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Reversing Eldad Eilam 2008-04-21 Beginning with a basic primer on reverse engineering-including computer internals, operating systems, and assembly language-and then discussing the various applications of reverse engineering, this book provides readers with practical, in-depth techniques for software reverse engineering. The book is broken into two parts, the first deals with security-related reverse engineering and the second explores the more practical aspects of reverse engineering. In addition, the author explains how to reverse engineer a third-party software library to improve interfacing and how to reverse engineer a competitor's software to build a better product. * The first popular book to show how software reverse engineering can help defend against security threats, speed up development, and unlock the secrets of competitive products * Helps developers plug security holes by demonstrating how hacker exploit reverse engineering techniques to crack copy-protection schemes and identify software targets for viruses and other malware * Offers a primer on advanced reverse-engineering, delving into "disassembly"-code-level reverse engineering-and explaining how to decipher assembly language

Malware Analyst's Cookbook and DVD Michael Ligh 2010-09-29 A computer forensics "how-to" for fighting malicious code and analyzing incidents With our ever-increasing reliance on computers comes an ever-growing risk of malware. Security professionals will find plenty of solutions

in this book to the problems posed by viruses, Trojan horses, worms, spyware, rootkits, adware, and other invasive software. Written by well-known malware experts, this guide reveals solutions to numerous problems and includes a DVD of custom programs and tools that illustrate the concepts, enhancing your skills. Security professionals face a constant battle against malicious software; this practical manual will improve your analytical capabilities and provide dozens of valuable and innovative solutions. Covers classifying malware, packing and unpacking, dynamic malware analysis, decoding and decrypting, rootkit detection, memory forensics, open source malware research, and much more. Includes generous amounts of source code in C, Python, and Perl to extend your favorite tools or build new ones, and custom programs on the DVD to demonstrate the solutions. *Malware Analyst's Cookbook* is indispensable to IT security administrators, incident responders, forensic analysts, and malware researchers.

Stochastic Simulation Optimization Chun-Hung Chen 2010 With the advance of new computing technology, simulation is becoming very popular for designing large, complex, and stochastic engineering systems, since closed-form analytical solutions generally do not exist for such problems. However, the added flexibility of simulation often creates models that are computationally intractable. Moreover, to obtain a sound statistical estimate at a specified level of confidence, a large number of simulation runs (or replications) is usually required for each design

alternative. If the number of design alternatives is large, the total simulation cost can be very expensive. This book addresses the pertinent efficiency issue via smart allocation of computing resource in the simulation experiments for optimization, and aims to provide academic researchers and industrial practitioners a comprehensive coverage of OCBA approach for stochastic simulation optimization. Starting with an intuitive explanation of computing budget allocation and a discussion of its impact on optimization performance, a series of OCBA approaches developed for various problems are then presented, from the selection of the best design to optimization with multiple objectives. Finally, this book discusses the potential extension of OCBA notion to different applications such as data envelopment analysis, experiments of design, and rare-event simulation.

Systems Engineering Guidebook James N. Martin 2020-04-30 Systems Engineering Guidebook: A Process for Developing Systems and Products is intended to provide readers with a guide to understanding and becoming familiar with the systems engineering process, its application, and its value to the successful implementation of systems development projects. The book describes the systems engineering process as a multidisciplinary effort. The process is defined in terms of specific tasks to be accomplished, with great emphasis placed on defining the problem that is being addressed prior to designing the solution.

Probability, Random Processes, and Statistical Analysis Hisashi Kobayashi 2011-12-15 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.

Essentials of Metaheuristics (Second Edition) Sean Luke 2012-12-20 Interested in the Genetic Algorithm? Simulated Annealing? Ant Colony Optimization? Essentials of Metaheuristics covers these and other metaheuristics algorithms, and is intended for undergraduate students, programmers, and non-experts. The book covers a wide range of algorithms, representations, selection and modification operators, and related topics, and includes 71 figures and 135 algorithms great and small. Algorithms include: Gradient Ascent techniques, Hill-Climbing variants, Simulated Annealing, Tabu Search variants, Iterated Local Search, Evolution Strategies, the Genetic Algorithm, the Steady-State Genetic Algorithm, Differential Evolution, Particle Swarm Optimization, Genetic Programming variants, One- and Two-Population Competitive Coevolution, N-Population Cooperative Coevolution, Implicit Fitness Sharing, Deterministic Crowding, NSGA-II, SPEA2, GRASP, Ant Colony Optimization variants, Guided Local Search, LEM, PBIL, UMDA, cGA, BOA, SAMUEL, ZCS, XCS, and XCSF.

