Generalized N Fuzzy Ideals In Semigroups

This book is the proceedings of the 5th Annual Conference on Fuzzy Information and Engineering (ACFIE2010) from Sep. 23-27, 2010 in Huludao, China. This book contains 89 papers, divided into five main parts: In Section I, we have 15 papers on “the mathematical theory of fuzzy systems”. In Section II, we have 15 papers on “fuzzy logic, systems and control”. In Section III, we have 24 papers on “fuzzy optimization and decision-making”. In Section IV, we have 17 papers on “fuzzy information, identification and clustering”. In Section V, we have 18 papers on “fuzzy engineering application and soft computing method”.

In the fuzzy set which is introduced by Zadeh, the membership degree is expressed by only one function so called the truth function. As a generalization of fuzzy set, intuitionistic fuzzy set is introduced by Atanassove by using membership function and nonmembership function.

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The purpose of this paper is to introduce the notion of fuzzy neutrosophic soft ideal in fuzzy neutrosophic soft set theory. The concept of fuzzy neutrosophic soft local function is also introduced. These concepts are discussed with a view to find new fuzzy neutrosophic soft topologies from the original one. The basic structure, especially a basis for such generated fuzzy neutrosophic soft topologies also studied here. Finally, the notion of compatibility of fuzzy neutrosophic soft ideals with fuzzy neutrosophic soft topologies is introduced and some equivalent conditions concerning this topic are established here.

Soft set theory is a general mathematical tool for dealing with uncertain, fuzzy, not clearly defined objects. In this paper we introduced soft neutrosophic groupoid and their generalization with the discuissionf of some of their characteristics

“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.

Proceedings of the International Conference on Cybernetics and Informatics (ICCI 2012) covers the hybridization in control, computer, information, communications and applications. ICCI 2012 held on September 21-23, 2012, in Chongqing, China, is organized by Chongqing Normal University, Chongqing University, Nanyang Technological University, Shanghai Jiao Tong University, Hunan Institute of Engineering, Beijing University, and sponsored by National Natural Science Foundation of China (NSFC). This two volume publication includes selected papers from the ICCI 2012. Covering the latest research advances in the area of computer, informatics, cybernetics and applications, which mainly includes the computer, information, control, communications technologies and applications.

Lotfi Zadeh introduced the notion of a fuzzy subset of a set in 1965. Ris seminal paper has opened up new insights and applications in a wide range of scientific fields. Azriel Rosenfeld used the notion of a fuzzy subset to put forth cornerstone papers in several areas of mathematics, among other discplines. Rosenfeld is the father of fuzzy abstract algebra. Kuroki is re sponsible for much of fuzzy ideal theory of semigroups. Others who worked on fuzzy semigroup theory, such as Xie, are mentioned in the bibliogra phy. The purpose of this book is to present an up to date account of fuzzy subsemigroups and fuzzy ideals of a semigroup. We concentrate mainly on theoretical aspects, but we do include applications. The applications are in the areas of fuzzy coding theory, fuzzy finite state machines, and fuzzy languages. An extensive account of fuzzy automata and fuzzy languages is given in [100]. Consequently, we only consider results in these areas that have not appeared in [100] and that pertain to semigroups. In Chapter 1, we review some basic results on fuzzy subsets, semigroups, codes, finite state machines, and languages. The purpose of this chapter is to present basic results that are needed in the remainder of the book. In Chapter 2, we introduce certain fuzzy ideals of a semigroup, namely, fuzzy two-sided ideals, fuzzy bi-ideals, fuzzy interior ideals, fuzzy quasi ideals, and fuzzy generalized bi-ideals.

