

# Material Handling Equipment Selection By Fuzzy Multi

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## **Assessment and Simulation Tools for Sustainable Energy Systems**

- Fausto Cavallaro 2013-08-13

In recent years, the concept of energy has been revised and a new model based on the principle of sustainability has become more and more pervasive. The appraisal of energy technologies and projects is complex and uncertain as the related decision making has to encompass environmental, technical, economic and social factors and information sources. The scientific procedure of assessment has a vital role as it can supply the right tools to evaluate the actual situation and make realistic forecasts of the effects and outcomes of any actions undertaken.

Assessment and Simulation Tools for Sustainable Energy Systems offers reviews of the main assessment and simulation methods used for effective energy assessment. Divided across three sections, Assessment and Simulation Tools for Sustainable Energy Systems develops the reader's ability to select suitable tools to support decision making and implementation of sustainable energy projects. The first is dedicated to the analysis of theoretical foundations and applications of multi-criteria decision making. This is followed by chapters concentrating on the theory and practice of fuzzy inference, neural nets and algorithms genetics. Finally, simulation methods such as Monte Carlo analysis, mathematical programming and others are detailed. This comprehensive

illustration of these tools and their application makes Assessment and Simulation Tools for Sustainable Energy Systems a key guide for researchers, scientists, managers, politicians and industry professionals developing the field of sustainable energy systems. It may also prompt further advancements in soft computing and simulation issues for students and researchers.

## **Uncertainty Modeling In Knowledge Engineering And Decision Making - Proceedings Of The 10th International Flins Conference**

- Cengiz Kahraman 2012-08-10

FLINS, originally an acronym for Fuzzy Logic and Intelligent Technologies in Nuclear Science, is now extended to Computational Intelligence for applied research. The contributions to the 10th of FLINS conference cover state-of-the-art research, development, and technology for computational intelligence systems, both from the foundations and the applications points-of-view.

## **Fuzzy Multi-Criteria Decision Making** - Cengiz Kahraman 2008-08-09

This work examines all the fuzzy multicriteria methods recently developed, such as fuzzy AHP, fuzzy TOPSIS, interactive fuzzy multiobjective stochastic linear programming, fuzzy multiobjective dynamic programming, grey fuzzy multiobjective optimization, fuzzy multiobjective geometric programming, and more. Each of the 22

chapters includes practical applications along with new developments/results. This book may be used as a textbook in graduate operations research, industrial engineering, and economics courses. It will also be an excellent resource, providing new suggestions and directions for further research, for computer programmers, mathematicians, and scientists in a variety of disciplines where multicriteria decision making is needed.

Sustainability as a Multi-criteria Concept - Luis Diaz-Balteiro 2020-11-23  
Sustainability is a fairly old concept, born in the 18th century in the field of forestry, within a mono-functionality perspective. The concept has considerably evolved in the last few years towards a multi-functionality context, with applications reported in practically all areas of economic interest. On the other hand, modern sustainability is a complex problem, for two reasons: a) The multiplicity of functions of a very different nature involved in the process and b) The manner in which different segments of the society or stakeholders perceive the relative importance of these functions. For the above reasons, a realistic approach for dealing with the sustainability issue requires taking into consideration multiple criteria of different nature (economic, environmental and social), and in many cases within a participatory decision making framework. This book presents a collection of papers, dealing with different theoretical and applied issues of sustainability, with the help of a modern multi-criteria decision-making theory, with a single as well as several stakeholders involved in the decision-making process. Hopefully, this material will encourage academics and practitioners to alter their research in this hot and vital topic. After all, the sustainable management of the environment and its embedded resources is one of the most important, if not the major challenge of the 21st century.

