Fuzzy Geometric Programming

#Fuzzy Geometric Programming #Fuzzy Optimization #Geometric Programming #Uncertainty Optimization #Nonlinear Programming

Fuzzy Geometric Programming is an advanced mathematical optimization technique that integrates the principles of fuzzy set theory with geometric programming. This method is specifically designed to tackle complex decision-making problems where parameters or objectives are imprecise or uncertain, providing a robust framework for solving nonlinear optimization challenges in real-world applications.

Fuzzy Geometric Programming

Fuzzy geometric programming was originated by the author in the Proceed ing of the second IFSA conferences, 1987(Tokyo) 14 years ago. Later, the paper was invited for formal publication in the International Journal of Fuzzy Sets and Systems. From then on, more and more papers have been written by scholars all over the world who have been interested in its research. So this programming method has been acknowledged by experts and has gradually formed a new branch of fuzzy mathematics. Inspired by Zadeh's fuzzy sets theory, fuzzy geometric programming emerges from the combination of fuzzy sets theory with geometric programming, where models are built in the fuzzy posynomial and the reverse geometric program ming. The present book is intended to discuss fuzziness of objective function and constraint conditions, a variety of fuzzy numbers in coefficients and vari ables and problems about multi-objective fuzzy geometric programming. It establishes and rounds out an entire theory system, showing that there exist conditions of fuzzy optimal or most satisfactory solutions in fuzzy geometric ptogramming, and it develops some effective algorithms. In order to introduce this new branch, the book aims at the exposition of three points: encompassing ideas and conception, theory and methods, and diffusion and application. It lays more emphasis on the second point than the first one, and less on the third. Besides, it introduces some knowledge of classical geometric programming and of fuzzy sets theory and application examples of fuzzy geometric programming in electric power systems as weil.

Fuzzy Geometric Programming Techniques and Applications

This book develops the concepts of various unique optimization techniques in the crisp and fuzzy environment. It provides an extensive overview of geometric programming methods within a unifying framework, and presents an in-depth discussion of the modified geometric programming problem, fuzzy geometric programming, as well as new insights into goal geometric programming. With numerous examples and exercises together with detailed solutions for several problems, the book also addresses fuzzy multi-objective geometric programming techniques. Geometric programming, which falls into the general class of signomial problems, has applications across disciplines, from engineering to

economics, and is extremely useful in applications of a variety of optimization problems. Organized into thirteen chapters, this book is a valuable resource for graduate and advanced undergraduate students and researchers in applied mathematics and engineering.

Fuzzy Relational Mathematical Programming

This book summarizes years of research in the field of fuzzy relational programming, with a special emphasis on geometric models. It discusses the state-of-the-art in fuzzy relational geometric problems, together with key open issues that must be resolved to achieve a more efficient application of this method. Though chiefly based on research conducted by the authors, who were the first to introduce fuzzy geometric problems, it also covers important findings obtained in the field of linear and non-linear programming. Thanks to its balance of basic and advanced concepts, and its wealth of practical examples, the book offers a valuable guide for both newcomers and experienced researcher in the fields of soft computing and mathematical optimization.

Fuzzy Information and Engineering and Decision

This book introduces applications of mathematics and fuzzy mathematics in decision science, fuzzy geometric programming and fuzzy optimization as well as operations research and management, based on 44 research papers presented at three successful conferences: (1) The International Conference on Mathematics and Decision Science (ICMDS), September 12–15, 2016, Guangzhou University, Guangzhou, China (www.icodm2020.com). (2) Academic Conference on 30th Anniversary of Fuzzy Geometric Programming Advanced by Professor Cao Bingyuan and his 40 education years (ACFG-PACE), July 30 to August 1, 2016, Guangzhou University, Guangzhou, China. (3) The third annual meeting of Guangdong Operational Research Society (TAMGORS), October 22–23, 2016, Foshan University, Guangdong, China. The book is a valuable resource for students, graduates, teachers and other professionals in the field of applied mathematics, artificial intelligence and computers, fuzzy systems and dec ision-making, as well as operations research and management.

The Basic Notions for (over, off, under) Neutrosophic Geometric Programming Problems

Neutrosophic (over, off, under) set and logic were defined for the first time in 1995 by Florentin Smarandache, and presented during 1995-2018 to various national and international conferences and seminars. The (over, off, under) neutrosophic geometric programming was put forward by Huda et al. in (2016) [8], in an attempt to define a new type of geometric programming using (over, off, under) neutrosophic less than or equal to.