Issues in Artificial Intelligence, Robotics and Machine Learning: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Expert Systems. The editors have built Issues in Artificial Intelligence, Robotics and Machine Learning: 2013 Edition on the vast information databases of ScholarlyNews.™ You

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This volume contains 45 papers, written by the author alone or in collaboration with the following co-authors: Mumtaz Ali, Said Broumi, Sukanto Bhattacharya, Mamoni Dhar, Irfan Deli, Mincong Deng, Alexandru Gal, Valeri Kroumov, Pabitra Kumar Maji, Maikel Leyva-Vazquez, Feng Liu, Pinaki Majumdar, Munazza Naz, Karina Perez-Teruel, R?dvan Sahin, A. A. Salama, Muhammad Shabir, Rajshekhar Sunderraman, Luige Vladareanu, Magdalena Vladila, Stefan Vladutescu, Haibin Wang, Hongnian Yu, Yan-Qing Zhang.

Successful development of effective computational systems is a challenge for IT developers across sectors due to uncertainty issues that are inherently present within computational problems. Soft computing proposes one such solution to the problem of uncertainty through the application of generalized set structures including fuzzy sets, rough sets, and multisets. The Handbook of Research on Generalized and Hybrid Set Structures and Applications for Soft Computing presents double blind peer-reviewed and original research on soft computing applications for solving problems of uncertainty within the computing environment. Emphasizing essential concepts on generalized and hybrid set structures that can be applied across industries for complex problem solving, this timely resource is essential to engineers across disciplines, researchers, computer scientists, and graduate-level students.

This proceedings book presents edited results of the eighth International Conference on Fuzzy Information and Engineering (ICFIE'2015) and on Oriental Thinking and Fuzzy Logic, in August 17-20, 2015, in Dalian, China. The book contains 65 high-quality papers and is divided into six main parts: "Fuzzy Information Processing", "Fuzzy Engineering", "Internet and Big Data Applications", "Factor Space and Factorial Neural Networks", "Information Granulation and Granular Computing" as well as "Extenics and Innovation Methods".

The purpose of this book is to present an up to date account of fuzzy ideals of a semiring. The book concentrates on theoretical aspects and consists of eleven chapters including three invited chapters. Among the invited chapters, two are devoted to applications of Semirings to automata theory, and one deals with some generalizations of Semirings. This volume may serve as a useful hand book for graduate students and researchers in the areas of Mathematics and Theoretical Computer Science.

"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. Some articles in this issue: Parameter Reduction of Neutrosophic Soft Sets and Their Applications, Geometric Programming (NGP) Problems Subject to (?,.) Operator; the Minimum Solution, Ngpr Homeomorphism in Neutrosophic Topological Spaces, Generalized Neutrosophic Separation Axioms in Neutrosophic Soft Topological Spaces.

This book is a printed edition of the Special Issue "Fuzzy Mathematics" that was published in Mathematics

The aim of this paper is to introduce various types of r-single-valued neutrosophic open sets based on the single-valued neutrosophic ideals in Sostak Sense. Different mappings of single-valued continuity and ideal continuity based on the r-single-valued neutrosophic ideal openness are defined and many implications between them are investigated with counterexamples illustrated.

This book discusses recent developments and the latest research in algebra and related topics. The book allows aspiring researchers to update their understanding of prime rings, generalized derivations, generalized semiderivations, regular semigroups, completely simple semigroups, module hulls, injective hulls, Baer modules, extending modules, local cohomology modules, orthogonal lattices, Banach algebras, multilinear polynomials, fuzzy ideals, Laurent power series, and Hilbert functions. All the contributing authors are leading international academicians and researchers in their respective fields. Most of the papers were presented at the international conference on Algebra and its Applications (ICAA-2014), held at Aligarh Muslim University, India, from December 15–17, 2014. The book also includes papers from mathematicians who couldn't attend the conference. The conference has emerged as a powerful forum offering researchers a venue to meet and discuss advances in algebra and its applications, inspiring further research directions.