**Issues in Global Business and Management Research:  
Proceedings of the 2008 International Online Conference on  
Business and Management (IOCBM 2008)** - Mehran Nejati  
2008-10-10

IOCBM 2008 is the second International Online Conference on Business and Management at a global scale, attracting business and management

practitioners, students, professors, researchers, and activists from around the world to submit their research findings to the conference. It is an annual conference in the field of business and management which is held by ALA Excellence Consulting Group annually. More information about this conference can be found at <http://www.ala.ir/iocbm2008>.  
Optimization of Manufacturing Systems Using the Internet of Things - Yingfeng Zhang 2016-10-21

Optimization of Manufacturing Systems Using the Internet of Things extends the IoT (Internet of Things) into the manufacturing field to develop an IoMT (Internet of Manufacturing Things) architecture with real-time traceability, visibility, and interoperability in production planning, execution, and control. This book is essential reading for anyone interested in the optimization and control of an intelligent manufacturing system. As modern manufacturing shop-floors can create bottlenecks in the capturing and collection of real-time field information, and because paper-based manual systems are time-consuming and prone to errors, this book helps readers understand how to alleviate these issues, assisting them in their decision-making on shop-floors.. Includes case studies in implementing IoTs for data acquisition, monitoring, and assembly in manufacturing. Helps manufacturers to tackle the growing complexities and uncertainties of manufacturing systems in globalized business environments Acts as an introduction to using IoT for readers across industrial and manufacturing engineering

Rough Sets, Fuzzy Sets, Data Mining and Granular Computing - Hiroshi Sakai 2009-11-30

Welcome to the 12th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC 2009), held at the Indian Institute of Technology (IIT), Delhi, India, during December 15-18, 2009. RSFDGrC is a series of conferences spanning over the last 15 years. It investigates the meeting points among the four major areas outlined in its title. This year, it was co-organized with the Third International Conference on Pattern Recognition and Machine Intelligence (PReMI 2009), which provided additional means for multifaceted interaction of both scientists and practitioners. It was also the core

component of this year's Rough Set Year in India project. However, it remained a fully international event aimed at building bridges between countries. The first section contains the invited papers and a short report on the above-mentioned project. Let us note that all the RSFDGrC 2009 plenary speakers, Ivo Düntsch, Zbigniew Suraj, Zhongzhi Shi, Sergei Kuznetsov, Qiang Shen, and Yukio Ohsawa, contributed with the full-length articles in the proceedings. The remaining six sections contain 56 regular papers that were selected out of 130 submissions, each peer-reviewed by three PC members. We thank the authors for their high-quality papers submitted to this volume and regret that many deserving papers could not be accepted because of our urge to maintain strict standards. It is worth mentioning that there was quite a good number of papers on the foundations of rough sets and fuzzy sets, many of them authored

by Indian researchers. The fuzzy set theory has been popular in India for a longer time. Now, we can see the rising interest in the rough set theory.

Interval target-based VIKOR method supported on interval distance and preference degree for machine selection - Arian Hafezalkotob

By considering target values for attributes in addition to beneficial and non-beneficial attributes, a traditional MADM technique is converted to a comprehensive form. In many machine selection problems, some attributes have given target values.

**Computational Intelligence in Decision and Control** - Da Ruan 2008

FLINS, originally an acronym for Fuzzy Logic and Intelligent Technologies in Nuclear Science, is now extended to Computational Intelligence for applied research. The contributions to the eighth edition in the series of FLINS conferences cover state-of-the-art research, development, and technology for computational intelligence systems in general, and for intelligent decision and control in particular.

**Production Engineering and Management under Fuzziness** - Cengiz Kahraman 2010-05-18

Production engineering and management involve a series of planning and control activities in a production system. A production system can be as small as a shop with only one machine or as big as a global operation

including many manufacturing plants, distribution centers, and retail locations in multiple continents. The product of a production system can also vary in complexity based on the material used, technology employed, etc. Every product, whether a pencil or an airplane, is produced in a system which depends on good management to be successful. Production management has been at the center of industrial engineering and management science disciplines since the industrial revolution. The tools and techniques of production management have been so successful that they have been adopted to various service industries, as well. The book is intended to be a valuable resource to undergraduate and graduate students interested in the applications of production management under fuzziness. The chapters represent all areas of production management and are organized to reflect the natural order of production management tasks. In all chapters, special attention is given to applicability and wherever possible, numerical examples are presented. While the reader is expected to have a fairly good understanding of the fuzzy logic, the book provides the necessary notation and preliminary knowledge needed in each chapter.