Network Hardening Lingyu Wang 2014-07-08 This Springer Brief examines the tools based on attack graphs that help reveal network hardening threats. Existing tools detail all possible attack paths leading to critical network resources. Though no current tool provides a direct solution to remove the threats, they are a more efficient means of network defense than relying solely on the experience and skills of a human analyst. Key background information on attack graphs and network hardening helps readers understand the complexities of these tools and techniques. A common network hardening technique generates hardening solutions comprised of initially satisfied conditions, thereby making the solution more enforceable. Following a discussion of the complexity issues in this technique, the authors provide an improved technique that considers the dependencies between hardening options

and employs a near-optimal approximation algorithm to scale linearly with the size of the inputs. Also included are automated solutions for hardening a network against sophisticated multi-step intrusions. Network Hardening: An Automated Approach to Improving Network Security is a valuable resource for researchers and professionals working in network security. It is also a useful tool for advanced-level students focused on security in computer science and electrical engineering.

War, Wine, and Taxes John V. C. Nye 2018-06-26 In *War, Wine, and Taxes*, John Nye debunks the myth that Britain was a free-trade nation during and after the industrial revolution, by revealing how the British used tariffs—notably on French wine—as a mercantilist tool to politically weaken France and to respond to pressure from local brewers and others. The book reveals that Britain did not transform smoothly from a mercantilist state in the eighteenth century to a bastion of free trade in the late nineteenth. This boldly revisionist account gives the first satisfactory explanation of Britain's transformation from a minor power to the dominant nation in Europe. It also shows how Britain and France negotiated the critical trade treaty of 1860 that opened wide the European markets in the decades before World War I. Going back to the seventeenth century and examining the peculiar history of Anglo-French military and commercial rivalry, Nye helps us understand why the British drink beer not wine, why the Portuguese sold liquor almost exclusively to Britain, and how liberal, eighteenth-century Britain managed to raise taxes at an unprecedented rate—with government revenues growing five times faster than the gross national product. *War, Wine, and Taxes* stands in stark contrast to standard interpretations of the role tariffs played in the economic development of Britain and France, and sheds valuable new light on the joint role of commercial and fiscal policy in the rise of the modern state.

Service Systems Management and Engineering Ching M. Chang 2018-01-05 The ultimate instructional guide to achieving success in the service sector Already responsible for employing the bulk of the U.S. workforce, service-providing industries continue to increase their economic dominance. Because of this fact, these companies are looking

for talented new service systems engineers to take on strategic and operational challenges. This instructional guide supplies essential tools for career seekers in the service field, including techniques on how to apply scientific, engineering, and business management principles effectively to integrate technology into the workplace. This book provides: Broad-based concepts, skills, and capabilities in twelve categories, which form the "Three-Decker Leadership Architecture," including creative thinking and innovations in services, knowledge management, and globalization Materials supplemented and enhanced by a large number of case studies and examples Skills for successful service engineering and management to create strategic differentiation and operational excellence for service organizations Focused training on becoming a systems engineer, a critically needed position that, according to a 2009 Moneyline article on the best jobs in America, ranks at the top of the list Service Systems Management and Engineering is not only a valuable addition to a college classroom, but also an extremely handy reference for industry leaders looking to explore the possibilities presented by the expanding service economy, allowing them to better target strategies for greater achievement.

Systems Engineering Derek K. Hitchins 2008-03-11 This book conceives, presents and exemplifies a contemporary, general systems methodology that is straightforward and accessible, providing guidance in practical application, as well as explaining concept and theory. The book is presented both as a text for students, with topic assignments, and as a reference for practitioners, through case studies. Utilizing recent research and developments in systems science, methods and tools, Hitchins has developed a unified systems methodology, employable when tackling virtually any problem, from the small technological, to the global socioeconomic. Founded in the powerful 'systems approach', Hitchins' systems methodology brings together both soft and hard system scientific methods into one methodological framework. This can be applied when addressing complex problems, issues and situations, and for creating robust, provable solutions, resolutions and dissolutions to those problems - supposing such to exist. This book details and explores: the systems