Fuzzy Multi-Criteria Decision Making

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.

Fuzzy Optimization

Achieving the desired level of satisfaction for a decision-maker in any decision-making scenario is considered a challenging endeavor because minor modifications in the process might lead to incorrect findings and inaccurate decisions. In order to maximize the decision-maker’s satisfaction, this paper proposes a Single-valued Neutrosophic Geometric Programming model based on pentagonal fuzzy numbers. The decision-maker is typically assumed to be certain of the parameters, but in reality, this is not the case, hence the parameters are presented as neutrosophic fuzzy values. The decision-maker, with this strategy, is able to achieve varying levels of satisfaction and dissatisfaction for each constraint and even complete satisfaction for certain constraints. Here the decision maker aims to achieve the maximum level of satisfaction while maintaining the level of hesitation and minimizing dissatisfaction in order to retain an optimum solution. Furthermore, transforming the objective function into a constraint

adds one more layer to the N-dimensional multi-parametrizes ±,² and ³.The advantages of this multi-parametrized proposed method over the existing ones are proven using numerical examples.

A Single-valued Pentagonal Neutrosophic Geometric Programming Approach to Optimize Decision Maker's Satisfaction Level

In this paper, we introduce the concept of neutrosophic less than or equal to. The neutrosophy considers every idea together with its opposite or negation and with their spectrum of neutralities in between them (i.e. notions or ideas supporting neither nor). T

The Concept of Neutrosophic Less Than or Equal To: A New Insight in Unconstrained Geometric Programming

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 Goal Geometric Programming Problem based on Geometric Mean Method and its Application

In this article, we present deterministic single objective economic order quantity model with limited storage capacity in neutrosophic environment. We consider variable limit production cost and time dependent holding cost into account. Here we minimize total average cost of proposed model by applying neutrosophic geometric programming, which is obtained by extending existing fuzzy and intuitionistic fuzzy geometric programming for solving resultant non-linear optimization model. Next we consider numerical application to show that optimal solution obtained by neutrosophic geometric programming is more desirable than that of crisp, fuzzy and intuitionistic fuzzy geometric programming. Also we perform sensitivity analysis of parameters and present key managerial insights. Finally we draw the conclusions.

Optimization of EOQ Model with Limited Storage Capacity by Neutrosophic Geometric Programming

This book studies optimized models with fuzzy quantities. It can be used by undergraduates in higher education, master graduates and doctor graduates. It also serves as a reference for researchers, particularly for those in the field of soft science.

Optimal Models and Methods with Fuzzy Quantities

In this paper, an inventory model is developed without shortages where the production cost is inversely related to the set up cost and production quantity.

An Inventory Model under Space Constraint in Neutrosophic Environment: A Neutrosophic Geometric Programming Approach

"Fuzzy Engineering and Operations Research" is the edited outcome of the 5th International Conference on Fuzzy Information and Engineering (ICFIE2011) held during Oct. 15-17, 2011 in Chengdu, China and by the 1st academic conference in establishment of Guangdong Province Operations Research Society (GDORSC) held on Oct. 20, 2011 in Guangzhou, China. The 5th ICFIE2011, built on the success of previous conferences, and the GDORC, first held, are major Symposiums, respectively, for scientists, engineers practitioners and Operation Research (OR) researchers presenting their updated results, developments and applications in all areas of fuzzy information and engineering and OR. It aims to strengthen relations between industry research laboratories and universities, and to create a primary symposium for world scientists in Fuzziology and OR fields. The book contains 62 papers and is divided into five main parts: "Fuzzy Optimization, Logic and Information", "The mathematical Theory of Fuzzy Systems", "Fuzzy Engineering Applications and Soft Computing Methods", "OR and Fuzziology" and "Guess and Review".

Fuzzy Engineering and Operations Research

This book includes 70 selected papers from the Ninth International Conference on Fuzzy Information and Engineering (ICFIE) Satellite, which was held on December 26–30, 2018; and from the 9th International Conference on Fuzzy Information and Engineering (ICFIAE), which was held on February 13–15, 2019. The two conferences presented the latest research in the areas of fuzzy information and engineering, operational research and management, and their applications.