**Advances in Soft Computing - AFSS 2002** - Nikhil R. Pal 2003-07-31

It is our great pleasure to welcome you all to the 2002 AFSS International Conference on Fuzzy Systems (AFSS 2002) to be held in Calcutta, the great City of Joy. AFSS 2002 is the 7th conference in the series initiated by the Asian Fuzzy Systems Society (AFSS). AFSS 2002 is jointly being organized by the Indian Statistical Institute (ISI) and Jadavpur University (JU). Like previous conferences in this series, we assure AFSS 2002 will provide a forum for fruitful interaction and exchange of ideas between the participants from all over the globe. The present conference covers all major facets of soft computing such as fuzzy logic, neural networks, genetic algorithms including both theories and applications.

We hope this meeting will be enjoyable academically and otherwise. We are thankful to the members of the International Program Committee and the Area Chairs for extending their support in various forms to make a strong technical program. Each submitted paper was reviewed by at

least three referees, and in some cases the revised versions were again checked by the referees. As a result of this tough screening process we could select only about 50% of the submitted papers. We again express our sincere thanks to all referees for doing a great job. We are happy to note that 19 different countries from all over the globe are represented by the authors, thereby making it a truly international conference. We are proud to have a list of distinguished speakers including Profs. Z. Pawlak, J. Bezdek, D. Dubois, and T. Yamakawa.

**Applications of Multi-Criteria Decision-Making Theories in Healthcare and Biomedical Engineering** - Ilker Ozsahin 2021-03-25  
Applications of Multi-Criteria Decision-Making Theories in Healthcare and Biomedical Engineering contains several practical applications on how decision-making theory could be used in solving problems relating to the selection of best alternatives. The book focuses on assisting decision-makers (government, organizations, companies, general public, etc.) in making the best and most appropriate decision when confronted with multiple alternatives. The purpose of the analytical MCDM techniques is to support decision makers under uncertainty and conflicting criteria while making logical decisions. The knowledge of the alternatives of the real-life problems, properties of their parameters, and the priority given to the parameters have a great effect on consequences in decision-making. In this book, the application of MCDM has been provided for the real-life problems in health and biomedical engineering issues. Provides a comprehensive analysis and application multi-criteria decision-making methods Presents detail information about MCDM and their usage Covers state-of-the-art MCDM methods and offers applications of MCDM for health and biomedical engineering purposes

**Proceedings of EECE 2020** - Nikolai Vatin 2021-03-26  
This book gathers the latest advances, innovations, and applications in the field of energy, environmental and construction engineering, as presented by international researchers and engineers at the International Scientific Conference Energy, Environmental and Construction Engineering, held in St. Petersburg, Russia on November 19-20, 2020. It covers highly diverse topics, including BIM; bridges,

roads and tunnels; building materials; energy efficient and green buildings; structural mechanics; fluid mechanics; measuring technologies; environmental management; power consumption management; renewable energy; smart cities; and waste management. The contributions, which were selected by means of a rigorous international peer-review process, highlight numerous exciting ideas that will spur novel research directions and foster multidisciplinary collaborations.

*Proceedings of IAC 2022 in Prague* - Group of Authors 2022-05-26  
International Academic Conferences: -Management, Economics and Marketing (IAC-MEM) -Teaching, Learning and E-learning (IAC-TLEl) - Transport, Logistics, Tourism and Sport Science (IAC-TLTS)  
**Industrial Engineering in the Industry 4.0 Era** - Fethi Calisir 2017-12-28

This book gathers extended versions of the best papers presented at the Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE), held in Vienna on July 20-21, 2017. They offer a snapshot of the current state of the art in three main related fields of research, namely industrial engineering, engineering and technology management, and healthcare systems engineering management. The book is intended to integrate theory and practice and to merge different perspectives, from the academic to the industrial and governmental one.

**New Trends in Neutrosophic Theory and Applications** - Florentin Smarandache (editor) 2016-11-05

Neutrosophic theory and applications have been expanding in all directions at an astonishing rate especially after the introduction the journal entitled "Neutrosophic Sets and Systems". New theories, techniques, algorithms have been rapidly developed. One of the most striking trends in the neutrosophic theory is the hybridization of neutrosophic set with other potential sets such as rough set, bipolar set, soft set, hesitant fuzzy set, etc. The different hybrid structure such as rough neutrosophic set, single valued neutrosophic rough set, bipolar neutrosophic set, single valued neutrosophic hesitant fuzzy set, etc. are proposed in the literature in a short period of time. Neutrosophic set has

been a very important tool in all various areas of data mining, decision making, e-learning, engineering, medicine, social science, and some more. The book “New Trends in Neutrosophic Theories and Applications” focuses on theories, methods, algorithms for decision making and also applications involving neutrosophic information. Some topics deal with data mining, decision making, e-learning, graph theory, medical diagnosis, probability theory, topology, and some more. 30 papers by 39 authors and coauthors.

