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Reliability Evaluation of Engineering Systems Power System Reliability Evaluation Advancements in Fuzzy Reliability Theory Reliability Assessment of Electric Power Systems Using Monte Carlo Methods Machine Vision Inspection Systems, Machine Learning-Based Approaches Rising Threats in Expert Applications and Solutions A Primer on the Taguchi Method System Reliability Management Product-Service Integration for Sustainable Solutions Wind Power Based Isolated Energy Systems Probability and Stochastic Processes Managerial Strategies and Solutions for Business Success in Asia Verification and Validation in Scientific Computing Innovative and Agile Contracting for Digital Transformation and Industry 4.0 Computer Simulation Validation Low-Power Variation-Tolerant Design in Nanometer Silicon Nuclear Science Abstracts Biomechanics Applied Mechanics Reviews Security Solutions and Applied Cryptography in Smart Grid Communications Recent Advances in Intelligent Information Systems and Applied Mathematics Fuzzy Stochastic Optimization Design of Experiments Using The Taguchi Approach Fuzzy Optimization Neutrosophic Sets and Systems: An International Book Series in Information Science and Engineering, vol. 21 / 2018 Neutrosophic Sets and Systems: An International Book Series in Information Science and Engineering, vol. 19 / 2018 Neutrosophic Goal Geometric Programming Problem based on

Geometric Mean Method and its Application
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Neural Computation Intuitionistic and Type-2 Fuzzy
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2021 Glocalized Solutions for Sustainability in
Manufacturing Transient Analysis of Power Systems
Predictive Modelling for Energy Management and Power
Systems Engineering

Advancements in Fuzzy Reliability Theory Oct 29 2022
In recent years, substantial efforts are being made
in the development of reliability theory including
fuzzy reliability theories and their applications to
various real-life problems. Fuzzy set theory is
widely used in decision making and multi criteria
such as management and engineering, as well as other
important domains in order to evaluate the
uncertainty of real-life systems. Fuzzy reliability
has proven to have effective tools and techniques
based on real set theory for proposed models within
various engineering fields, and current research
focuses on these applications. Advancements in Fuzzy
Reliability Theory introduces the concept of
reliability fuzzy set theory including various
methods, techniques, and algorithms. The chapters
present the latest findings and research in fuzzy

reliability theory applications in engineering areas. While examining the implementation of fuzzy reliability theory among various industries such as mining, construction, automobile, engineering, and more, this book is ideal for engineers, practitioners, researchers, academicians, and students interested in fuzzy reliability theory applications in engineering areas.

Fuzzy Stochastic Optimization Mar 10 2021 In 2014, winner of "Outstanding Book Award" by The Japan Society for Fuzzy Theory and Intelligent Informatics. Covering in detail both theoretical and practical perspectives, this book is a self-contained and systematic depiction of current fuzzy stochastic optimization that deploys the fuzzy random variable as a core mathematical tool to model the integrated fuzzy random uncertainty. It proceeds in an orderly fashion from the requisite theoretical aspects of the fuzzy random variable to fuzzy stochastic optimization models and their real-life case studies. The volume reflects the fact that randomness and fuzziness (or vagueness) are two major sources of uncertainty in the real world, with significant implications in a number of settings. In industrial engineering, management and economics, the chances are high that decision makers will be confronted with information that is simultaneously probabilistically uncertain and fuzzily imprecise, and optimization in the form of a decision must be made in an environment that is doubly uncertain, characterized by a co-occurrence of randomness and fuzziness. This book begins by outlining the history and development of the fuzzy random variable before detailing numerous optimization models and

applications that include the design of system controls for a dam.

Reliability Evaluation of Engineering Systems Dec 31 2022 In response to new developments in the field, practical teaching experience, and readers' suggestions, the authors of the warmly received Reliability Evaluation of Engineering Systems have updated and extended the work-providing extended coverage of fault trees and a more complete examination of probability distribution, among other things-without disturbing the original's concept, structure, or style.