Fuzzy Information and Engineering-2019

This basic book has been used at the middle schools in Shanghai, China for more than 10 years. The book presents carefully-selected contents in order to achieve the roles of enlightenment and popularization. It mainly includes: Chapter 1: Human Brains, Computers and Fuzzy Mathematics; Chapter 2: Matrix, Fuzzy Relations and Fuzzy Matrix; Chapter 3: Fuzzy Control; Chapter 4: Fuzzy Statistics and Fuzzy Probability and Chapter 5: Fuzzy Linear Programming. It includes at the end of each chapter concise, interesting and profound reading and thinking materials, and a certain amount of exercises so as to make it an informative and interesting textbook. This book can be used not only as a textbook in senior middle schools, and in vocational colleges, but also as a primer for individually learning fuzzy mathematics.

Fuzzy Sets Theory Preliminary

The book contains ten chapters as follows, Prepare Knowledge, Regression and Self-regression Models with Fuzzy Coefficients; Regression and Self-regression Models with Fuzzy Variables, Fuzzy Input/output Model, Fuzzy Cluster Analysis and Fuzzy Recognition, Fuzzy Linear Programming, Fuzzy Geometric Programming, Fuzzy Relative Equation and Its Optimizing, Interval and Fuzzy Differential Equations and Interval and Fuzzy Functional and Their Variation. It can not only be used as teaching materials or reference books for under-graduates in higher education, master graduates and doctor graduates in the courses of applied mathematics, computer science, artificial intelligence, fuzzy information process and automation, operations research, system science and engineering, and the like, but also serves as a reference book for researchers in these fields, particularly, for researchers in soft science.

Optimal Models and Methods with Fuzzy Quantities

This book presents appealing contributions on computational intelligence and mathematics, connecting both areas and offering solutions to a number of interesting, real-world problems. Such problems often require novel solutions, as complexity exceeds the tractable size. At the same time, the need for good-quality realistic solutions results in models and algorithms with a good balance of resource intensiveness and model quality (accuracy). Many areas of knowledge call for hybrid solutions that combine traditional mathematical techniques and computational intelligence based on subsymbolic knowledge representation. Important research topics are focused on developing the interaction between computational intelligence and mathematics, in order to address various challenges of the current technological age. Written by influential, leading researchers, this book discusses the latest trends in hybridising mathematics and computational intelligence.

Trends in Mathematics and Computational Intelligence

The Second International Conference on Fuzzy Information and Engineering (ICFIE2007) is a major symposium for scientists, engineers and practitioners in China as well as the world to present their latest results, ideas, developments and applications in all areas of fuzzy information and knowledge engineering. It aims to strengthen relations between industry research laboratories and universities, and to create a primary symposium for world scientists.

Fuzzy Information and Engineering

This book comprises a selection of papers from IFSA 2007 on new methods and theories that contribute to the foundations of fuzzy logic and soft computing. Coverage includes the application of fuzzy logic and soft computing in flexible querying, philosophical and human-scientific aspects of soft computing, search engine and information processing and retrieval, as well as intelligent agents and knowledge ant colony.

Foundations of Fuzzy Logic and Soft Computing

Neutrosophic (over, off, under) set and logic were defined for the first time in 1995 by Florentin Smarandache, and presented during 1995-2018 to various national and international conferences and seminars. The (over, off, under) neutrosophic geometric programming was put forward by Huda et al. in (2016), in an attempt to define a new type of geometric programming using (over, off, under) neutrosophic less than or equal to. This paper completes the basic notions of (over, off, under) neutrosophic geometric programming illustrating its convexity condition, and its decomposition theorems. The definitions of (±, ², ∛) and strong (±, ², ∛) are introduced, and some of their important properties are proved.

The Basic Notions for (over, off, under) Neutrosophic Geometric Programming Problems

Fuzzy Information & Engineering and Operations Research & Management is the monograph from submissions by the 6th International Conference on Fuzzy Information and Engineering (ICFIE2012, Iran) and by the 6th academic conference from Fuzzy Information Engineering Branch of Operation Research Society of China (FIEBORSC2012, Shenzhen,China). It is published by Advances in Intelligent and Soft Computing (AISC). We have received more than 300 submissions. Each paper of it has undergone a rigorous review process. Only high-quality papers are included in it containing papers as follows: I Programming and Optimization. II Lattice and Measures. III Algebras and Equation. IV Forecasting, Clustering and Recognition. V Systems and Algorithm. VI Graph and Network. VII Others.