Decision Making with Spherical Fuzzy Sets - Cengiz Kahraman  
2020-05-27

This book introduces readers to the novel concept of spherical fuzzy sets, showing how these sets can be applied in practice to solve various decision-making problems. It also demonstrates that these sets provide a larger preference volume in 3D space for decision-makers. Written by authoritative researchers, the various chapters cover a large amount of theoretical and practical information, allowing readers to gain an extensive understanding of both the fundamentals and applications of spherical fuzzy sets in intelligent decision-making and mathematical programming.

**Spatial Decision Support Systems** - Ramanathan Sugumaran  
2010-11-15

Although interest in Spatial Decision Support Systems (SDSS) continues to grow rapidly in a wide range of disciplines, students, planners, managers, and the research community have lacked a book that covers the fundamentals of SDSS along with the advanced design concepts required for building SDSS. Filling this need, *Spatial Decision Support Systems: Principles and Practices* provides a comprehensive examination of the various aspects of SDSS evolution, components, architecture, and implementation. It integrates research from a variety of disciplines, including the geosciences, to supply a complete overview of SDSS technologies and their application from an interdisciplinary perspective. This groundbreaking reference provides thorough coverage of the roots of SDSS. It explains the core principles of SDSS, how to use them in various decision making contexts, and how to design and develop them

using readily available enabling technologies and commercial tools. The book consists of four major parts, each addressing different topic areas in SDSS: Presents an introduction to SDSS and the evolution of SDSS Covers the essential and optional components of SDSS Focuses on the design and implementation of SDSS Reviews SDSS applications from various domains and disciplines—investigating current challenges and future directions The text includes numerous detailed case studies, example applications, and methods for tailoring SDSS to your work environment. It also integrates sample code segments throughout. Addressing the technical and organizational challenges that affect the success or failure of SDSS, the book concludes by considering future directions of this rapidly emerging field of study.

*Robotic Systems: Concepts, Methodologies, Tools, and Applications* - Management Association, Information Resources 2020-01-03

Through expanded intelligence, the use of robotics has fundamentally transformed a variety of fields, including manufacturing, aerospace, medicine, social services, and agriculture. Continued research on robotic design is critical to solving various dynamic obstacles individuals, enterprises, and humanity at large face on a daily basis. *Robotic Systems: Concepts, Methodologies, Tools, and Applications* is a vital reference source that delves into the current issues, methodologies, and trends relating to advanced robotic technology in the modern world. Highlighting a range of topics such as mechatronics, cybernetics, and human-computer interaction, this multi-volume book is ideally designed for robotics engineers, mechanical engineers, robotics technicians, operators, software engineers, designers, programmers, industry professionals, researchers, students, academicians, and computer practitioners seeking current research on developing innovative ideas for intelligent and autonomous robotics systems.

Generalizations of Fuzzy Information Measures - Anshu Ohlan  
2016-10-20

This book develops applications of novel generalizations of fuzzy information measures in the field of pattern recognition, medical diagnosis, multi-criteria and multi-attribute decision making and

suitability in linguistic variables. The focus of this presentation lies on introducing consistently strong and efficient generalizations of information and information-theoretic divergence measures in fuzzy and intuitionistic fuzzy environment covering different practical examples. The target audience comprises primarily researchers and practitioners in the involved fields but the book may also be beneficial for graduate students.