Nuclear Science Abstracts Aug 15 2021

Product-Service Integration for Sustainable Solutions Apr 22 2022 "An Industrial Product-Service System is characterized by the integrated and mutually determined planning, development, provision and use of product and service shares including its immanent software components in Business-to-Business applications and represents a knowledge-intensive socio-technical system." - Meier, Roy, Seliger (2010) Since the first conference in 2009, the CIRP International Conference on Industrial Product-Service Systems has become a well-established international forum for the review and discussion of advances, research results and industrial improvements. Researchers from all over the world have met at previous IPS2 conferences in Cranfield (2009), Linköping (2010), Braunschweig (2011) and Tokyo (2012). In 2013, the 5th CIRP International Conference on Industrial Product-Service Systems is held in Bochum. Important topics of IPS2 research presented at the conference are: planning and development, sustainability, business models,

operation, service engineering, knowledge management, ICT, modeling and simulation, marketing and economic aspects as well as the role of the human in IPS2.

Biomechanics Jul 14 2021 In this book, the authors present in detail several recent methodologies and algorithms that they developed during the last fifteen years. The deterministic methods account for uncertainties through empirical safety factors, which implies that the actual uncertainties in materials, geometry and loading are not truly considered. This problem becomes much more complicated when considering biomechanical applications where a number of uncertainties are encountered in the design of prosthesis systems. This book implements improved numerical strategies and algorithms that can be applied to biomechanical studies.

Neutrosophic Sets and Systems, Vol. 46, 2021 Nov 25 2019 Papers on neutrosophic programming, neutrosophic hypersoft set, neutrosophic topological spaces, NeutroAlgebra, NeutroGeometry, AntiGeometry, NeutroNearRings, neutrosophic differential equations, etc.

Machine Vision Inspection Systems, Machine Learning-Based Approaches Aug 27 2022 Machine Vision Inspection Systems (MVIS) is a multidisciplinary research field that emphasizes image processing, machine vision and, pattern recognition for industrial applications. Inspection techniques are generally used in destructive and non-destructive evaluation industry. Now a day's the current research on machine inspection gained more popularity among various researchers, because the

manual assessment of the inspection may fail and turn into false assessment due to a large number of examining while inspection process. This volume 2 covers machine learning-based approaches in MVIS applications and it can be employed to a wide diversity of problems particularly in Non-Destructive testing (NDT), presence/absence detection, defect/fault detection (weld, textile, tiles, wood, etc.), automated vision test & measurement, pattern matching, optical character recognition & verification (OCR/OCV), natural language processing, medical diagnosis, etc. This edited book is designed to address various aspects of recent methodologies, concepts, and research plan out to the readers for giving more depth insights for perusing research on machine vision using machine learning-based approaches.

Recent Advances in Intuitionistic Fuzzy Logic Systems and Mathematics Feb 27 2020 This book provides an overview of the state-of-the-art in both the theory and methods of intuitionistic fuzzy logic, partial differential equations and numerical methods in informatics. Covering topics such as fuzzy intuitionistic Hilbert spaces, intuitionistic fuzzy differential equations, fuzzy intuitionistic metric spaces, and numerical methods for differential equations, it discusses applications such as fuzzy real-time scheduling, intelligent control, diagnostics and time series prediction. The book features selected contributions presented at the 6th international congress of the Moroccan Applied Mathematics Society, which took place at Sultan Moulay Slimane University Beni Mellal, Morocco, from 7 to 9 November 2019.

Design of Experiments Using The Taguchi Approach

Feb 06 2021 Fulfill the practical potential of DOE- with a powerful, 16-step approach for applying the Taguchi method Over the past decade, Design of Experiments (DOE) has undergone great advances through the work of the Japanese management guru Genechi Taguchi. Yet, until now, books on the Taguchi method have been steeped in theory and complicated statistical analysis. Now this trailblazing work translates the Taguchi method into an easy-to-implement 16-step system. Based on Ranjit Roy's successful Taguchi training course, this extensively illustrated book/CD-ROM package gives readers the knowledge and skills necessary to understand and apply the Taguchi method to engineering projects—from theory and applications to hands-on analysis of the data. It is suitable for managers and technicians without a college-level engineering or statistical background, and its self-study pace—with exercises included in each chapter—helps readers start using Taguchi DOE tools on the job quickly. Special features include: * An accompanying CD-ROM of Qualitek-4 software, which performs calculations and features all example experiments described in the book * Problem-solving exercises relevant to actual engineering situations, with solutions included at the end of the text * Coverage of two-, three-, and four-level factors, analysis of variance, robust designs, combination designs, and more Engineers and technical personnel working in process and product design—as well as other professionals interested in the Taguchi method—will find this book/CD-ROM a tremendously important and useful asset for making the most of DOE in their

work.

