criteria, this volume illustrates the essentials of both probability and statistics with computer exercises.

This book bridges the gap between theory and applications that currently exist in undergraduate engineering probability textbooks. It offers examples and exercises using data

(sets) in addition to traditional analytical and conceptual ones. Conceptual topics such as one and two random variables, transformations, etc. are presented with a focus on applications. Data analytics related portions of the book offer detailed coverage of receiver operating characteristics curves, parametric and nonparametric hypothesis testing, bootstrapping, performance analysis of machine vision and clinical diagnostic systems, and so on. With Excel spreadsheets of data provided, the book offers a balanced mix of traditional topics and data analytics expanding the scope, diversity, and applications of engineering probability. This makes the contents of the book relevant to current and future applications students are likely to encounter in their endeavors after completion of their studies. A full suite of classroom material is included. A solutions manual is available for instructors. Bridges the gap between conceptual topics and data analytics through appropriate examples and exercises; Features 100's of exercises comprising of traditional analytical ones and others based on data sets relevant to machine vision, machine learning and medical diagnostics; Intersperses analytical approaches with computational ones, providing two-level verifications of a majority of examples and exercises.

This volume contains the proceedings of NOLISP 2009, an ISCA Tutorial and Workshop on Non-Linear Speech Processing held at the University of Vic (Vidua, Spain) during June 25-27, 2009. NOLISP2009 was preceded by three editions of this biannual event held 2003 in Le Croisic (France), 2005 in Barcelona, and 2007 in Paris. The main idea of NOLISP workshops is to present and discuss new ideas, techniques and results related to alternative approaches in speech processing that may depart from the mainstream. In order to work at the front-end of the subject area, the following domains of interest have been defined for NOLISP 2009: 1. Non-linear approximation and estimation 2. Non-linear oscillators and predictors 3. Higher-order statistics 4. Independent component analysis 5. Nearest neighbors 6. Neural networks 7. Decision trees 8. Non-parametric models 9. Dynamics for non-linear systems 10. Fractal methods 11. Chaos modeling 12. Non-linear differential equations The initiative to organize NOLISP 2009 at the University of Vic (UVic) came from the UVic Research Group on Signal Processing and was supported by the Hardware-Software Research Group. We would like to acknowledge the financial support obtained from the Ministry of Science and Innovation of Spain (MICINN), University of Vic, ISCA, and EURASIP. All contributions to this volume are original. They were subject to a double-blind refereeing procedure before their acceptance for the workshop and were revised after being presented at NOLISP 2009.

Together with the fundamentals of probability, random processes and statistical analysis, this insightful book also presents a broad range of advanced topics and applications. There is extensive coverage of Bayesian vs. frequentist statistics, time series and spectral representation, inequalities, bound and approximation, maximum-likelihood estimation and the expectation-maximization (EM) algorithm, geometric Brownian motion and Itô process. Applications such as hidden Markov models (HMM), the Viterbi, BCJR, and Baum-Welch algorithms, algorithms for machine learning, Wiener and Kalman filters, and queueing and loss networks are treated in detail. The book will be useful to students and researchers in such areas as communications, signal processing, networks, machine learning, bioinformatics, econometrics and mathematical finance. With a solutions manual, lecture slides, supplementary materials and MATLAB programs all available online, it is ideal for classroom teaching as well as a valuable reference for professionals.

Novel Algorithms and Techniques in Telecommunications and Networking includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Industrial Electronics, Technology and Automation, Telecommunications and Networking. Novel Algorithms and Techniques in Telecommunications and Networking includes selected papers from the conference

proceedings of the International Conference on Telecommunications and Networking (TeNe 08) which was part of the International Joint Conferences on Computer, Information and Systems Sciences and Engineering (CISSE 2008).

This is the standard textbook for courses on probability and statistics, not substantially updated. While helping students to develop their problem-solving skills, the author motivates students with practical applications from various areas of ECE that demonstrate the relevance of probability theory to engineering practice. Included are chapter overviews, summaries, checklists of important terms, annotated references, and a wide selection of fully worked-out real-world examples. In this edition, the Computer Methods sections have been updated and substantially enhanced and new problems have been added.