**Multi Criteria Analysis in the Renewable Energy Industry** - José Ramón San Cristóbal 2012-01-05

Decision makers in the Renewable Energy sector face an increasingly complex social, economic, technological, and environmental scenario in their decision process. Different groups of decision-makers become involved in the process, each group bringing along different criteria therefore, policy formulation for fossil fuel substitution by Renewable Energies must be addressed in a multi-criteria context. Multi Criteria Analysis in the Renewable Energy Industry is a direct response to the increasing interest in the Renewable Energy industry which can be seen as an important remedy to many environmental problems that the world faces today. The multiplicity of criteria and the increasingly complex social, economic, technological, and environmental scenario makes multi-criteria analysis a valuable tool in the decision-making process for fossil fuel substitution. The detailed chapters explore the use of the Multi-criteria decision-making methods and how they provide valuable assistance in reaching equitable and acceptable solutions in the selection of renewable energy projects. Common multi-criteria decision-making methods including Analytical Hierarchy Process, PROMETHEE, ELECTRE, TOPSIS and VIKOR are explored in detail with an application case of each method included at the end of each chapter. As such, Multi Criteria Analysis in the Renewable Energy Industry is an ideal resource for those groups of individuals, institutions and administration such as local authorities, academic institutions, environmental groups, and governments that, through their priorities and evaluation systems, have interests at stake and directly or indirectly influence the decision-making process.

**Dynamics under Uncertainty** - Dragan Pamucar 2021-09-08

The dynamics of systems have proven to be very powerful tools in understanding the behavior of different natural phenomena throughout the last two centuries. However, the attributes of natural systems are observed to deviate from their classical states due to the effect of different types of uncertainties. Actually, randomness and impreciseness are the two major sources of uncertainties in natural systems. Randomness is modeled by different stochastic processes and impreciseness could be modeled by fuzzy sets, rough sets, Dempster-Shafer theory, etc.

**Innovation in Power, Control, and Optimization: Emerging Energy Technologies** - Vasant, Pandian 2011-09-30

Developing a system that can cope with variations of system or control parameters, measurement uncertainty, and complex, multi-objective optimization criteria is a frequent problem in engineering systems design. The need for a priori knowledge and the inability to learn from past experience make the design of robust, adaptive, and stable systems a difficult task. Innovation in Power, Control, and Optimization: Emerging Energy Technologies unites research on the development of techniques and methodologies to improve the performance of power systems, energy planning and environments, controllers and robotics, operation research, and modern artificial computational intelligent techniques. Containing research on power engineering, control systems, and methods of optimization, this book is written for professionals who want to improve their understanding of strategic developments in the area of power, control, and optimization.

Multi-Criteria Decision Analysis in Management - Behl, Abhishek 2020-02-01

Multi-criteria decision making (MCDM) has been extensively used in diverse disciplines, with a variety of MCDM techniques used to solve complex problems. A primary challenge faced by research scholars is to decode these techniques using detailed step-by-step analysis with case studies and data sets. The scope of such work would help decision makers to understand the process of using MCDM techniques

appropriately to solve complex issues without making mistakes. Multi-Criteria Decision Analysis in Management provides innovative insights into the rationale behind using MCDM techniques to solve decision-making problems and provides comprehensive discussions on these techniques from their inception, development, and growth to their advancements and applications. The content within this publication examines hybrid multicriteria models, value theory, and data envelopment. Ideal for researchers, management professionals, students, operations scholars, and academicians, this scholarly work supports and enhances the decision-making process.

Fuzzy Engineering Economics with Applications - Cengiz Kahraman  
2008-09-20

Fuzzy set approaches are suitable to use when the modeling of human knowledge is necessary and when human evaluations are needed. Fuzzy set theory is recognized as an important problem modeling and solution technique. It has been studied extensively over the past 40 years. Most of the early interest in fuzzy set theory pertained to representing uncertainty in human cognitive processes. Fuzzy set theory is now applied to problems in engineering, business, medical and related health sciences, and the natural sciences. This book handles the fuzzy cases of classical engineering economics topics. It contains 15 original research and application chapters including different topics of fuzzy engineering economics. When no probabilities are available for states of nature, decisions are given under uncertainty. Fuzzy sets are a good tool for the operation research analyst facing uncertainty and subjectivity. The main purpose of the first chapter is to present the role and importance of fuzzy sets in the economic decision making problem with the literature review of the most recent advances.