Wind Power Based Isolated Energy Systems Mar 22 2022 This book offers methods to improve energy access and support social and economic development through the appropriate and reliable design of isolated wind energy systems. The findings reported on wind based isolated power generation show that the proper match of turbine diameter and generator rating is vital, and is governed by the site wind resource and the load profile to be served. The methodology for sizing and selecting appropriate system parameters, taking into account the resource uncertainty, is demonstrated throughout the chapters of this monograph. Readers will discover information on the methodologies for modelling, design and optimization of the systems in terms of safety, functionality, longevity, and practicality. Details are provided on the design space of wind-battery systems, multiple wind generator systems, and wind-PV-battery hybrids to cover all the bases of isolated wind energy systems. This monograph aims to serve as a guide to system developers, manufacturers, and financing institutions on the design aspects of isolated wind energy systems.

Predictive Modelling for Energy Management and Power Systems Engineering Aug 22 2019 Predictive Modeling for Energy Management and Power Systems Engineering introduces readers to the cutting-edge use of big data and large computational infrastructures in energy demand estimation and power management systems. The book supports engineers and scientists who seek to become familiar with advanced optimization techniques for power systems designs, optimization techniques and

algorithms for consumer power management, and potential applications of machine learning and artificial intelligence in this field. The book provides modeling theory in an easy-to-read format, verified with on-site models and case studies for specific geographic regions and complex consumer markets. Presents advanced optimization techniques to improve existing energy demand system Provides data-analytic models and their practical relevance in proven case studies Explores novel developments in machine-learning and artificial intelligence applied in energy management Provides modeling theory in an easy-to-read format

Glocalized Solutions for Sustainability in Manufacturing Oct 24 2019 The 18th CIRP International Conference on Life Cycle Engineering (LCE) 2011 continues a long tradition of scientific meetings focusing on the exchange of industrial and academic knowledge and experiences in life cycle assessment, product development, sustainable manufacturing and end-of-life-management. The theme "Glocalized Solutions for Sustainability in Manufacturing" addresses the need for engineers to develop solutions which have the potential to address global challenges by providing products, services and processes taking into account local capabilities and constraints to achieve an economically, socially and environmentally sustainable society in a global perspective. *Glocalized Solutions for Sustainability in Manufacturing* do not only involve products or services that are changed for a local market by simple substitution or the omitting of functions. Products and services need to be addressed that

ensure a high standard of living everywhere. Resources required for manufacturing and use of such products are limited and not evenly distributed in the world. Locally available resources, local capabilities as well as local constraints have to be drivers for product- and process innovations with respect to the entire life cycle. The 18th CIRP International Conference on Life Cycle Engineering (LCE) 2011 serves as a platform for the discussion of the resulting challenges and the collaborative development of new scientific ideas.

Recent Advances in Intelligent Information Systems and Applied Mathematics Apr 10 2021 This book describes the latest advances in intelligent techniques such as fuzzy logic, neural networks, and optimization algorithms, and their relevance in building intelligent information systems in combination with applied mathematics. The authors also outline the applications of these systems in areas like intelligent control and robotics, pattern recognition, medical diagnosis, time series prediction, and optimization of complex problems. By sharing fresh ideas and identifying new targets/problems it offers young researchers and students new directions for their future research. The book is intended for readers from mathematics and computer science, in particular professors and students working on theory and applications of intelligent systems for real-world applications.

Verification and Validation in Scientific Computing Dec 19 2021 Advances in scientific computing have made modelling and simulation an important part of the decision-making process in engineering, science, and public policy. This book provides a

comprehensive and systematic development of the basic concepts, principles, and procedures for verification and validation of models and simulations. The emphasis is placed on models that are described by partial differential and integral equations and the simulations that result from their numerical solution. The methods described can be applied to a wide range of technical fields, from the physical sciences, engineering and technology and industry, through to environmental regulations and safety, product and plant safety, financial investing, and governmental regulations. This book will be genuinely welcomed by researchers, practitioners, and decision makers in a broad range of fields, who seek to improve the credibility and reliability of simulation results. It will also be appropriate either for university courses or for independent study.