approach, using theory and method to reveal systems engineering as applied systems science, bridging the gulf between Problem and Solution Spaces; a 'universal' Systems Methodology (including an extensive view of systems engineering, embracing both soft and hard systems) which encompasses all five stages of Hitchins' 5-layer Systems Engineering Model (artifact, project, enterprise, industry and socio-economy); case studies illustrating how the systems methodology may be used to address a diverse range of situations and issues, including conceiving a new defense capability, proposing a feasible way to tackle global warming, tackling enterprise interventions, how and why things can go wrong, and many more. Systems Engineering will give an immeasurable advantage to managers, practitioners and consultants in a wide range of organizations and fields including police, defense, procurement, communications, transport, management, electrical, electronic, aerospace, requirements, software and computer engineering. It is an essential reference for researchers seeking 'systems enlightenment', including graduate students who require a comprehensive reference text on the subject, and also government departments and systems engineering institutions

Adaptive Control Shankar Sastry 2011 This volume surveys the major results and techniques of analysis in the field of adaptive control. Focusing on linear, continuous time, single-input, single-output systems, the authors offer a clear, conceptual presentation of adaptive methods, enabling a critical evaluation of these techniques and suggesting avenues of further development. 1989 edition.

The IDA Pro Book, 2nd Edition Chris Eagle 2011-07-11 No source code? No problem. With IDA Pro, the interactive disassembler, you live in a source code-optional world. IDA can automatically analyze the millions of opcodes that make up an executable and present you with a disassembly. But at that point, your work is just beginning. With The IDA Pro Book, you'll learn how to turn that mountain of mnemonics into something you can actually use. Hailed by the creator of IDA Pro as "profound, comprehensive, and accurate," the second edition of The IDA Pro Book covers everything from the very first steps to advanced automation techniques. You'll find complete coverage of IDA's new Qt-based user

interface, as well as increased coverage of the IDA debugger, the Bochs debugger, and IDA scripting (especially using IDAPython). But because humans are still smarter than computers, you'll even learn how to use IDA's latest interactive and scriptable interfaces to your advantage. Save time and effort as you learn to: -Navigate, comment, and modify disassembly -Identify known library routines, so you can focus your analysis on other areas of the code -Use code graphing to quickly make sense of cross references and function calls -Extend IDA to support new processors and filetypes using the SDK -Explore popular plug-ins that make writing IDA scripts easier, allow collaborative reverse engineering, and much more -Use IDA's built-in debugger to tackle hostile and obfuscated code Whether you're analyzing malware, conducting vulnerability research, or reverse engineering software, a mastery of IDA is crucial to your success. Take your skills to the next level with this 2nd edition of The IDA Pro Book.

Cryptographic Engineering Cetin Kaya Koc 2008-12-11 This book is for engineers and researchers working in the embedded hardware industry. This book addresses the design aspects of cryptographic hardware and embedded software. The authors provide tutorial-type material for professional engineers and computer information specialists.

Electrical and Computer Engineering Department, George Mason University Introduces the Electrical and Computer Engineering Department at George Mason University (GMU), including an overview of the program; details on Bachelors, Masters, and Doctorate degree programs; application materials; course offerings; faculty, staff, and students; course materials and educational resources; and instructional computer labs and research centers. Provides links to departmental announcements, directions to the campus, and general GMU information.

Computer Organization and Design David A. Patterson 2004-08-07 This best selling text on computer organization has been thoroughly updated to reflect the newest technologies. Examples highlight the latest processor designs, benchmarking standards, languages and tools. As with previous editions, a MIPS processor is the core used to present the fundamentals of hardware technologies at work in a computer system.

The book presents an entire MIPS instruction set—instruction by instruction—the fundamentals of assembly language, computer arithmetic, pipelining, memory hierarchies and I/O. A new aspect of the third edition is the explicit connection between program performance and CPU performance. The authors show how hardware and software components—such as the specific algorithm, programming language, compiler, ISA and processor implementation—impact program performance. Throughout the book a new feature focusing on program performance describes how to search for bottlenecks and improve performance in various parts of the system. The book digs deeper into the hardware/software interface, presenting a complete view of the function of the programming language and compiler—crucial for understanding computer organization. A CD provides a toolkit of simulators and compilers along with tutorials for using them. For instructor resources click on the grey "companion site" button found on the right side of this page. This new edition represents a major revision. New to this edition: * Entire Text has been updated to reflect new technology * 70% new exercises. * Includes a CD loaded with software, projects and exercises to support courses using a number of tools * A new interior design presents defined terms in the margin for quick reference * A new feature, "Understanding Program Performance" focuses on performance from the programmer's perspective * Two sets of exercises and solutions, "For More Practice" and "In More Depth," are included on the CD * "Check Yourself" questions help students check their understanding of major concepts * "Computers In the Real World" feature illustrates the diversity of uses for information technology * More detail below...