Decision Making in Manufacturing Environment Using Graph Theory and Fuzzy Multiple Attribute Decision Making Methods - R. Venkata Rao  
2012-08-27

Decision Making in Manufacturing Environment Using Graph Theory and Fuzzy Multiple Attribute Decision Making Methods presents the concepts and details of applications of MADM methods. A range of methods are

covered including Analytic Hierarchy Process (AHP), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), Višekriterijumsko Kompromisno Rangiranje (VIKOR), Data Envelopment Analysis (DEA), Preference Ranking Method for Enrichment Evaluations (PROMETHEE), Elimination Et Choix Traduisant la Réalité (ELECTRE), Complex Proportional Assessment (COPRAS), Grey Relational Analysis (GRA), Utility Additive (UTA), and Ordered Weighted Averaging (OWA). The existing MADM methods are improved upon and three novel multiple attribute decision making methods for solving the decision making problems of the manufacturing environment are proposed. The concept of integrated weights is introduced in the proposed subjective and objective integrated weights (SOIW) method and the weighted Euclidean distance based approach (WEDBA) to consider both the decision maker's subjective preferences as well as the distribution of the attributes data of the decision matrix. These methods, which use fuzzy logic to convert the qualitative attributes into the quantitative attributes, are supported by various real-world application examples. Also, computer codes for AHP, TOPSIS, DEA, PROMETHEE, ELECTRE, COPRAS, and SOIW methods are included. This comprehensive coverage makes Decision Making in Manufacturing Environment Using Graph Theory and Fuzzy Multiple Attribute Decision Making Methods a key reference for the designers, manufacturing engineers, practitioners, managers, institutes involved in both design and manufacturing related projects. It is also an ideal study resource for applied research workers, academicians, and students in mechanical and industrial engineering.

Handbook of Research on Managerial Strategies for Achieving Optimal Performance in Industrial Processes - Alor-Hernández, Giner 2016-05-03  
Competitive advantage is a key factor to the success of any business in modern society. To achieve this goal, effective strategies for process improvement must be researched and implemented into an organization. The Handbook of Research on Managerial Strategies for Achieving Optimal Performance in Industrial Processes examines optimization techniques for improved business operations and procedures in the industrial sector. Highlighting management techniques, innovative

approaches, and technological tools, this publication is an essential reference source for professionals, researchers, consultants, upper-level students, and academicians interested in the advancement of knowledge in industrial communities.

*Human Factors in Global Software Engineering* - Rehman, Mobashar 2019-06-28

More software engineers are likely to work in a globally distributed environment, which brings benefits that include quick and better software development, less manpower retention, scalability, and less software development cost and sharing of knowledge from the global pool of employees. However, these work environments also introduce a physical separation between team members and project leaders, which can create problems in communication and ultimately lead to the failure of the project. *Human Factors in Global Software Engineering* is a collection of innovative research focusing on the challenges, issues, and importance of human factors in global software engineering organizations in order to help these organizations better manage their manpower and provide an appropriate culture and technology in order to make their software development projects successful. While highlighting topics including agile software, knowledge management, and human-computer interaction, this book is ideally designed for project managers, administrators, business professionals, researchers, practitioners, students, and academicians.

*Practical Applications of Intelligent Systems* - Yinglin Wang 2012-02-02  
Proceedings of the Sixth International Conference on Intelligent System and Knowledge Engineering presents selected papers from the conference ISKE 2011, held December 15-17 in Shanghai, China. This proceedings doesn't only examine original research and approaches in the broad areas of intelligent systems and knowledge engineering, but also present new methodologies and practices in intelligent computing paradigms. The book introduces the current scientific and technical advances in the fields of artificial intelligence, machine learning, pattern recognition, data mining, information retrieval, knowledge-based systems, knowledge representation and reasoning, multi-agent systems,

natural-language processing, etc. Furthermore, new computing methodologies are presented, including cloud computing, service computing and pervasive computing with traditional intelligent methods. The proceedings will be beneficial for both researchers and practitioners who want to utilize intelligent methods in their specific research fields. Dr. Yinglin Wang is a professor at the Department of Computer Science and Engineering, Shanghai Jiao Tong University, China; Dr. Tianrui Li is a professor at the School of Information Science and Technology, Southwest Jiaotong University, China.

**Techno-Societal 2018** - Prashant M. Pawar 2019-11-06

This book, divided in two volumes, originates from Techno-Societal 2018: the 2nd International Conference on Advanced Technologies for Societal Applications, Maharashtra, India, that brings together faculty members of various engineering colleges to solve Indian regional relevant problems under the guidance of eminent researchers from various reputed organizations. The focus is on technologies that help develop and improve society, in particular on issues such as the betterment of differently abled people, environment impact, livelihood, rural employment, agriculture, healthcare, energy, transport, sanitation, water, education. This conference aims to help innovators to share their best practices or products developed to solve specific local problems which in turn may help the other researchers to take inspiration to solve problems in their region. On the other hand, technologies proposed by expert researchers may find applications in different regions. This offers a multidisciplinary platform for researchers from a broad range of disciplines of Science, Engineering and Technology for reporting innovations at different levels.

