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2021-09-14

DUDLEY REBEKAH

Intuitionistic and Type-2
Fuzzy Logic
Enhancements in Neural
and Optimization

Algorithms: Theory and
Applications CRC Press
Big Data Analytics is on
the rise in the last years
of the current decade.
Data are overwhelming
the computation capacity
of high performance

servers. Cloud, grid, edge
and fog computing are a
few examples of the
current hype.
Computational
Intelligence offers two
faces to deal with the
development of models:

on the one hand, the crisp approach, which considers for every variable an exact value and, on the other hand, the fuzzy focus, which copes with values between two boundaries. This book presents 114 papers from the 4th International Conference on Fuzzy Systems and Data Mining (FSDM 2018), held in Bangkok, Thailand, from 16 to 19 November 2018. All papers were carefully reviewed by program committee members, who took into consideration the breadth and depth of

the research topics that fall within the scope of FSDM. The acceptance rate was 32.85% . Offering a state-of-the-art overview of fuzzy systems and data mining, the publication will be of interest to all those whose work involves data science.

AI Techniques for Reliability Prediction for Electronic Components
Springer Science & Business Media

This six volume set LNCS 11063 - 11068 constitutes the thoroughly refereed conference proceedings of

the 4th International Conference on Cloud Computing and Security, ICCCS 2018, held in Haikou, China, in June 2018. The 386 full papers of these six volumes were carefully reviewed and selected from 1743 submissions. The papers cover ideas and achievements in the theory and practice of all areas of inventive systems which includes control, artificial intelligence, automation systems, computing systems, electrical and informative systems. The

six volumes are arranged according to the subject areas as follows: cloud computing, cloud security, encryption, information hiding, IoT security, multimedia forensics [AI-Based Services for Smart Cities and Urban Infrastructure](#) Springer Nature
Power Electronics Handbook, Fifth Edition delivers an expert guide to power electronics and their applications. The book examines the foundations of power electronics, power semiconductor devices,

and power converters, before reviewing a constellation of modern applications. Comprehensively updated throughout, this new edition features new sections addressing current practices for renewable energy storage, transmission, integration, and operation, as well as smart-grid security, intelligent energy, artificial intelligence, and machine learning applications applied to power electronics, and autonomous and electric

vehicles. This handbook is aimed at practitioners and researchers undertaking projects requiring specialist design, analysis, installation, commissioning, and maintenance services. Provides a fully comprehensive work addressing each aspect of power electronics in painstaking depth Delivers a methodical technical presentation in over 1500 pages Includes 50+ contributions prepared by leading experts Offers practical support and guidance

with detailed examples and applications for lab and field experimentation Includes new technical sections on smart-grid security and intelligent energy, artificial intelligence, and machine learning applications applied to power electronics and autonomous and electric vehicles Features new chapter level templates and a narrative progression to facilitate understanding
Modern Computational Techniques for Engineering Applications

Physica
 This book constitutes the refereed proceedings of the First International Conference on Smart and Sustainable Agriculture, SSA 2021, held as a virtual event in June 2021. The 12 papers presented were thoroughly reviewed and selected from the 25 qualified submissions. The papers provide discussion on new trends in communication and networking, Internet of Things, data processing for smart agriculture, renewable-energy based devices, low-cost

solutions for wide-area exploitations and developing countries, smart agriculture and urban farming, smart irrigation, application to small-size and large-size exploitations, application of ancestral farming to smart agriculture, waste management for agriculture 2.0, and census of regional ancestral farming.
Proceedings of the Second International Conference on Innovations in Computing Research (ICR'23) Academic Press
 Part I: Fundamentals of

ultrasound This part will cover the main basic principles of ultrasound generation and propagation and those phenomena related to low and high intensity ultrasound applications. The mechanisms involved in food analysis and process monitoring and in food process intensification will be shown. Part II: Low intensity ultrasound applications Low intensity ultrasound applications have been used for non-destructive food analysis as well as for process