This book provides a balanced perspective of the concept, mathematical bases, requirements for estimation, and detailed quantitative examples of the implementation of the techniques for classical signal analysis. The presentation integrates theory and implementation, practical examples, homework exercises which range from pencil and paper format to computer-based format problems, to instructional notebooks. The notebooks provide a mode of learning that is interactive and suited for self-pacing and independent learning. * "real-world" applications * real data available for exercises and projects * notebooks for interactive learning * graphical explanation of concepts * exercises emphasizing concepts * CD-ROM with MATLAB implementation

Probability, Statistics, and Random Processes for Engineers Prentice Hall

Previous edition published as: Probability and random processes with applications to signal processing. c2002.

Digital Transmission – A Simulation-Aided Introduction with VisSim/Comm is a book in which basic principles of digital communication, mainly pertaining to the physical layer, are emphasized. Nevertheless, these principles can serve as the fundamentals that will help the reader to understand more advanced topics and the associated technology. In this book, each topic is addressed in two different and complementary ways: theoretically and by simulation. The theoretical approach encompasses common subjects covering principles of digital transmission, like notions of probability and stochastic processes, signals and systems, baseband and passband signaling, signal-space representation, spread spectrum, multi-carrier and ultra wideband transmission, carrier and symbol-timing recovery, information theory and error-correcting codes. The simulation approach revisits the same subjects, focusing on the capabilities of the communication system simulation software VisSim/Comm on helping the reader to fulfill the gap between the theory and its practical meaning. The presentation of the theory is made easier with the help of 357 illustrations. A total of 101 simulation files supplied in the accompanying CD support the simulation-oriented approach. A full evaluation version and a viewer-only version of VisSim/Comm are also supplied in the CD.

This book concerns digital communication. Specifically, we treat the transport of bit streams from one geographical location to another over various physical media, such as wire pairs, coaxial cable, optical fiber, and radio. We also treat multiple-access channels, where there are potentially multiple transmitters and receivers sharing a common medium. Ten years have elapsed since the Second Edition, and there have been remarkable advances in wireless communication, including cellular telephony and wireless local-area networks. This Third Edition expands treatment of communication

theories underlying wireless, and especially advanced techniques involving multiple antennas, which turn the traditional single-input single-output channel into a multiple-input multiple-output (MIMO) channel. This is more than a trivial advance, as it stimulates many advanced techniques such as adaptive antennas and coding techniques that take advantage of space as well as time. This is reflected in the addition of two new chapters, one on the theory of MIMO channels, and the other on diversity techniques for mitigating fading. The field of error-control coding has similarly undergone tremendous changes in the past decade, brought on by the invention of turbo codes in 1993 and the subsequent rediscovery of Gallager's low-density parity-check codes. Our treatment of error-control coding has been rewritten to reflect the current state of the art. Other materials have been reorganized and reworked, and three chapters from the previous edition have been moved to the book's Web site to make room.

Probability, Random Variables, Statistics, and Random Processes: Fundamentals & Applications is a comprehensive undergraduate-level textbook. With its excellent topical coverage, the focus of this book is on the basic principles and practical applications of the fundamental concepts that are extensively used in various Engineering disciplines as well as in a variety of programs in Life and Social Sciences. The text provides students with the requisite building blocks of knowledge they require to understand and progress in their areas of interest. With a simple, clear-cut style of writing, the intuitive explanations, insightful examples, and practical applications are the hallmarks of this book. The text consists of twelve chapters divided into four parts. Part-I, Probability (Chapters 1 – 3), lays a solid groundwork for probability theory, and introduces applications in counting, gambling, reliability, and security. Part-II, Random Variables (Chapters 4 – 7), discusses in detail multiple random variables, along with a multitude of frequently-encountered probability distributions. Part-III, Statistics (Chapters 8 – 10), highlights estimation and hypothesis testing. Part-IV, Random Processes (Chapters 11 – 12), delves into the characterization and processing of random processes. Other notable features include: Most of the text assumes no knowledge of subject matter past first year calculus and linear algebra. With its independent chapter structure and rich choice of topics, a variety of syllabi for different courses at the junior, senior, and graduate levels can be supported. A supplemental website includes solutions to about 250 practice problems, lecture slides, and figures and tables from the text. Given its engaging tone, grounded approach, methodically-paced flow, thorough coverage, and flexible structure, Probability, Random Variables, Statistics, and Random Processes: Fundamentals & Applications clearly serves as a must textbook for courses not only in Electrical Engineering, but also in Computer Engineering, Software Engineering, and Computer Science.