Enterprise Systems Engineering Jr., George Rebovich 2016-04-19

Although usually well-funded, systems development projects are often late to market and over budget. Worse still, many are obsolete before they can be deployed or the program is cancelled before delivery. Clearly, it is time for a new approach. With coverage ranging from the complex characteristics and behaviors of enterprises to the challenges the Thinking about GIS Roger F. Tomlinson 2007 Describes how to implement a successful geographic information system.

SOA Principles of Service Design Thomas Erl 2007-07-18 The Definitive Guide to Service Engineering The key to succeeding with service-oriented architecture (SOA) is in comprehending the meaning and significance of its most fundamental building block: the service. It is through an understanding of service design that truly "service-oriented" solution logic can be created in support of achieving the strategic goals associated with SOA and service-oriented computing. Bestselling SOA author Thomas Erl guides you through a comprehensive, insightful, and visually rich exploration of the service-orientation design paradigm, revealing exactly how services should and should not be designed for real-world SOA.

System Modeling and Analysis Hisashi Kobayashi 2009 For courses in Performance Analysis and Design of Communication Networks (PC) offered in departments of Electrical and Computer Engineering. Also appropriate for courses in Systems Engineering and Operations Research. Kobayashi and Mark present the most up-to-date analytical models, simulation techniques, and computational algorithms useful for performance evaluation of complex systems including computer systems, communication networks, transportation systems, and manufacturing systems. Broader in scope than other texts, this book provides more in-depth coverage of topics such as computational algorithms and approximations. It appeals to students with a background or interest in a wide range of areas, including systems analysis or telecommunication networks.

Federal Data Science Feras A. Batarseh 2017-09-21 Federal Data Science serves as a guide for federal software engineers, government analysts, economists, researchers, data scientists, and engineering managers in deploying data analytics methods to governmental processes. Driven by open government (2009) and big data (2012) initiatives, federal agencies have a serious need to implement intelligent data management methods, share their data, and deploy advanced analytics to their processes. Using federal data for reactive decision making is not sufficient anymore, intelligent data systems allow for proactive activities that lead to benefits such as: improved citizen services, higher accountability, reduced delivery

inefficiencies, lower costs, enhanced national insights, and better policy making. No other government-dedicated work has been found in literature that addresses this broad topic. This book provides multiple use-cases, describes federal data science benefits, and fills the gap in this critical and timely area. Written and reviewed by academics, industry experts, and federal analysts, the problems and challenges of developing data systems for government agencies is presented by actual developers, designers, and users of those systems, providing a unique and valuable real-world perspective. Offers a range of data science models, engineering tools, and federal use-cases Provides foundational observations into government data resources and requirements Introduces experiences and examples of data openness from the US and other countries A step-by-step guide for the conversion of government towards data-driven policy making Focuses on presenting data models that work within the constraints of the US government Presents the why, the what, and the how of injecting AI into federal culture and software systems

Dealing with Complexity Robert L. Flood 2013-03-09 Contents 11. 2. 2. Four Main Areas of Dispute 247 11. 2. 3. Summary . . . 248 11. 3. Making Sense of the Issues . . 248 11. 3. 1. Introduction 248 11. 3. 2. The Scientific Approach 248 11. 3. 3. Science and Matters of Society . 249 11. 3. 4. Summary . 251 11. 4. Tying It All Together 251 11. 4. 1. Introduction 251 11. 4. 2. A Unifying Framework 251 11. 4. 3. Critical Systems Thinking 253 11. 4. 4. Summary 254 11. 5. Conclusion 254 Questions . . . 255 REFERENCES 257 INDEX 267 Chapter One SYSTEMS Origin and Evolution, Terms and Concepts 1. 1. INTRODUCTION We start this book with Theme A (see Figure P. I in the Preface), which aims to develop an essential and fundamental understanding of systems science. So, what is systems science? When asked to explain what systems science is all about, many systems scientists are confronted with a rather daunting task. The discipline tends to be presented and understood in a fragmented way and very few people hold an overview understanding of the subject matter, while also having sufficient in-depth competence in many and broad-

ranging subject areas where the ideas are used. Indeed, it was precisely this difficulty that identified the need for a comprehensive well-documented account such as is presented here in *Dealing with Complexity*.