*Fuzzy Multi-criteria Decision-Making Using Neutrosophic Sets* - Cengiz Kahraman 2018-11-03

This book offers a comprehensive guide to the use of neutrosophic sets in multiple criteria decision making problems. It shows how neutrosophic sets, which have been developed as an extension of fuzzy and paraconsistent logic, can help in dealing with certain types of uncertainty that classical methods could not cope with. The chapters, written by well-



known researchers, report on cutting-edge methodologies they have been developing and testing on a variety of engineering problems. The book is unique in its kind as it reports for the first time and in a comprehensive manner on the joint use of neutrosophic sets together with existing decision making methods to solve multi-criteria decision-making problems, as well as other engineering problems that are complex, hard to model and/or include incomplete and vague data. By providing new ideas, suggestions and directions for the solution of complex problems in engineering and decision making, it represents an excellent guide for researchers, lecturers and postgraduate students pursuing research on neutrosophic decision making, and more in general in the area of industrial and management engineering.

Intelligent Analytics With Advanced Multi-Industry Applications - Sun, Zhaohao 2021-01-08

Many fundamental technological and managerial issues surrounding the development and implementation of intelligent analytics within multi-industry applications remain unsolved. There are still questions surrounding the foundation of intelligent analytics, the elements, the big characteristics, and the effects on business, management, technology, and society. Research is devoted to answering these questions and understanding how intelligent analytics can improve healthcare, mobile commerce, web services, cloud services, blockchain, 5G development, digital transformation, and more. *Intelligent Analytics With Advanced Multi-Industry Applications* is a critical reference source that explores cutting-edge theories, technologies, and methodologies of intelligent analytics with multi-industry applications and emphasizes the integration of artificial intelligence, business intelligence, big data, and analytics from a perspective of computing, service, and management. This book also provides real-world applications of the proposed concept of intelligent analytics to e-SMACS (electronic, social, mobile, analytics, cloud, and service) commerce and services, healthcare, the internet of things, the sharing economy, cloud computing, blockchain, and Industry 4.0. This book is ideal for scientists, engineers, educators, university students, service and management professionals, policymakers, decision

makers, practitioners, stakeholders, researchers, and others who have an interest in how intelligent analytics are being implemented and utilized in diverse industries.

**Advances in Production and Industrial Engineering** - P. M. Pandey 2020-09-20

This book comprises the select proceedings of the International Conference on Emerging Trends in Mechanical and Industrial Engineering (ICETMIE) 2019. The conference covers current trends in thermal, design, industrial, production and other sub-disciplines of mechanical engineering. This volume focuses on different industrial and production engineering areas such as additive manufacturing, rapid prototyping, computer aided engineering, advanced manufacturing processes, manufacturing management and automation, sustainable manufacturing systems, metrology, manufacturing process optimization, operations research and decision-making models, production planning and inventory control, supply chain management, and quality engineering. The contents of this book will be useful for students, researchers and other professionals interested in industrial and production engineering.

*Theoretical and Practical Advancements for Fuzzy System Integration* - Li, Deng-Feng 2017-01-05

In real management situations, uncertainty is inherently present in decision making. As such, it is increasingly imperative to research and develop new theories and methods of fuzzy sets. *Theoretical and Practical Advancements for Fuzzy System Integration* is a pivotal reference source for the latest scholarly research on the importance of expressing and measuring fuzziness in order to develop effective and practical decision making models and methods. Featuring coverage on an expansive range of perspectives and topics, such as fuzzy logic control, intuitionistic fuzzy set theory, and defuzzification, this book is ideally designed for academics, professionals, and researchers seeking current research on theoretical frameworks and real-world applications in the area of fuzzy sets and systems.