monitoring. Ultrasonic techniques, based on velocity, attenuation or frequency spectrum analysis, may be considered as rapid, simple, portable and suitable for on-line measurements. Although industrial applications of low-intensity ultrasound, such as meat carcass evaluation, have been used in the food industry for decades, this section will cover the most novel applications, which could be considered as highly relevant for future application in the food

industry. Chapters addressing this issue will be divided into three subsections: (1) food control, (2) process monitoring, (3) new trends. Part III: High intensity ultrasound applications High intensity ultrasound application constitutes a way to intensify many food processes. However, the efficient generation and application of ultrasound is essential to achieving a successful effect. This part of the book will begin with a chapter dealing with the importance of the

design of efficient ultrasonic application systems. The medium is essential to achieve efficient transmission, and for that reason the particular challenges of applying ultrasound in different media will be addressed. The next part of this section constitutes an up-to-date vision of the use of high intensity ultrasound in food processes. The chapters will be divided into four sections, according to the medium in which the ultrasound vibration is transmitted from the

transducers to the product being treated. Thus, solid, liquid, supercritical and gas media have been used for ultrasound propagation. Previous books addressing ultrasonic applications in food processing have been based on the process itself, so chapters have been divided in mass and heat transport, microbial inactivation, etc. This new book will propose a revolutionary overview of ultrasonic applications based on (in the authors' opinion) the most relevant factor

affecting the efficiency of ultrasound applications: the medium in which ultrasound is propagated. Depending on the medium, ultrasonic phenomena can be completely different, but it also affects the complexity of the ultrasonic generation, propagation and application. In addition, the effect of high intensity ultrasound on major components of food, such as proteins, carbohydrates and lipids will be also covered, since this type of information

has not been deeply studied in previous books. Other aspects related to the challenges of food industry to incorporate ultrasound devices will be also considered. This point is also very important since, in the last few years, researchers have made huge efforts to integrate fully automated and efficient ultrasound systems to the food production lines but, in some cases, it was not satisfactory. In this sense, it is necessary to identify and review the main

related problems to efficiently produce and transmit ultrasound, scale-up, reduce cost, save energy and guarantee the production of safe, healthy and high added value foods. *Handbook of Research on Advancements in Robotics and Mechatronics* IOS Press
Fuzzy logic is key to the efficient working of many consumer, industrial and financial applications. Providing a brief history of the subject as well as analysing the system architecture of a fuzzy

controller, this book gives a full and clearly set out introduction to the topic. As an essential guide to this subject for many engineering disciplines, *Foundations of Fuzzy Control* successfully exploits established results in linear and non-linear control theory. It presents a full coverage of fuzzy control, from basic mathematics to feedback control, all in a tutorial style. In particular this book: Systematically analyses several fuzzy PID (Proportional-Integral-Derivative) control

systems and state space control, and also self-learning control mechanisms. Sets out practical worked through problems, examples and case studies to illustrate each type of control system. Provides an accompanying Web site that contains downloadable Matlab programs. This book is an invaluable resource for a broad spectrum of researchers, practitioners, and students in engineering. In particular it is especially relevant for those in mechanical and

electrical engineering, as well as those in artificial intelligence, machine learning, bio-informatics, and operational research. It is also a useful reference for practising engineers, working on the development of fuzzy control applications and system architectures. [Introduction to Genetic Algorithms](#) IGI Global. We often come across computational optimization virtually in all branches of engineering and industry. Many engineering problems involve heuristic search

and optimization, and, once discretized, may become combinatorial in nature, which gives rise to certain difficulties in terms of solution procedure. Some of these problems have enormous search spaces, are NP-hard and hence require heuristic solution techniques. Another difficulty is the lack of ability of classical solution techniques to determine appropriate optima of non-convex problems. Under these conditions, recent advances in computational