Multiaccess, Mobility and Teletraffic David Everitt 2012-12-06 Designers of wireless networks face a problem which is multidimensional in nature, where issues of multiaccess, radio propagation, antennas, mobility and teletraffic all need to be understood and simultaneously addressed in order to create a properly functioning system. This book does not merely concentrate on one of these issues but takes a broader view, and presents a mix of papers addressing systems and networking issues. *Multiaccess, Mobility and Teletraffic: Advances in Wireless Networks* addresses fundamental theoretical issues about future wireless networks, such as capacity improvements theoretically attainable from spread spectrum systems, and practical concerns associated with current networks such as signalling, implementation of GSM and CDMA networks, and implementation of packet data services over wireless networks. As well as the papers looking at specific technologies, this book contains a number of papers discussing more generic problems in mobile networks, such as issues associated with handoff, resource management, frequency reuse, mobility, signalling and wireless packet networks. *Multiaccess, Mobility and Teletraffic: Advances in Wireless Networks* covers a broad range of issues associated with wireless networks and provides a very interesting snapshot of the current state-of-the-art. It will be of interest to all researchers and practitioners working in the field of wireless communications and networks.

Graduate Programs in Engineering & Applied Sciences 2015 (Grad 5) Peterson's 2014-11-11 Peterson's Graduate Programs in Engineering & Applied Sciences 2015 contains comprehensive profiles of more than 3,850 graduate programs in all relevant disciplines-including aerospace/aeronautical engineering, agricultural engineering & bioengineering, chemical engineering, civil and environmental engineering, computer science and information technology, electrical and computer engineering, industrial engineering, telecommunications, and

more. Two-page in-depth descriptions, written by featured institutions, offer complete details on a specific graduate program, school, or department as well as information on faculty research. Comprehensive directories list programs in this volume, as well as others in the Peterson's graduate series.

Engineering Principles of Combat Modeling and Distributed Simulation

Andreas Tolk 2012-03-20 Chapters 1-15 written by Andreas Tolk; chapters 16-32 written by various authors.

From Statistics to Neural Networks Vladimir Cherkassky 2012-12-06 The NATO Advanced Study Institute From Statistics to Neural Networks, Theory and Pattern Recognition Applications took place in Les Arcs, Bourg Saint Maurice, France, from June 21 through July 2, 1993. The meeting brought to gether over 100 participants (including 19 invited lecturers) from 20 countries. The invited lecturers whose contributions appear in this volume are: L. Almeida (INESC, Portugal), G. Carpenter (Boston, USA), V. Cherkassky (Minnesota, USA), F. Fogelman Soulie (LRI, France), W. Freeman (Berkeley, USA), J. Friedman (Stanford, USA), F. Girosi (MIT, USA and IRST, Italy), S. Grossberg (Boston, USA), T. Hastie (AT&T, USA), J. Kittler (Surrey, UK), R. Lippmann (MIT Lincoln Lab, USA), J. Moody (OGI, USA), G. Palm (U1m, Germany), B. Ripley (Oxford, UK), R. Tibshirani (Toronto, Canada), H. Wechsler (GMU, USA), C. Wellekens (Eurecom, France) and H. White (San Diego, USA). The ASI consisted of lectures overviewing major aspects of statistical and neural network learning, their links to biological learning and non-linear dynamics (chaos), and real-life examples of pattern recognition applications. As a result of lively interactions between the participants, the following topics emerged as major themes of the meeting: (1) Unified framework for the study of Predictive Learning in Statistics and Artificial Neural Networks (ANNs); (2) Differences and similarities between statistical and ANN methods for non parametric estimation from examples (learning); (3) Fundamental connections between artificial learning systems and biological learning systems.