Decision Support Systems III - Impact of Decision Support Systems for

Global Environments - Fátima Dargam 2014-08-30

This book contains extended and revised versions of a set of selected papers from two workshops organized by the Euro Working Group on Decision Support Systems (EWG-DSS), which were held in Thessaloniki, Greece, and Rome, Italy, in May and July 2013. From a total of 45 submissions, 15 papers were accepted for publication in this edition after being reviewed by at least three internationally known experts from the EWG-DSS Program Committee and external invited reviewers. The selected papers are representative of current research activities in the area of operational research and decision support systems, focusing on topics such as decision-making using social networks and Web resources; spatio-temporal Web-based decision making; group support systems; technical, legal, and social aspects of decision making; knowledge management and decision support systems; business intelligence and data warehousing; and negotiation support systems.

**Fuzzy Computing in Data Science** - Sachi Nandan Mohanty

2022-12-08

FUZZY COMPUTING IN DATA SCIENCE This book comprehensively explains how to use various fuzzy-based models to solve real-time industrial challenges. The book provides information about fundamental aspects of the field and explores the myriad applications of fuzzy logic techniques and methods. It presents basic conceptual considerations and case studies of applications of fuzzy computation. It covers the fundamental concepts and techniques for system modeling, information processing, intelligent system design, decision analysis, statistical analysis, pattern recognition, automated learning, system control, and identification. The book also discusses the combination of fuzzy computation techniques with other computational intelligence approaches such as neural and evolutionary computation. Audience Researchers and students in computer science, artificial intelligence, machine learning, big data analytics, and information and communication technology.

*Advanced Studies in Multi-Criteria Decision Making* - Sarah Ben Amor

2020-01-14

With contributions from some of the top academics and scientists in the field, *Advanced Studies in Multi-Criteria Decision Making* presents an updated view of the landscape of Decision Sciences, current research topics, the interaction with other sciences and fields, as well as the prospects and challenges at an international level. Given that Decision Sciences are recognized today as indispensable for confronting the major societal challenges in science and technology, this book would be of interest to decision-makers, managers, and researchers from academia, and industrial/services companies that would like a fresh insight into MCDM. Features Integrates a wide range of scientific fields with a general reader approach, including applied researchers from the social, business, enterprise sciences Suitable for academics and professionals Presents a broad coverage of MCDM tools either in industry or in services companies and systems Provides a fresh overview on MCDM studies promoted by prestigious R&D institutions

*Supply Chain Management Under Fuzziness* - Cengiz Kahraman

2014-02-15

*Supply Chain Management Under Fuzziness* presents recently developed fuzzy models and techniques for supply chain management. These include: fuzzy PROMETHEE, fuzzy AHP, fuzzy ANP, fuzzy VIKOR, fuzzy DEMATEL, fuzzy clustering, fuzzy linear programming, and fuzzy inference systems. The book covers both practical applications and new developments concerning these methods. This book offers an excellent resource for researchers and practitioners in supply chain management and logistics, and will provide them with new suggestions and directions for future research. Moreover, it will support graduate students in their university courses, such as specialized courses on supply chains and logistics, as well as related courses in the fields of industrial engineering, engineering management and business administration.

14th International Conference on Theory and Application of Fuzzy Systems and Soft Computing - ICAFS-2020 - Rafik A. Aliev 2021-01-04

This book presents the proceedings of the 14th International Conference on Applications of Fuzzy Systems, Soft Computing, and Artificial Intelligence Tools, ICAFS-2020, held in Budva, Montenegro, on August

27-28, 2020. It includes contributions from diverse areas of fuzzy systems, soft computing, AI tools such as uncertain computation, decision making under imperfect information, deep learning and others. The topics of the papers include theory and application of soft computing, neuro-fuzzy technology, intelligent control, deep learning-machine learning, fuzzy logic in data analytics, evolutionary computing, fuzzy logic and artificial intelligence in engineering, social sciences, business, economics, material sciences and others.  
*Cooperative Design, Visualization, and Engineering* - Yuhua Luo

2006-09-21

This book constitutes the refereed proceedings of the Third International Conference on Cooperative Design, Visualization, and Engineering, CDVE 2006, held in Mallorca, Spain in September 2006. The book presents 40 revised full papers, carefully reviewed and selected from numerous submissions. The papers cover all current issues in cooperative design, visualization, and engineering, ranging from theoretical and methodological topics to various systems and frameworks to applications in a variety of fields.