optimization techniques have been shown to be advantageous and successful compared to classical approaches. This Volume presents some of the latest developments with a focus on the design of algorithms for computational optimization and their applications in practice. Through the chapters of this book, researchers and practitioners share their experience and newest methodologies with regard to intelligent optimization and provide various case studies of

the application of intelligent optimization techniques in real-world applications. This book can serve as an excellent reference for researchers and graduate students in computer science, various engineering disciplines and the industry. Foundations of Fuzzy Control Shashwat Publication
The Second International Conference on Innovations in Computing Research (ICR'23) brings together a diverse group of researchers from all over the world with the

intent of fostering collaboration and dissemination of the innovations in computing technologies. The conference is aptly segmented into six tracks: Data Science, Computer and Network Security, Health Informatics and Medical Imaging, Computer Science and Computer Engineering Education, Internet of Things, and Smart Cities/Smart Energy. These tracks aim to promote a birds-of-the-same-feather congregation and

maximize participation. The Data Science track covers a wide range of topics including complexity score for missing data, deep learning and fake news, cyberbullying and hate speech, surface area estimation, analysis of gambling data, car accidents predication model, augmenting character designers' creativity, deep learning for road safety, effect of sleep disturbances on the quality of sleep, deep learning-based path-planning, vehicle data

collection and analysis, predicting future stocks prices, and trading robot for foreign exchange. Computer and Network Security track is dedicated to various areas of cybersecurity. Among these are decentralized solution for secure management of IoT access rights, multi-factor authentication as a service (MFAaaS) for federated cloud environments, user attitude toward personal data privacy and data privacy economy, host IP obfuscation and

performance analysis, and vehicle OBD-II port countermeasures. The Computer Science and Engineering Education track enfolds various educational areas, such as data management in industry-academia joint research: a perspective of conflicts and coordination in Japan, security culture and security education, training and awareness (SETA), influencing information security management, engaging undergraduate students in developing graphical user interfaces for NSF

funded research project, and emotional intelligence of computer science teachers in higher education. On the Internet of Things (IoT) track, the focus is on industrial air quality sensor visual analytics, social spider optimization meta-heuristic for node localization optimization in wireless sensor networks, and privacy aware IoT-based fall detection with infrared sensors and deep learning. The Smart Cities and Smart Energy track spans various areas,

which include, among others, research topics on heterogeneous transfer learning in structural health monitoring for high-rise structures and energy routing in energy Internet using the firefly algorithm.

[Transactions of the American Foundrymen's Society](#) Elsevier

The leading countries around the globe, including Australia, have taken serious steps to decarbonize their energy and transportation sectors as part of their obligations for a suitable future with

fewer emissions and a better environment. The decarbonization plans in different countries have resulted in changes such as increases in the penetration level of renewable energy sources and the introduction of electric vehicles as a target for future transportation systems. This is the point where mobility meets electricity and brings new challenges and opportunities, especially in the integration with modern power systems. The main impact would be

on the demand-side and the distribution network. These impacts would be also reflected in the operation, control, security, and stability of transmission systems. This creates a new grid architecture characterized by a growing variability and uncertainties. Moreover, the growth in the share of renewable energy in the total energy market is one of the major causes of the increasing fluctuations in the balance between generation and consumption in the whole system. Therefore, the

key challenge lies in developing new concepts to ensure the effective integration of distributed energy resources and electric transportation systems, including EVs, into existing and future market structures. Electric Transportation Systems in Smart Power Grids address how these issues—EVs, E-buses, and other smart appliances on the demand side—can be aggregated to form virtual power plants, which are considered an efficient solution to provide operational flexibility to

the grid. The book also discusses how EV-based virtual power plants can also provide myriad services for distribution system operators, transmission system operators, and even local prosumers within the energy community. Features: Describes the services required to power systems from EVs and electric transportation sector Covers frequency control in modern power systems using aggregated EVs Discusses the integration and interaction between EVs

and Smart grids
 Introduces electric vehicle aggregation methods for supporting power systems
 Highlights flexibility provided from electric transportation system to smart energy sector
 Discusses the high penetration level of renewable energy sources and EVs