This is the second in a series of three short books on probability theory and random processes for biomedical engineers. This volume focuses on expectation, standard deviation, moments, and the characteristic function. In addition, conditional expectation, conditional moments and the conditional characteristic function are also discussed. Jointly distributed random variables are described, along with joint expectation, joint moments, and the joint characteristic function. Convolution is also developed. A considerable effort has been made to develop the theory in a logical manner—developing special mathematical skills as needed. The mathematical

background required of the reader is basic knowledge of differential calculus. Every effort has been made to be consistent with commonly used notation and terminology—both within the engineering community as well as the probability and statistics literature. The aim is to prepare students for the application of this theory to a wide variety of problems, as well give practicing engineers and researchers a tool to pursue these topics at a more advanced level. Pertinent biomedical engineering examples are used throughout the text.

PREVIOUS EDITIONThis textbook introduces the “Fundamentals of Multimedia”, addressing real issues commonly faced in the workplace. The essential concepts are explained in a practical way to enable students to apply their existing skills to address problems in multimedia. Fully revised and updated, this new edition now includes coverage of such topics as 3D TV, social networks, high-efficiency video compression and conferencing, wireless and mobile networks, and their attendant technologies.

Features: presents an overview of the key concepts in multimedia, including color science; reviews lossless and lossy compression methods for image, video and audio data; examines the demands placed by multimedia communications on wired and wireless networks; discusses the impact of social media and cloud computing on information sharing and on multimedia content search and retrieval; includes study exercises at the end of each chapter; provides supplementary resources for both students and instructors at an associated website.

This book uses a distinctly applied framework to present the most important topics in stochastic processes, including Gaussian and Markovian processes, Markov Chains, Poisson processes, Brownian motion and queueing theory. The book also examines in detail special diffusion processes, with implications for finance, various generalizations of Poisson processes, and renewal processes. It contains numerous examples and approximately 350 advanced problems that reinforce both concepts and applications. Entertaining mini-biographies of mathematicians give an enriching historical context. The book includes statistical tables and solutions to the even-numbered problems at the end.

High reliability, maintainability, and safety are expected from complex equipment and systems. This book presents state-of-the-art methods and procedures used for cost and time effective quality and reliability assurance during the design and production of equipment and systems. It is based on more than 20 years experience gained by the author in research and industry. The book covers theory, practice, and management aspects and addresses the needs of scientists, system-oriented engineers, engineers in development and production and project and quality assurance managers. The second edition has been completely updated revised and includes modern concepts such as Total Quality Management (TQM) and Concurrent Engineering.

Reliability engineering is a rapidly evolving discipline, whose purpose is to develop methods and tools to predict, evaluate, and demonstrate reliability, maintainability, and availability of components, equipment, and systems, as well as to support development and production engineers in building in reliability and maintainability. To be cost and time effective, reliability engineering has to be coordinated with quality assurance activities, in agreement with Total Quality Management (TQM) and Concurrent Engineering efforts. To build in reliability and maintainability into complex equipment or systems, failure rate and failure mode analyses have to be performed early in the

development phase and be supported by design guidelines for reliability, maintainability, and software quality as well as by extensive design reviews. Before production, qualification tests on prototypes are necessary to ensure that quality and reliability targets have been met. In the production phase, processes need to be selected and monitored to assure the required quality level. For many systems, availability requirements have also to be satisfied. In these cases, stochastic processes can be used to investigate and optimize availability. including logistical support as well. Software often plays a dominant role, requiring specific quality assurance activities. This book presents the state-of-the-art of reliability engineering, both in theory and practice. It is based on over 25 years experience of the author in this field, half of which was in industry and half as Professor for reliability engineering at the ETH (Swiss Federal Institute of Technology Zurich).