INCOSE Systems Engineering Handbook INCOSE 2015-06-12 A detailed and thorough reference on the discipline and practice of systems

engineering The objective of the International Council on Systems Engineering (INCOSE) Systems Engineering Handbook is to describe key process activities performed by systems engineers and other engineering professionals throughout the life cycle of a system. The book covers a wide range of fundamental system concepts that broaden the thinking of the systems engineering practitioner, such as system thinking, system science, life cycle management, specialty engineering, system of systems, and agile and iterative methods. This book also defines the discipline and practice of systems engineering for students and practicing professionals alike, providing an authoritative reference that is acknowledged worldwide. The latest edition of the INCOSE Systems Engineering Handbook: Is consistent with ISO/IEC/IEEE 15288:2015 Systems and software engineering—System life cycle processes and the Guide to the Systems Engineering Body of Knowledge (SEBoK) Has been updated to include the latest concepts of the INCOSE working groups Is the body of knowledge for the INCOSE Certification Process This book is ideal for any engineering professional who has an interest in or needs to apply systems engineering practices. This includes the experienced systems engineer who needs a convenient reference, a product engineer or engineer in another discipline who needs to perform systems engineering, a new systems engineer, or anyone interested in learning more about systems engineering.

Agro-geoinformatics Liping Di 2021-04-12 This volume collects and presents the fundamentals, tools, and processes of utilizing geospatial information technologies to process remotely sensed data for use in agricultural monitoring and management. The issues related to handling digital agro-geoinformation, such as collecting (including field visits and remote sensing), processing, storing, archiving, preservation, retrieving, transmitting, accessing, visualization, analyzing, synthesizing, presenting, and disseminating agro-geoinformation have never before been systematically documented in one volume. The book is edited by International Conference on Agro-Geoinformatics organizers Dr. Liping Di (George Mason University), who coined the term “Agro-Geoinformatics” in 2012, and Dr. Berk Üstündağ (Istanbul Technical University) and are

uniquely positioned to curate and edit this foundational text. The book is composed of eighteen chapters that can each stand alone but also build on each other to give the reader a comprehensive understanding of agri-geoinformatics and what the tools and processes that compose the field can accomplish. Topics covered include land parcel identification, image processing in agricultural observation systems, databasing and managing agricultural data, crop status monitoring, moisture and evapotranspiration assessment, flood damage monitoring, agricultural decision support systems and more.

Systems Thinking Jamshid Gharajedaghi 2011-08-09 Systems Thinking, Third Edition combines systems theory and interactive design to provide an operational methodology for defining problems and designing solutions in an environment increasingly characterized by chaos and complexity. This new edition has been updated to include all new chapters on self-organizing systems as well as holistic, operational, and design thinking. The book covers recent crises in financial systems and job markets, the housing bubble, and environment, assessing their impact on systems thinking. A companion website is available at interactdesign.com. This volume is ideal for senior executives as well as for chief information/operating officers and other executives charged with systems management and process improvement. It may also be a helpful resource for IT/MBA students and academics. Four NEW chapters on self-organizing systems, holistic thinking, operational thinking, and design thinking Covers the recent crises in financial systems and job markets globally, the housing bubble, and the environment, assessing their impact on systems thinking Companion website to accompany the book is available at interactdesign.com

Peterson's Graduate Programs in Ocean Engineering, Paper & Textile Engineering, and Telecommunications 2011 Peterson's 2011-05-01 Peterson's Graduate Programs in Ocean Engineering, Paper & Textile Engineering, and Telecommunications contains a wealth of information on colleges and universities that offer graduate degrees in these fields. The profiled institutions include those in the United States, Canada, and abroad that are accredited by U.S. accrediting bodies. Up-to-

date data, collected through Peterson's Annual Survey of Graduate and Professional Institutions, provides valuable information on degree offerings, professional accreditation, jointly offered degrees, part-time and evening/weekend programs, postbaccalaureate distance degrees, faculty, students, degree requirements, entrance requirements, expenses, financial support, faculty research, and unit head and application contact information. Readers will find helpful links to in-depth descriptions that offer additional detailed information about a specific program or department, faculty members and their research, and much more. In addition, there are valuable articles on financial assistance, the graduate admissions process, advice for international and minority students, and facts about accreditation, with a current list of accrediting agencies.