This book explores certain structures of fuzzy Lie algebras, fuzzy Lie superalgebras and fuzzy n-Lie algebras. In addition, it applies various concepts to Lie algebras and Lie superalgebras, including type-1 fuzzy sets, interval-valued fuzzy sets, intuitionistic fuzzy sets, interval-valued intuitionistic fuzzy sets, vague sets and bipolar fuzzy sets. The book offers a valuable resource for students and researchers in mathematics, especially those interested in fuzzy Lie algebraic structures, as well as for other scientists. Divided into 10 chapters, the book begins with a concise review of fuzzy set theory, Lie algebras and Lie superalgebras. In turn, Chap. 2 discusses several properties of concepts like interval-valued fuzzy Lie ideals, characterizations of Noetherian Lie algebras, quotient Lie algebras via interval-valued fuzzy Lie ideals, and interval-valued fuzzy Lie superalgebras. Chaps. 3 and 4 focus on various concepts of fuzzy Lie algebras, while Chap. 5 presents the concept of fuzzy Lie ideals of a Lie algebra over a fuzzy field. Chapter 6 is devoted to the properties of bipolar fuzzy Lie ideals, bipolar fuzzy Lie subsuperalgebras, bipolar fuzzy bracket product, solvable bipolar fuzzy Lie ideals and nilpotent bipolar fuzzy Lie ideals. Chap. 7 deals with the properties of m-polar fuzzy Lie subalgebras and m-polar fuzzy Lie ideals, while Chap. 8 addresses concepts like soft intersection Lie algebras and fuzzy

soft Lie algebras. Chap. 9 deals with rough fuzzy Lie subalgebras and rough fuzzy Lie ideals, and lastly, Chap. 10 investigates certain properties of fuzzy subalgebras and ideals of n-ary Lie algebras.

Recent developments in various algebraic structures and the applications of those in different areas play an important role in Science and Technology. One of the best tools to study the non-linear algebraic systems is the theory of Near-rings.The forward note by G

Games are considered to be the most attractive and healthy event between nations and peoples. Soft expert sets are helpful for capturing uncertain and vague information. By contrast, neutrosophic set is a tri-component logic set, thus it can deal with uncertain, indeterminate, and incompatible information where the indeterminacy is quantified explicitly and truth membership, indeterminacy membership, and falsity membership independent of each other.

Neutrosophy is a recent section of philosophy. It was initiated in 1980 by Smarandache. It was presented as the study of origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra. In this paper, we introduce the notion of single-valued neutrosophic ideals sets in Šostak's sense, which is considered as a generalization of fuzzy ideals in Šostak's sense and intuitionistic fuzzy ideals.

The concept of a commutative generalized neutrosophic ideal in a BCK-algebra is proposed, and related properties are proved. Characterizations of a commutative generalized neutrosophic ideal are considered. Also, some equivalence relations on the family of all commutative generalized neutrosophic ideals in BCK-algebras are introduced, and some properties are investigated.

This book contains 37 papers by 73 renowned experts from 13 countries around the world, on following topics: neutrosophic set; neutrosophic rings; neutrosophic quadruple rings; idempotents; neutrosophic extended triplet group; hypergroup; semihypergroup; neutrosophic extended triplet group; neutrosophic extended triplet semihypergroup and hypergroup; neutrosophic offset; uninorm; neutrosophic offuninorm and offnorm; neutrosophic offconorm; implicator; prospector; n-person cooperative game; ordinary single-valued neutrosophic (co)topology; ordinary single-valued neutrosophic subspace; ?-level; ordinary single-valued neutrosophic neighborhood system; ordinary single-valued neutrosophic base and subbase; fuzzy numbers; neutrosophic numbers; neutrosophic symmetric scenarios; performance indicators; financial assets; neutrosophic extended triplet group; neutrosophic quadruple numbers; refined neutrosophic numbers; refined neutrosophic quadruple numbers; multigranulation neutrosophic rough set; nondual; two universes; multiattribute group decision making; nonstandard analysis; extended nonstandard analysis; monad; binad; left monad closed to the right; right monad closed to the left; pierced binad; unpierced binad; nonstandard neutrosophic mobinad set; neutrosophic topology; nonstandard neutrosophic topology; visual tracking; neutrosophic weight; objectness; weighted multiple instance learning; neutrosophic triangular norms; residuated lattices; representable neutrosophic t-norms; De Morgan neutrosophic triples; neutrosophic residual implications; infinitely ?-distributive; probabilistic neutrosophic hesitant fuzzy set; decision-making; Choquet integral; e-marketing; Internet of Things; neutrosophic set; multicriteria decision making techniques; uncertainty modeling; neutrosophic goal programming approach; shale gas water management system.