The Electrical Engineer's Handbook is an invaluable reference source for all practicing electrical engineers and students. Encompassing 79 chapters, this book is intended to enlighten and refresh knowledge of the practicing engineer or to help educate engineering students. This text will most likely be the engineer's first choice in looking for a solution; extensive, complete references to other sources are provided throughout. No other book has the breadth and depth of coverage available here. This is a must-have for all practitioners and students! The Electrical Engineer's Handbook provides the most up-to-date information in: Circuits and Networks, Electric Power Systems, Electronics, Computer-Aided Design and Optimization, VLSI Systems, Signal Processing, Digital Systems and Computer Engineering, Digital Communication and Communication Networks, Electromagnetics and Control and Systems. About the Editor-in-Chief... Wai-Kai Chen is Professor and Head Emeritus of the Department of Electrical Engineering and Computer Science at the University of Illinois at Chicago. He has extensive experience in education and industry and is very active professionally in the fields of circuits and systems. He was Editor-in-Chief of the IEEE Transactions on Circuits and Systems, Series I and II, President of the IEEE Circuits and Systems Society and is the Founding Editor and Editor-in-Chief of the Journal of Circuits, Systems and Computers. He is the recipient of the Golden Jubilee Medal, the Education Award, and the Meritorious Service Award from the IEEE Circuits and Systems Society, and the Third Millennium Medal from the IEEE. Professor Chen is a fellow of the IEEE and the American Association for the Advancement of Science. * 77 chapters encompass the entire field of electrical engineering. * THOUSANDS of valuable figures, tables, formulas, and definitions. * Extensive bibliographic references. ??????????

Chinese edition of The black swan: the impact of the highly improbable. The author examines the highly improbable events that have massive impacts. An enlightening book that will change the way we think about the world. Distributed by Tsai Fong Books, Inc.

A resource for probability AND random processes, with hundreds of worked examples and probability and Fourier transform tables This survival guide in probability and random processes eliminates the need to pore through several resources to find a certain formula or table. It offers a compendium of most distribution functions used by communication engineers, queuing theory specialists, signal processing engineers, biomedical engineers, physicists, and students. Key topics covered include: * Random variables and most of their frequently used discrete and continuous probability distribution functions * Moments, transformations, and

convergences of random variables * Characteristic, generating, and moment-generating functions * Computer generation of random variates * Estimation theory and the associated orthogonality principle * Linear vector spaces and matrix theory with vector and matrix differentiation concepts * Vector random variables * Random processes and stationarity concepts * Extensive classification of random processes * Random processes through linear systems and the associated Wiener and Kalman filters * Application of probability in single photon emission tomography (SPECT) More than 400 figures drawn to scale assist readers in understanding and applying theory. Many of these figures accompany the more than 300 examples given to help readers visualize how to solve the problem at hand. In many instances, worked examples are resolved with more than one approach to illustrate how different probability methodologies can work for the same problem. Several probability tables with accuracy up to nine decimal places are provided in the appendices for quick reference. A special feature is the graphical presentation of the commonly occurring Fourier transforms, where both time and frequency functions are drawn to scale. This book is of particular value to undergraduate and graduate students in electrical, computer, and civil engineering, as well as students in physics and applied mathematics. Engineers, computer scientists, biostatisticians, and researchers in communications will also benefit from having a single resource to address most issues in probability and random processes.