Probability and Random Processes Wilbur B. Davenport 1977
Systems of Systems Dominique Luzeaux 2013-03-04 In recent years, the systems designed to support activity in the fields of banking, health, transportation, space, aeronautics, defense, etc. have become increasingly larger and more complex. With the growing maturity of information and communication technologies, systems have been interconnected within growing networks, yielding new capabilities and services through the combination of system functionalities. This has led to a further increasing complexity that has to be managed in order to take advantage of these system integrations. The book is divided into two parts. The first part addresses the concept and practical illustrations of a "system of systems" and is a multidisciplinary introduction to the notion of a "systems of systems" that is discussed extensively in the current scientific and technical literature. After a critical comparison of the different definitions and a range of various practical illustrations, this part provides answers to key questions such as what a system of systems is and how its complexity can be mastered. The second part, described as "systems-of-systems engineering: methods and tools", focuses on both engineering and modeling, and standardization issues that are critical to deal with the key steps in systems of systems engineering: namely eliciting stakeholder needs, architecture optimization, integration of constituent systems, qualification, and utilization.

Electrical Engineering and Control Min Zhu 2011-06-21 This volume includes extended and revised versions of a set of selected papers from the International Conference on Electric and Electronics (EEIC 2011) , held on June 20-22 , 2011, which is jointly organized by Nanchang University, Springer, and IEEE IAS Nanchang Chapter. The objective of EEIC 2011 Volume 2 is to provide a major interdisciplinary forum for the presentation of new approaches from Electrical engineering and controls, to foster integration of the latest developments in scientific research. 133 related topic papers were selected into this volume. All the papers were reviewed by 2 program committee members and selected by the volume editor Prof. Min Zhu. We hope every participant can have a good opportunity to exchange their research ideas and results and to discuss the state of the art in the areas of the Electrical engineering and controls.

Sensor Management in ISR Kenneth J. Hintz 2020-02-29 This innovative resource is the first book that partitions the intelligence, surveillance and reconnaissance (ISR) sensor management process into partitioned functions that can be studied and optimized independently of each other through defined conceptual interfaces. The book explains the difference between situation information and sensor information and how to compute both. The information-based sensor management (IBSM) approach to real-time orchestrated resource management (ORM) of intelligence, surveillance, and reconnaissance (ISR) assets in the physical, cyber, and social domains are detailed. The integrating concept of mission value through use of goal lattice (GL) methodology is explored. Approaches to implementing real-time sensor management (SM) systems by applying advanced information-based approaches that consider contextual situation and optimization of diverse sensor capabilities for information-based objectives are also covered. These methods have applications in physical intelligence, surveillance, and reconnaissance (ISR), as well as in cyber, and social domains. Based on 30 years of research in developing a mission-valued approach to maximizing the transfer of information from real, cyber, and social environments into a mission-valued, probabilistic representation of that environment on which decision makers can formulate actions, this is the only book that

addresses real-time management of ISR from a first principles approach (information theory), and how information theory can be applied to the design and development of ISR systems.

Bayesian Bounds for Parameter Estimation and Nonlinear Filtering/Tracking Harry L. Van Trees 2007-08-31 The first comprehensive development of Bayesian Bounds for parameter estimation and nonlinear filtering/tracking Bayesian estimation plays a central role in many signal processing problems encountered in radar, sonar, communications, seismology, and medical diagnosis. There are often highly nonlinear problems for which analytic evaluation of the exact performance is intractable. A widely used technique is to find bounds on the performance of any estimator and compare the performance of various estimators to these bounds. This book provides a comprehensive overview of the state of the art in Bayesian Bounds. It addresses two related problems: the estimation of multiple parameters based on noisy measurements and the estimation of random processes, either continuous or discrete, based on noisy measurements. An extensive introductory chapter provides an overview of Bayesian estimation and the interrelationship and applicability of the various Bayesian Bounds for both static parameters and random processes. It provides the context for the collection of papers that are included. This book will serve as a comprehensive reference for engineers and statisticians interested in both theory and application. It is also suitable as a text for a graduate seminar or as a supplementary reference for an estimation theory course.

Cognitive Radio and Interference Management: Technology and Strategy Ku, Meng-Lin 2012-08-31 Broadcast spectrum is scarce, both in terms of our ability to access existing spectrum and as a result of access rules created by governments. An emerging paradigm called cognitive radio, however, has the potential to allow different systems to dynamically access and opportunistically exploit the same frequency band in an efficient way, thereby allowing broadcasters to use spectrum more efficiently. Cognitive Radio and Interference Management: Technology and Strategy brings together state-of-the-art research results on cognitive radio and interference management from both theoretical and practical

perspectives. It serves as a bridge between people who are working to develop theoretical and practical research in cognitive radio and interference management, and therefore facilitate the future development of cognitive radio and its applications.