Fuzzy Systems and Data Mining IV CRC

Press

The field of mechatronics integrates modern engineering science and technologies with new ways of thinking,

enhancing the design of products and manufacturing processes. This synergy enables the creation and evolution of new intelligent human-oriented machines. The Handbook of Research on Advancements in Robotics and Mechatronics presents new findings, practices, technological innovations, and theoretical perspectives on the the latest advancements in the field of mechanical engineering. This book is of great use to engineers and scientists, students,

researchers, and practitioners looking to develop autonomous and smart products and systems for meeting today's challenges.

Energy Research

Abstracts Springer

Teaches how to design a fuzzy controller, includes theoretical fundamentals of fuzzy logic as well as practical aspects of fuzzy technology.

Energy Research

Abstracts IGI Global
 Cities are the next frontier for artificial intelligence to permeate. As smart urban environments become

possible, probable, and even preferred, artificial intelligence offers the chance for even further advancement through infrastructure and industry boosting. Opportunity overflows, but without thorough research to guide a complicated development and implementation process, urban environments can become disorganized and outright dangerous for citizens. AI-Based Services for Smart Cities and Urban Infrastructure is a collection of innovative

research that explores artificial intelligence (AI) applications in urban planning. In addition, the book looks at how the internet of things and AI can work together to enable a real smart city and discusses state-of-the-art techniques in urban infrastructure design, construction, operation, maintenance, and management. While highlighting a broad range of topics including construction management, public transportation, and smart agriculture, this book is

ideally designed for engineers, entrepreneurs, urban planners, architects, policymakers, researchers, academicians, and students.

Artificial Intelligence Techniques in Power Systems Operations and Analysis John Wiley & Sons

This book is a collection of papers presented at the International Conference on Intelligent Computing, Information and Control Systems (ICICCS 2020). It encompasses various research works that help

to develop and advance the next-generation intelligent computing and control systems. The book integrates the computational intelligence and intelligent control systems to provide a powerful methodology for a wide range of data analytics issues in industries and societal applications. The book also presents the new algorithms and methodologies for promoting advances in common intelligent computing and control methodologies including

evolutionary computation, artificial life, virtual infrastructures, fuzzy logic, artificial immune systems, neural networks and various neuro-hybrid methodologies. This book is pragmatic for researchers, academicians and students dealing with mathematically intransigent problems. *Index to Theses with Abstracts Accepted for Higher Degrees by the Universities of Great Britain and Ireland and the Council for National Academic Awards World*

Scientific Digital Signal Processing in Power System Protection and Control bridges the gap between the theory of protection and control and the practical applications of protection equipment. Understanding how protection functions is crucial not only for equipment developers and manufacturers, but also for their users who need to install, set and operate the protection devices in an appropriate manner. After introductory chapters

related to protection technology and functions, Digital Signal Processing in Power System Protection and Control presents the digital algorithms for signal filtering, followed by measurement algorithms of the most commonly-used protection criteria values and decision-making methods in protective relays. A large part of the book is devoted to the basic theory and applications of artificial intelligence techniques for protection and control. Fuzzy logic

based schemes, artificial neural networks, expert systems and genetic algorithms with their advantages and drawbacks are discussed. AI techniques are compared and it is also shown how they can be combined to eliminate the disadvantages and magnify the useful features of particular techniques. The information provided in Digital Signal Processing in Power System Protection and Control can be useful for protection engineers working in

utilities at various levels of the electricity network, as well as for students of electrical engineering, especially electrical power engineering. It may also be helpful for other readers who want to get acquainted with and to apply the filtering, measuring and decision-making algorithms for purposes other than protection and control, everywhere fast and on-line signal analysis is needed for proper functioning of the apparatus. Electric Transportation