The absence of training signals from many kinds of transmission necessitates the widespread use of blind equalization and system identification. There have been many algorithms developed for these purposes, working with one- or two-dimensional signals and with single-input single-output or multiple-input multiple-output, real or complex systems. It is now time for a unified treatment of this subject, pointing out the common characteristics of these algorithms as well as learning from their different perspectives. "Blind Equalization and System Identification" provides such a unified treatment presenting theory, performance analysis, simulation, implementation and applications. This is a textbook for graduate courses in discrete-time random processes, statistical signal processing, and blind equalization and system identification. It contains material which will also interest researchers and engineers working in digital communications, source separation, speech processing, and other, similar applications. The popularity of multimedia content has led to the widespread distribution and consumption of digital multimedia data. As a result of the relative ease with which individuals may now alter and repackage digital content, ensuring that media content is employed by authorized users for its intended purpose is becoming an issue of eminent importance to both governmental security and commercial applications. Digital fingerprinting is a class of multimedia forensic technologies to track and identify entities involved in the illegal manipulation and unauthorized usage of multimedia content, thereby protecting the sensitive nature of multimedia data as well as its commercial value after the content has been delivered to a recipient. "Multimedia Fingerprinting Forensics for Traitor Tracing" covers the essential aspects of research in this emerging technology, and explains the latest development in this field. It describes the framework of multimedia fingerprinting, discusses the challenges that may be faced when enforcing usage policies, and investigates the design of fingerprints that cope with new families of multiuser attacks that may be mounted against media fingerprints. The discussion provided in the book highlights challenging problems as well as future trends in this research field, providing readers with a broader view of the evolution of the young field of multimedia forensics. Topics and features: Comprehensive coverage of digital watermarking and fingerprinting in multimedia forensics for a number of media types. Detailed discussion on challenges in multimedia fingerprinting and analysis of effective multiuser collusion attacks on digital fingerprinting. Thorough investigation of fingerprint design and performance analysis for addressing different application concerns arising in multimedia fingerprinting. Well-organized explanation of problems and solutions, such as order-statistics-based nonlinear collusion

attacks, efficient detection and identification of colluders, group-oriented fingerprint design, and anti-collusion codes for multimedia fingerprinting. Presenting the state of the art in collusion-resistant digital fingerprinting for multimedia forensics, this invaluable book is accessible to a wide range of researchers and professionals in the fields of electrical engineering, computer science, information technologies, and digital rights management.

For courses in Probability and Random Processes. Probability, Statistics, and Random Processes for Engineers, 4e is a comprehensive treatment of probability and random processes that, more than any other available source, combines rigor with accessibility. Beginning with the fundamentals of probability theory and requiring only college-level calculus, the book develops all the tools needed to understand more advanced topics such as random sequences, continuous-time random processes, and statistical signal processing. The book progresses at a leisurely pace, never assuming more knowledge than contained in the material already covered. Rigor is established by developing all results from the basic axioms and carefully defining and discussing such advanced notions as stochastic convergence, stochastic integrals and resolution of stochastic processes.

Today, tropical cyclones continue to bring destruction, as well as disruption, to societies that are exposed to their threat. This book represents a compilation of recent cutting-edge research on tropical cyclones and their impacts from researchers at many institutions around the world. This book contains new looks at tropical cyclone dynamics, the use of satellite-based remote sensing in the detection and climatology of tropical cyclones, and the modeling and prediction of tropical cyclones as well as their associated impacts. This book would make a nice addition to any course on tropical meteorology highlighting topics of interest in recent research on this topic.

Using clear language, this book shows you how to build in, evaluate, and demonstrate reliability and availability of components, equipment, and systems. It presents the state of the art in theory and practice, and is based on the author's 30 years' experience, half in industry and half as professor of reliability engineering at the ETH, Zurich. In this extended edition, new models and considerations have been added for reliability data analysis and fault tolerant reconfigurable repairable systems including reward and frequency / duration aspects. New design rules for imperfect switching, incomplete coverage, items with more than 2 states, and phased-mission systems, as well as a Monte Carlo approach useful for rare events are given. Trends in quality management are outlined. Methods and tools are given in such a way that they can be tailored to cover different reliability requirement levels and be used to investigate safety as well. The book contains a large number of tables, figures, and examples to support the practical aspects.