Cumulated Index Medicus May 31 2020

System Reliability Management May 24 2022 This book provides the latest research advances in the field of system reliability assurance and engineering. It contains reference material for applications of reliability in system engineering, offering a theoretical sound background with adequate numerical illustrations. Included are concepts pertaining to reliability analysis, assurance techniques and methodologies, tools, and practical applications of system reliability modeling and allocation. The collection discusses various soft computing techniques like artificial intelligence and particle swarm optimization approach for reliability assessment. Importance of differentiating between the optimal release time and testing stop time of

the software has been explicitly discussed and presented in the book. **Features:** Creates understanding of the costs associated with complex systems Covers reliability measurement of engineering systems Incorporates an efficient effort-based expenditure policy incorporating cost and reliability criteria Provides information for optimal testing stop and release time of software system Presents software performance and security layout Addresses reliability prediction and its maintenance through advanced analytics techniques Overall, **System Reliability Management: Solutions and Techniques** is a collaborative and interdisciplinary approach for better communication of problems and solutions to increase the performance of the system for better utilization and resource management.

Security Solutions and Applied Cryptography in Smart Grid Communications May 12 2021 Electrical energy usage is increasing every year due to population growth and new forms of consumption. As such, it is increasingly imperative to research methods of energy control and safe use. **Security Solutions and Applied Cryptography in Smart Grid Communications** is a pivotal reference source for the latest research on the development of smart grid technology and best practices of utilization. Featuring extensive coverage across a range of relevant perspectives and topics, such as threat detection, authentication, and intrusion detection, this book is ideally designed for academicians, researchers, engineers and students seeking current research on ways in which to implement smart grid platforms all over the globe.

Handbook of Neural Computation Apr 30 2020 Handbook of Neural Computation explores neural computation applications, ranging from conventional fields of mechanical and civil engineering, to electronics, electrical engineering and computer science. This book covers the numerous applications of artificial and deep neural networks and their uses in learning machines, including image and speech recognition, natural language processing and risk analysis. Edited by renowned authorities in this field, this work is comprised of articles from reputable industry and academic scholars and experts from around the world. Each contributor presents a specific research issue with its recent and future trends. As the demand rises in the engineering and medical industries for neural networks and other machine learning methods to solve different types of operations, such as data prediction, classification of images, analysis of big data, and intelligent decision-making, this book provides readers with the latest, cutting-edge research in one comprehensive text. Features high-quality research articles on multivariate adaptive regression splines, the minimax probability machine, and more Discusses machine learning techniques, including classification, clustering, regression, web mining, information retrieval and natural language processing Covers supervised, unsupervised, reinforced, ensemble, and nature-inspired learning methods

Transient Analysis of Power Systems Sep 23 2019 The simulation of electromagnetic transients is a mature field that plays an important role in the design of modern power systems. Since the first steps in this

field to date, a significant effort has been dedicated to the development of new techniques and more powerful software tools. Sophisticated models, complex solution techniques and powerful simulation tools have been developed to perform studies that are of supreme importance in the design of modern power systems. The first developments of transients tools were mostly aimed at calculating over-voltages. Presently, these tools are applied to a myriad of studies (e.g. FACTS and Custom Power applications, protective relay performance, simulation of smart grids) for which detailed models and fast solution methods can be of paramount importance. This book provides a basic understanding of the main aspects to be considered when performing electromagnetic transients studies, detailing the main applications of present electromagnetic transients (EMT) tools, and discusses new developments for enhanced simulation capability. Key features: Provides up-to-date information on solution techniques and software capabilities for simulation of electromagnetic transients. Covers key aspects that can expand the capabilities of a transient software tool (e.g. interfacing techniques) or speed up transients simulation (e.g. dynamic model averaging). Applies EMT-type tools to a wide spectrum of studies that range from fast electromagnetic transients to slow electromechanical transients, including power electronic applications, distributed energy resources and protection systems. Illustrates the application of EMT tools to the analysis and simulation of smart grids.

Power System Reliability Evaluation Nov 29 2022
First Published in 1970. Routledge is an imprint of

Taylor & Francis, an informa company.

Probability and Stochastic Processes Feb 18 2022

This text introduces engineering students to probability theory and stochastic processes. Along with thorough mathematical development of the subject, the book presents intuitive explanations of key points in order to give students the insights they need to apply math to practical engineering problems. The first seven chapters contain the core material that is essential to any introductory course. In one-semester undergraduate courses, instructors can select material from the remaining chapters to meet their individual goals. Graduate courses can cover all chapters in one semester.