Introduction to Software Testing Paul Ammann 2008-01-28 Extensively class-tested, this textbook takes an innovative approach to software testing: it defines testing as the process of applying a few well-defined, general-purpose test criteria to a structure or model of the software. It incorporates the latest innovations in testing, including techniques to test modern types of software such as OO, web applications, and embedded software. The book contains numerous examples throughout. An instructor's solution manual, PowerPoint slides, sample syllabi, additional examples and updates, testing tools for students, and example software programs in Java are available on an extensive website.

Mobile Robots Gerald Cook 2020-01-09 Presents the normal kinematic and dynamic equations for robots, including mobile robots, with coordinate transformations and various control strategies This fully updated edition examines the use of mobile robots for sensing objects of interest, and focus primarily on control, navigation, and remote sensing. It also includes an entirely new section on modeling and control of autonomous underwater vehicles (AUVs), which exhibits unique complex three-dimensional dynamics. **Mobile Robots: Navigation, Control and Sensing, Surface Robots and AUVs, Second Edition** starts with a chapter on kinematic models for mobile robots. It then offers a detailed chapter on robot control, examining several different configurations of mobile robots. Following sections look at robot attitude and navigation. The application of Kalman Filtering is covered. Readers are also provided with a section on remote sensing and sensors. Other chapters discuss: target tracking, including multiple targets with multiple sensors; obstacle mapping and its application to robot navigation; operating a robotic manipulator; and remote sensing via UAVs. The last two sections deal with the dynamics modeling of AUVs and control of AUVs. In addition, this text: Includes two new chapters dealing with control of underwater vehicles Covers control schemes including linearization and use of linear control design methods,

Lyapunov stability theory, and more Addresses the problem of ground registration of detected objects of interest given their pixel coordinates in the sensor frame Analyzes geo-registration errors as a function of sensor precision and sensor pointing uncertainty **Mobile Robots: Navigation, Control and Sensing, Surface Robots and AUVs** is intended for use as a textbook for a graduate course of the same title and can also serve as a reference book for practicing engineers working in related areas.

Bayesian Multiple Target Tracking, Second Edition Lawrence D. Stone 2013-12-01 This second edition has undergone substantial revision from the 1999 first edition, recognizing that a lot has changed in the multiple target tracking field. One of the most dramatic changes is in the widespread use of particle filters to implement nonlinear, non-Gaussian Bayesian trackers. This book views multiple target tracking as a Bayesian inference problem. Within this framework it develops the theory of single target tracking, multiple target tracking, and likelihood ratio detection and tracking. In addition to providing a detailed description of a basic particle filter that implements the Bayesian single target recursion, this resource provides numerous examples that involve the use of particle filters. With these examples illustrating the developed concepts, algorithms, and approaches -- the book helps radar engineers develop tracking solutions when observations are non-linear functions of target state, when the target state distributions or measurement error distributions are not Gaussian, in low data rate and low signal to noise ratio situations, and when notions of contact and association are merged or unresolved among more than one target.

Career Opportunities in the Internet, Video Games, and Multimedia T. Allan Taylor 2009-01-01 Provides updated key information, including salary ranges, employment trends, and technical requirements. Career profiles include animator, content specialist, game designer, online editor, web security manager, and more.

A Journey Through the Systems Landscape Harold Bud Lawson 2010 Systems are everywhere and affect us daily in our private and professional lives. We all use the word "system" to describe something that is essential but often abstract, complex and even mysterious.

However, learning to utilize system concepts as first class objects as well as methodologies for systems thinking and systems engineering provides a basis for removing the mystery and moving towards mastery even for complex systems. This journey through the Systems Landscape has been developed to promote learning to "think" and "act" in terms of systems. A unique aspect is the introduction of concrete system semantics provided as a "system survival kit" and based upon a limited number of concepts and principles as well as a mental model called the system-coupling

diagram. This discipline independent presentation assists individuals and is essential for building a learning organization that can utilize a systems approach to achieving its enterprise goals. The eight chapters are presented as stops along a journey that successively build system knowledge. Each chapter terminates with a Knowledge Verification section that provides questions and exercises for individuals and groups. Case studies reflecting the utilization of the system related concepts, principles and methodologies are provided as chapter interludes.