Deconvolution problems occur in many fields of nonparametric statistics, for example, density estimation based on contaminated data, nonparametric regression with errors-in-variables, image and signal deblurring. During the last two decades, those topics have received more and more attention. As applications of deconvolution procedures concern many real-life problems in econometrics, biometrics, medical statistics, image reconstruction, one can realize an increasing number of applied statisticians who are interested in nonparametric deconvolution methods; on the other hand, some deep results from Fourier analysis, functional analysis, and probability theory are required to understand the construction of deconvolution techniques and their properties so that deconvolution is also particularly challenging for mathematicians. The general deconvolution problem in statistics can be described as follows: Our goal is estimating a function f while any empirical access is restricted to some quantity $h = f * G = \int f(x-y)dG(y)$, (1.1) that is, the convolution of f and some probability distribution G . Therefore, f can be estimated from some observations only indirectly. The strategy is \hat{f} estimating h ; this means producing an empirical version \hat{h} of h and, then, \hat{f} applying a deconvolution procedure to \hat{h} to estimate f . In the mathematical context, we have to invert the convolution

operator with G where some regularization is required to guarantee that h is contained in the invertibility domain of the convolution operator. The estimator h has to be chosen with respect to the specific statistical experiment.

This is the first in a series of short books on probability theory and random processes for biomedical engineers. This text is written as an introduction to probability theory. The goal was to prepare students, engineers and scientists at all levels of background and experience for the application of this theory to a wide variety of problems as well as pursue these topics at a more advanced level. The approach is to present a unified treatment of the subject. There are only a few key concepts involved in the basic theory of probability theory. These key concepts are all presented in the first chapter. The second chapter introduces the topic of random variables. Later chapters simply expand upon these key ideas and extend the range of application. A considerable effort has been made to develop the theory in a logical manner developing special mathematical skills as needed. The mathematical background required of the reader is basic knowledge of differential calculus. Every effort has been made to be consistent with commonly used notation and terminology both within the engineering community as well as the probability and statistics literature. Biomedical engineering examples are introduced throughout the text and a large number of self-study problems are available for the reader.

This watershed resource shows how to use various probabilistic methods and approaches in practical problems of engineering and applied science. These methods enable readers to understand the behavior and performance of engineering products in the conditions of variability and uncertainty, and to ensure the effectiveness and durability of these products. Intended for engineers and applied scientists of different specialities, backgrounds, qualifications, and levels of experience, this straightforward and easy-to-use guide offers practical insight into the role of the "laws of chance" and causes and effects of variability in numerous design problems encountered in mechanical, structural, materials, reliability, telecommunications, and other areas of engineering. The book contains dozens of practical examples that demonstrate the key role that probabilistic methods can play in the analysis and design of viable and reliable engineering components, products, and systems.

The Volume will cover a broad range of topics in Electrochemistry in an authoritative manner by internationally renowned specialists. The topics include an overview of theoretical advances in quantitative treatment of solute-solvent interactions and an analysis of the formation mechanisms of porous silicon. Recent advances on the use of electrochemistry in medicine will be surveyed in a chapter by Dr. A. Vijn.

The theory of probability is a powerful tool that helps electrical and computer engineers to explain, model, analyze, and design the technology they develop. The text begins at the advanced undergraduate level, assuming only a modest knowledge of probability, and progresses through more complex topics mastered at graduate level. The first five chapters cover the basics of probability and both discrete and continuous random variables. The later chapters have a more specialized coverage, including random vectors, Gaussian random vectors, random processes, Markov Chains, and convergence. Describing tools and

results that are used extensively in the field, this is more than a textbook; it is also a reference for researchers working in communications, signal processing, and computer network traffic analysis. With over 300 worked examples, some 800 homework problems, and sections for exam preparation, this is an essential companion for advanced undergraduate and graduate students. Further resources for this title, including solutions (for Instructors only), are available online at www.cambridge.org/9780521864701.

Traditional Chinese edition of Thinking, Fast and Slow, Amazon Best Books of the Month, November 2011. Kahneman is psychology professor emeritus at Princeton University and the 2002 Nobel Prize in Economic Sciences. In Traditional Chinese. Annotation copyright Tsai Fong Books, Inc. Distributed by Tsai Fong Books, Inc.

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