Fuzzy Information & Engineering and Operations Research & Management

This is the first book focusing exclusively on fuzzy dual numbers. In addition to offering a concise guide to their properties, operations and applications, it discusses some of their advantages with regard to classical fuzzy numbers, and describes the most important operations together with a set of interesting applications in e.g. optimization, decision-making and system design. The book provides students, researchers and professionals the necessary theoretical background to apply this particular subset of fuzzy numbers to decision-making problems involving uncertainty. Further, it shows how to solve selected engineering and management problems and includes detailed numerical examples.

Fuzzy Dual Numbers

Constrained optimization problems: basic concepts; Posynomial geometric programming; Practical aspect of G.P. problem-solving; Signomial geometric programming; Tactics for handling posynomial programs with loose constraints and degreess of difficulty; Extensions of geometric programming to non-standard forms; Reversed constraints and transformations to posynomial programs; Solutions of signomial programs through condensation; The underlying primal structure and its use in computation; Selected applications of geometric programming;

Applied Geometric Programming

This book includes results of the seventh International Conference on Fuzzy Information and Engineering (ICFIE'2014) and the 1st International Conference of Operations Research and Management (ICORM'2014) on November 7-11, 2014 in ZhuHai, China. The book, contains 35 selected high-quality papers, and is divided into five main parts: Part I focuses on ``Fuzzy Systems and Its Applications\

Fuzzy Systems & Operations Research and Management

In the real world, uncertainty or vagueness is prevalent in engineering and management computations. Commonly, such uncertainties are included in the design process by introducing simplified hypothesis and safety or design factors.

Neutrosophic Optimization and its Application on Structural Designs

“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.

Neutrosophic Sets and Systems: An International Book Series in Information Science and Engineering, vol. 21 / 2018

This book comprises a selection of papers from IFSA 2007 on new methods and theories that contribute to the foundations of fuzzy logic and soft computing. Coverage includes the application of fuzzy logic and soft computing in flexible querying, philosophical and human-scientific aspects of soft computing, search engine and information processing and retrieval, as well as intelligent agents and knowledge ant colony.

Foundations of Fuzzy Logic and Soft Computing

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.

Decision Making with Spherical Fuzzy Sets

Recently Geometric Programming has been applied to study a variety of problems in the analysis and design of communication systems from information theory and queuing theory to signal processing and network protocols. Geometric Programming for Communication Systems begins its comprehensive treatment of the subject by providing an in-depth tutorial on the theory, algorithms, and modeling methods of Geometric Programming. It then gives a systematic survey of the applications of Geometric Programming to the study of communication systems. It collects in one place various published results in this area, which are currently scattered in several books and many research papers, as well as to date unpublished results. Geometric Programming for Communication Systems is intended for researchers and students who wish to have a comprehensive starting point for understanding the theory and applications of geometric programming in communication systems.

Geometric Programming for Communication Systems

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 ninth in the series of FLINS conferences cover state-of-the-art research, development, and technology for computational intelligence systems ? both from foundations and applications points-of-view.

Computational Intelligence

“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. Neutrosophy is a new branch of philosophy that studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra. This theory considers every notion or idea together with its opposite or negation and with their spectrum of neutralities in between them (i.e. notions or ideas supporting neither nor). The and ideas together are referred to as . Neutrosophy is a generalization of Hegel's dialectics (the last one is based on and only). According to this theory every idea tends to be neutralized and balanced by and ideas - as a state of equilibrium. In a classical way , , are disjoint two by two. But, since in many cases the borders between notions are vague, imprecise, Sorites, it is possible that , , (and of course) have common parts two by two, or even all three of them as well. Neutrosophic Set and Neutrosophic Logic are generalizations of the fuzzy set and respectively fuzzy logic (especially of intuitionistic fuzzy set and respectively intuitionistic fuzzy logic).