A Primer on the Taguchi Method Jun 24 2022 A clear, simple and essentially non-mathematical presentation, this practical guide introduces you to the basic concepts, techniques and applications of the renowned Taguchi approach. A Primer on the Taguchi Method introduces the fundamental concepts of Taguchi experimental design and shows engineers how to design, analyze, and interpret experiments using the Taguchi approach for a wide range of common products and processes. Written for manufacturing and production engineers, as well as design engineers and managers, this book explains the most practical ways to apply the Taguchi approach. The Taguchi approach to quality: the power of the Taguchi approach shows how it can be applied to an array of products from automobiles to computers. Learn the extraordinary benefits of building quality into the design, the heart of the Taguchi technique. Numerous real-world examples will help you see how the Taguchi Method works in a

variety of manufacturing applications. For those who need a more rigorous statistical treatment, the book's working appendices provide full mathematical details on orthogonal arrays, triangular tables and linear graphs, plus fully worked solutions to problems presented in the example case studies.

Neutrosophic Sets and Systems: An International Book Series in Information Science and Engineering, vol. 21 / 2018 Dec 07 2020 "Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc.

Fuzzy Optimization Jan 08 2021 Optimization is an extremely important area in science and technology which provides powerful and useful tools and techniques for the formulation and solution of a multitude of problems in which we wish, or need, to find a best possible option or solution. The volume is divided into a couple of parts which present various aspects of fuzzy optimization, some related more general issues, and applications.

Neutrosophic Goal Geometric Programming Problem based on Geometric Mean Method and its Application Oct 05 2020 This paper describes neutrosophic goal geometric programming method, a new concept to solve multi-objective non-linear optimization problem under uncertainty. The proposed method is described here as an extension of fuzzy and intuitionistic fuzzy goal geometric programming technique in which the degree of acceptance, degree of indeterminacy

and degree of rejection is simultaneously considered.

Neutrosophic Sets and Systems: An International Book Series in Information Science and Engineering, vol. 19 / 2018 Nov 05 2020 "Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc.

Mathematics in Engineering Sciences Aug 03 2020 This book includes research studies, novel theory, as well as new methodology and applications in mathematics and management sciences. The book will provide a comprehensive range of mathematics applied to engineering areas for different tasks. It will offer an international perspective and a bridge between classical theory and new methodology in many areas, along with real-life applications. Features Offers solutions to multi-objective transportation problem under cost reliability using utility function Presents optimization techniques to support eco-efficiency assessment in manufacturing processes Covers distance-based function approach for optimal design of engineering processes with multiple quality characteristics Provides discrete time sliding mode control for non-linear networked control systems Discusses second law of thermodynamics as instruments for optimizing fluid dynamic systems and aerodynamic systems

Neutrosophic Sets and Systems Sep 03 2020 "Neutrosophic Sets and Systems" has been created for

publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc.

Nonlinear Analysis and Boundary Value Problems Jul 02 2020 This book is devoted to Prof. Juan J. Nieto, on the occasion of his 60th birthday. Juan José Nieto Roig (born 1958, A Coruña) is a Spanish mathematician, who has been a Professor of Mathematical Analysis at the University of Santiago de Compostela since 1991. His most influential contributions to date are in the area of differential equations. Nieto received his degree in Mathematics from the University of Santiago de Compostela in 1980. He was then awarded a Fulbright scholarship and moved to the University of Texas at Arlington where he worked with Professor V. Lakshmikantham. He received his Ph.D. in Mathematics from the University of Santiago de Compostela in 1983. Nieto's work may be considered to fall within the ambit of differential equations, and his research interests include fractional calculus, fuzzy equations and epidemiological models. He is one of the world's most cited mathematicians according to Web of Knowledge, and appears in the Thompson Reuters Highly Cited Researchers list. Nieto has also occupied different positions at the University of Santiago de Compostela, such as Dean of Mathematics and Director of the Mathematical Institute. He has also served as an editor for various mathematical journals, and was the editor-in-chief of the journal *Nonlinear Analysis: Real World*

Applications from 2009 to 2012. In 2016, Nieto was admitted as a Fellow of the Royal Galician Academy of Sciences. This book consists of contributions presented at the International Conference on Nonlinear Analysis and Boundary Value Problems, held in Santiago de Compostela, Spain, 4th-7th September 2018. Covering a variety of topics linked to Nieto's scientific work, ranging from differential, difference and fractional equations to epidemiological models and dynamical systems and their applications, it is primarily intended for researchers involved in nonlinear analysis and boundary value problems in a broad sense.