Systems in Smart Power
Grids Springer

*Introduces cutting-edge control systems to a wide readership of engineers and students *The first book on neuro-fuzzy control systems to take a practical, applications-based approach, backed up with worked examples and case studies *Learn to use VHDL in real-world applications Introducing cutting edge control systems through real-world applications Neural networks and fuzzy logic based systems offer a modern control solution to

AC machines used in variable speed drives, enabling industry to save costs and increase efficiency by replacing expensive and high-maintenance DC motor systems. The use of fast micros has revolutionised the field with sensorless vector control and direct torque control. This book reflects recent research findings and acts as a useful guide to the new generation of control systems for a wide readership of advanced undergraduate and graduate students, as well

as practising engineers. The authors guide readers quickly and concisely through the complex topics of neural networks, fuzzy logic, mathematical modelling of electrical machines, power systems control and VHDL design. Unlike the academic monographs that have previously been published on each of these subjects, this book combines them and is based round case studies of systems analysis, control strategies, design, simulation and implementation. The

result is a guide to applied control systems design that will appeal equally to students and professional design engineers. The book can also be used as a unique VHDL design aid, based on real-world power engineering applications.

Proceedings of International Conference on Intelligent Computing, Information and Control Systems Springer

In the industry of manufacturing and design, one major constraint has been enhancing operating performance using less

time. As technology continues to advance, manufacturers are looking for better methods in predicting the condition and residual lifetime of electronic devices in order to save repair costs and their reputation.

Intelligent systems are a solution for predicting the reliability of these components; however, there is a lack of research on the advancements of this smart technology within the manufacturing industry. *AI Techniques for Reliability Prediction for Electronic Components*

provides emerging research exploring the theoretical and practical aspects of prediction methods using artificial intelligence and machine learning in the manufacturing field. Featuring coverage on a broad range of topics such as data collection, fault tolerance, and health prognostics, this book is ideally designed for reliability engineers, electronic engineers, researchers, scientists, students, and faculty members seeking current research on the

advancement of reliability analysis using AI.

Power Electronics Handbook Springer

Nature

Stressing common characteristics and real applications of the most used microcontrollers, this practical guide provides readers with hands-on knowledge of how to implement three families of microcontrollers (HC11, AVR, and 8051). Unlike the rest of the ocean of literature on individual chips, Microcontrollers in Practice supplies side-by-side comparisons and an

overview that treats the systems as resources available for implementation. Packed with hundreds of practical examples and exercises to foster mastery of concepts and details, the guide also includes several extended projects. By treating the less expensive 8-bit and RISC microcontrollers, this information-dense manual equips students and home-experimenters with the know-how to put these devices into operation. Plant Intelligent

Automation and Digital Transformation IGI Global
Fuzzy logic is a way of thinking that is responsive to human zeal to unveil uncertainty and deal with social paradoxes emerging from it. In this book a number of articles illustrate various social applications to fuzzy logic. The engineering part of the book contains a number of papers, devoted to the description of fuzzy engineering design methodologies. In order to share the experience gained we select papers describing

not the application result only but the way how this result has been obtained, that is explaining the design procedures. The potential readership of this book includes researchers and students, workers and engineers in both areas of social and engineering studies. It can be used as a handbook and textbook also. The book includes some examples of real fuzzy engineering.

Fuzzy Systems: Concepts, Methodologies, Tools, and Applications American Institute of Physics

This 43rd volume assesses the value of EDI to using workstations as building blocks for parallel computing.

Advances in Signal Processing and Communication Springer Nature

The platform is the aim of this conference for all researchers, engineers, practitioners, academicians, students and industrial professionals sharing to present their research results and development activities in the area of power control and its

optimization techniques. We trust that the theme of the conference - Awareness in Innovation of global optimal - provides emulation between the researchers in their practical results as it relates to the industrial need. This platform brings together researchers working on the development of techniques and methodologies to improve the performance of power and hybrid energy, control and robotics, hybrid system optimization and management, finance and

cost effective to lead for global optimal in industry, business.
markets, resources and