Neutrosophic Sets and Systems, vol. 51/2022

This twelfth volume of Collected Papers includes 86 papers comprising 976 pages on Neutrosophics Theory and Applications, published between 2013-2021 in the international journal and book series “Neutrosophic Sets and Systems” by the author alone or in collaboration with the following 112 co-authors (alphabetically ordered) from 21 countries: Abdel Nasser H. Zaied, Muhammad Akram, Bobin Albert, S. A. Alblowi, S. Anitha, Guennoun Asmae, Assia Bakali, Ayman M. Manie, Abdul Sami Awan, Azeddine Elhassouny, Erick González-Caballero, D. Dafik, Mithun Datta, Arindam Dey, Mamouni Dhar, Christopher Dyer, Nur Ain Ebas, Mohamed Eisa, Ahmed K. Essa, Faruk Karaaslan, João Alcione

Sganderla Figueiredo, Jorge Fernando Goyes García, N. Ramila Gandhi, Sudipta Gayen, Gustavo Alvarez Gómez, Sharon Dinarza Álvarez Gómez, Haitham A. El-Ghareeb, Hamiden Abd El-Wahed Khalifa, Masooma Raza Hashmi, Ibrahim M. Hezam, German Acurio Hidalgo, Le Hoang Son, R. Jahir Hussain, S. Satham Hussain, Ali Hussein Mahmood Al-Obaidi, Hays Hatem Imran, Nabeela Ishfaq, Saeid Jafari, R. Jansi, V. Jeyanthi, M. Jeyaraman, Sripati Jha, Jun Ye, W.B. Vasantha Kandasamy, Abdullah Karg1n, J. Kavikumar, Kawther Fawzi Hamza Alhasan, Huda E. Khalid, Neha Andalleb Khalid, Mohsin Khalid, Madad Khan, D. Koley, Valeri Kroumov, Manoranjan Kumar Singh, Pavan Kumar, Prem Kumar Singh, Ranjan Kumar, Malayalan Lathamaheswari, A.N. Mangayarkkarasi, Carlos Rosero Martínez, Marvelio Alfaro Matos, Mai Mohamed, Nivetha Martin, Mohamed Abdel-Basset, Mohamed Talea, K. Mohana, Muhammad Irfan Ahamad, Rana Muhammad Zulqarnain, Muhammad Riaz, Muhammad Saeed, Muhammad Saqlain, Muhammad Shabir, Muhammad Zeeshan, Anjan Mukherjee, Mumtaz Ali, Deivanayagampillai Nagarajan, Iqra Nawaz, Munazza Naz, Roan Thi Ngan, Necati Olgun, Rodolfo González Ortega, P. Pandiammal, I. Pradeepa, R. Princy, Marcos David Oviedo Rodríguez, Jesús Estupiñán Ricardo, A. Rohini, Sabu Sebastian, Abhijit Saha, Mehmet ahin, Said Broumi, Saima Anis, A.A. Salama, Ganeshsree Selvachandran, Seyed Ahmad Edalatpanah, Sajana Shaik, Soufiane Idbrahim, S. Sowndrarajan, Mohamed Talea, Ruipu Tan, Chalapathi Tekuri, Selçuk Topal, S. P. Tiwari, Vakkas Uluçay, Maikel Leyva Vázquez, Chinnadurai Veerappan, M. Venkatachalam, Luige Vl d reanu, ^tefan Vl ducescu, Young Bae Jun, Wadei F. Al-Omeri, Xiao Long Xin.

Geometric Programming

“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.