Rising Threats in Expert Applications and Solutions Jul 26 2022 This book presents high-quality, peer-reviewed papers from the FICR International Conference on Rising Threats in Expert Applications and Solutions 2020, held at IIS University Jaipur, Rajasthan, India, on January 17-19, 2020. Featuring innovative ideas from researchers, academics, industry professionals and students, the book covers a variety of topics, including expert applications and artificial intelligence/machine learning; advanced web technologies, like IoT, big data, and cloud computing in expert applications; information and cybersecurity threats and solutions; multimedia applications in forensics, security and intelligence; advances in app development; management practices for expert applications; and social and ethical aspects of expert applications in applied sciences.

Reliability Standards for the Operation and Planning of Future Electricity Networks Dec 27 2019 Looks at why historical deterministic practices and

standards, mostly developed in the 1950's, should be reviewed in order to take full advantage of new emerging technologies and facilitate transition to a smart grid paradigm.

Managerial Strategies and Solutions for Business Success in Asia Jan 20 2022 Globalization, sustainable development, and technological applications all affect the current state of the business sector in Asia. This complex industry plays a vital part in the overall economic, social, and political aspects of this region, as well as on a larger international scale. *Managerial Strategies and Solutions for Business Success in Asia* is an authoritative reference source for the latest collection of research perspectives on the development and optimization of various business sectors across the Asian region and examines their role in the globalized economy. Highlighting pertinent topics across an interdisciplinary scale, such as e-commerce, small and medium enterprises, and tourism management, this book is ideally designed for academics, professionals, graduate students, policy makers, and practitioners interested in emerging business and management practices in Asia.

Innovative and Agile Contracting for Digital Transformation and Industry 4.0 Nov 17 2021 Digital transformation is reshaping the business arena as new, successful digital business models are increasing agility and presenting better ways to handle business than the traditional alternatives. Industry 4.0 affects everything in our daily lives and is blurring the line between the physical, the biological, and the digital. This created an

environment where technology and humans are so closely integrated that it is impacting every activity within the organizations. Specifically, contracting processes and procedures are challenged to align with the new business dynamics as traditional contracts are no longer fitting today's agile and continuously changing environments. Businesses are required to facilitate faster, more secure, soft, and real-time transactions while protecting stakeholders' rights and obligations. This includes agile contracts which are dynamically handling scope changes, smart contracts that can automate rule-based functions, friction-less contracts that can facilitate different activities, and opportunity contracts that looks toward the future. *Innovative and Agile Contracting for Digital Transformation and Industry 4.0* analyzes the consequences, benefits, and possible scenarios of contract transformation under the pressure of new technologies and business dynamics in modern times. The chapters cover the problems, issues, complications, strategies, governance, and risks related to the development and enforcement of digital transformation contracting practices. While highlighting topics in the area of digital transformation and contracting such as artificial intelligence, digital business, emerging technologies, and blockchain, this book is ideally intended for business, engineering, and technology practitioners and policy makers, along with practitioners, stakeholders, researchers, academicians, and students interested in understanding the scope, complexity, and importance of innovative contracts and agile contracting.

Low-Power Variation-Tolerant Design in Nanometer Silicon Sep 15 2021 Design considerations for low-power operations and robustness with respect to variations typically impose contradictory requirements. Low-power design techniques such as voltage scaling, dual-threshold assignment and gate sizing can have large negative impact on parametric yield under process variations. This book focuses on circuit/architectural design techniques for achieving low power operation under parameter variations. We consider both logic and memory design aspects and cover modeling and analysis, as well as design methodology to achieve simultaneously low power and variation tolerance, while minimizing design overhead. This book will discuss current industrial practices and emerging challenges at future technology nodes.