Collected Papers. Volume XII

This eighth volume of Collected Papers includes 75 papers comprising 973 pages on (theoretic and applied) neutrosophics, written between 2010-2022 by the author alone or in collaboration with the following 102 co-authors (alphabetically ordered) from 24 countries: Mohamed Abdel-Basset, Abdu-allah Gamal, Firoz Ahmad, Ahmad Yusuf Adhami, Ahmed B. Al-Nafee, Ali Hassan, Mumtaz Ali, Akbar Rezaei, Assia Bakali, Ayoub Bahnasse, Azeddine Elhassouny, Durga Banerjee, Romualdas Bausys, Mircea Bo coianu, Traian Alexandru Buda, Bui Cong Cuong, Emilia Calefariu, Ahmet Çevik, Chang Su Kim, Victor Christianto, Dae Wan Kim, Daud Ahmad, Arindam Dey, Partha Pratim Dey, Mamouni Dhar, H. A. Elagamy, Ahmed K. Essa, Sudipta Gayen, Bibhas C. Giri, Daniela Gîfu, Noel Batista Hernández, Hojjatollah Farahani, Huda E. Khalid, Irfan Deli, Saeid Jafari, Tèmítópé Gbóláhàn Jaíyéolá, Sripati Jha, Sudan Jha, Ilanthenral Kandasamy, W.B. Vasantha Kandasamy, Darjan Karabaševi , M. Karthika, Kawther F. Alhasan, Giruta Kazakeviciute-Januskeviciene, Qaisar Khan, Kishore Kumar P K, Prem Kumar Singh, Ranjan Kumar, Maikel Leyva-Vázquez, Mahmoud Ismail, Tahir Mahmood, Hafsa Masood Malik, Mohammad Abobala, Mai Mohamed, Gunasekaran Manogaran, Seema Mehra, Kalyan Mondal, Mohamed Talea, Mullai Murugappan, Muhammad Akram, Muhammad Aslam Malik, Muhammad Khalid Mahmood, Nivetha Martin, Durga Nagarajan, Nguyen Van Dinh, Nguyen Xuan Thao, Lewis Nkenyereya, Jagan M. Obbineni, M. Parimala, S. K. Patro, Peide Liu, Pham Hong Phong, Surapati Pramanik, Gyanendra Prasad Joshi, Quek Shio Gai, R. Radha, A.A. Salama, S. Satham Hussain, Mehmet ahin, Said Broumi, Ganeshsree Selvachandran, Selvaraj Ganesan, Shahbaz Ali, Shouzhen Zeng, Manjeet Singh, A. Stanis Arul Mary, Dragiša Stanujki , Yusuf uba , Rui-Pu Tan, Mirela Teodorescu, Selçuk Topal, Zenonas Turskis, Vakkas Uluçay, Norberto Valcárcel Izquierdo, V. Venkateswara Rao, Volkan Duran, Ying Li, Young Bae Jun, Wadei F. Al-Omeri, Jian-qiang Wang, Lihshing Leigh Wang, Edmundas Kazimieras Zavadskas.

Neutrosophic Sets and Systems: An International Book Series in Information Science and Engineering, vol. 22 / 2018

Most real-life problems involve making decisions to optimally achieve a number of criteria while satisfying some hard or soft constraints. In this book several methods for solving such problems are presented by the leading experts in the area. The book also contains a number of very interesting application papers which demonstrate theoretical modelling, analysing and solution of real-life problems.

Collected Papers. Volume VIII

This book treats all kind of data in neutrosophic environment, with real-life applications, approaching topics as linear programming problem, linear fractional programming, integer programming, triangular neutrosophic numbers, single valued triangular neutrosophic number, neutrosophic optimization, goal programming problem, Taylor series, multi-objective programming problem, neutrosophic geometric programming, neutrosophic topology, neutrosophic open set, neutrosophic semi-open set, neutrosophic continuous function, cylindrical skin plate design, neutrosophic MULTIMOORA, alternative solutions, decision matrix, ratio system, reference point method, full multiplicative form, ordinal dominance, standard error, market research, and so on. The selected papers deal with the alleviation of world changes, including changing demographics, accelerating globalization, rising environmental concerns, evolving societal relationships, growing ethical and governance concern, expanding the impact of technology; some of these changes have impacted negatively the economic growth of private firms, governments, communities, and the whole society.

Multi-Objective Programming and Goal Programming

The following papers have been published: Interval Valued Neutrosophic Graphs; Neutrosophic Crisp Probability Theory & Decision Making Process; On Strong Interval Valued Neutrosophic Graphs; The Concept of Neutrosophic Less than or Equal: A New Insight in Unconstrained Geometric Programming; Multi-Criteria Decision Making Method for n-wise Criteria Comparisons and Inconsistent Problems.

Neutrosophic Operational Research, Vol. I

Industrial engineering is a branch of engineering dealing with the optimization of complex processes or systems. It is concerned with the development, improvement, implementation and evaluation of production and service systems. Computational Intelligence Systems find a wide application area in industrial engineering: neural networks in forecasting, fuzzy sets in capital budgeting, ant colony optimization in scheduling, Simulated Annealing in optimization, etc. This book will include most of the application areas of industrial engineering through these computational intelligence systems. In the literature, there is no book including many real and practical applications of Computational Intelligence Systems from the point of view of Industrial Engineering. Every chapter will include explanatory and didactic applications. It is aimed that the book will be a main source for MSc and PhD students.

Critical Review, Vol. 12, 2016

Computational Intelligence Systems in Industrial Engineering