Applied Mechanics Reviews Jun 12 2021

Intuitionistic and Type-2 Fuzzy Logic Enhancements in Neural and Optimization Algorithms: Theory and Applications Mar 29 2020 This book describes the latest advances in fuzzy logic, neural networks, and optimization algorithms, as well as their hybrid intelligent combinations, and their applications in the areas such as intelligent control, robotics, pattern recognition, medical diagnosis, time series prediction, and optimization. The topic is highly relevant as most current intelligent systems and devices use some form of intelligent feature to enhance their performance. The book also presents new and advanced models and algorithms of type-2 fuzzy logic and intuitionistic fuzzy systems, which are of great interest to researchers in these areas. Further, it proposes novel, nature-inspired

optimization algorithms and innovative neural models. Featuring contributions on theoretical aspects as well as applications, the book appeals to a wide audience.

Statistics and Probability for Engineering Applications Jan 26 2020 Statistics and Probability for Engineering Applications provides a complete discussion of all the major topics typically covered in a college engineering statistics course. This textbook minimizes the derivations and mathematical theory, focusing instead on the information and techniques most needed and used in engineering applications. It is filled with practical techniques directly applicable on the job. Written by an experienced industry engineer and statistics professor, this book makes learning statistical methods easier for today's student. This book can be read sequentially like a normal textbook, but it is designed to be used as a handbook, pointing the reader to the topics and sections pertinent to a particular type of statistical problem. Each new concept is clearly and briefly described, whenever possible by relating it to previous topics. Then the student is given carefully chosen examples to deepen understanding of the basic ideas and how they are applied in engineering. The examples and case studies are taken from real-world engineering problems and use real data. A number of practice problems are provided for each section, with answers in the back for selected problems. This book will appeal to engineers in the entire engineering spectrum (electronics/electrical, mechanical, chemical, and civil engineering); engineering students and students taking computer

science/computer engineering graduate courses; scientists needing to use applied statistical methods; and engineering technicians and technologists. * Filled with practical techniques directly applicable on the job * Contains hundreds of solved problems and case studies, using real data sets * Avoids unnecessary theory

Reliability Assessment of Electric Power Systems Using Monte Carlo Methods Sep 27 2022 The application of quantitative reliability evaluation in electric power systems has now evolved to the point at which most utilities use these techniques in one or more areas of their planning, design, and operation. Most of the techniques in use are based on analytical models and resulting analytical evaluation procedures. Improvements in and availability of high-speed digital computers have created the opportunity to analyze many of these problems using stochastic simulation methods and over the last decade there has been increased interest in and use made of Monte Carlo simulation in quantitative power system reliability assessment. Monte Carlo simulation is not a new concept and recorded applications have existed for at least 50 yr. However, localized high-speed computers with large-capacity storage have made Monte Carlo simulation an available and sometimes preferable option for many power system reliability applications. Monte Carlo simulation is also an integral part of a modern undergraduate or graduate course on reliability evaluation of general engineering systems or specialized areas such as electric power systems. It is hoped that this textbook will help formalize the many existing

applications of Monte Carlo simulation and assist in their integration in teaching programs. This book presents the basic concepts associated with Monte Carlo simulation.

Computer Simulation Validation Oct 17 2021 This unique volume introduces and discusses the methods of validating computer simulations in scientific research. The core concepts, strategies, and techniques of validation are explained by an international team of pre-eminent authorities, drawing on expertise from various fields ranging from engineering and the physical sciences to the social sciences and history. The work also offers new and original philosophical perspectives on the validation of simulations. Topics and features: introduces the fundamental concepts and principles related to the validation of computer simulations, and examines philosophical frameworks for thinking about validation; provides an overview of the various strategies and techniques available for validating simulations, as well as the preparatory steps that have to be taken prior to validation; describes commonly used reference points and mathematical frameworks applicable to simulation validation; reviews the legal prescriptions, and the administrative and procedural activities related to simulation validation; presents examples of best practice that demonstrate how methods of validation are applied in various disciplines and with different types of simulation models; covers important practical challenges faced by simulation scientists when applying validation methods and techniques; offers a selection of general philosophical reflections that explore the

significance of validation from a broader perspective. This truly interdisciplinary handbook will appeal to a broad audience, from professional scientists spanning all natural and social sciences, to young scholars new to research with computer simulations. Philosophers of science, and methodologists seeking to increase their understanding of simulation validation, will also find much to benefit from in the text.

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