FUZZY IDEALS IN Î“-NEAR-RINGSLulu.comFuzzy Information & Engineering and Operations Research & ManagementSpringer Science & Business Media

In this paper we introduce the notion of ????-algebras as a generalization of ??-algebras, we investigate its elementary properties. The aim of this paper is to investigate the concept of filters, left ideals (right ideal, ideal) and fuzzy filters in ????-algebras. Moreover, we investigate relationships between left ideals and filters in ????-algebras.

"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. Some articles in this issue: Neutrosophic Soft Fixed Points, Selection of Alternative under the Framework of Single-Valued Neutrosophic Sets, Application of Single Valued Trapezoidal Neutrosophic Numbers in Transportation Problem.

The topics discussed in this book are Int-soft semigroup, Int-soft left (right) ideal, Int-soft (generalized) bi-ideal, Int-soft quasi-ideal, Int-soft interior ideal, Int-soft left (right) duo semigroup, starshaped (?, ?? qk)-fuzzy set, quasi-starshaped (?, ?? qk)-fuzzy set, semidetached mapping, semidetached semigroup, (?, ? ?qk)-fuzzy subsemi-group, (qk, ? ?qk)-fuzzy subsemigroup, (?, ? ? qk)-fuzzy subsemigroup, (qk, ? ? qk)-fuzzy subsemigroup, (? ? qk, ? ? qk)-fuzzy subsemigroup, (?, ?? qk?)-fuzzy subsemigroup, ?? qk? -level subsemigroup/bi-ideal, (?, ?? qk?)-fuzzy (generalized) bi-ideal, ?-lower (?-upper) approximation of fuzzy set, ?-lower (?-upper) rough fuzzy subsemigroup, ?-rough fuzzy subsemigroup, Neutrosophic N -structure, neutrosophic N -subsemigroup, ?-neutrosophic N -subsemigroup, and neutrosophic N -product.

Near Rings, Fuzzy Ideals, and Graph Theory explores the relationship between near rings and fuzzy sets and between near rings and graph theory. It covers topics from recent literature along with several characterizations. After introducing all of the necessary fundamentals of algebraic systems, the book presents the essentials of near rings theory, relevant examples, notations, and simple theorems. It then describes the prime ideal concept in near rings, takes a rigorous approach to the dimension theory of N-groups, gives some detailed proofs of matrix near rings, and discusses the gamma near ring, which is a generalization of both gamma rings and near rings. The authors also provide an introduction to fuzzy algebraic systems, particularly the fuzzy ideals of near rings and gamma near rings. The final chapter explains important concepts in graph theory, including directed hypercubes, dimension, prime graphs, and graphs with respect to ideals in near rings. Near ring theory has many applications in areas as diverse as digital computing, sequential mechanics, automata theory, graph theory, and combinatorics. Suitable for researchers and graduate students, this book provides readers with an understanding of

near ring theory and its connection to fuzzy ideals and graph theory.

In the world of mathematics, the study of fuzzy relations and its theories are well-documented and a staple in the area of calculative methods. What many researchers and scientists overlook is how fuzzy theory can be applied to industries outside of arithmetic. The framework of fuzzy logic is much broader than professionals realize. There is a lack of research on the full potential this theoretical model can reach. The Handbook of Research on Emerging Applications of Fuzzy Algebraic Structures provides emerging research exploring the theoretical and practical aspects of fuzzy set theory and its real-life applications within the fields of engineering and science. Featuring coverage on a broad range of topics such as complex systems, topological spaces, and linear transformations, this book is ideally designed for academicians, professionals, and students seeking current research on innovations in fuzzy logic in algebra and other matrices.

In this paper, the notions of special neutrosophic UP-subalgebras, special neutrosophic near UP-filters, special neutrosophic UP-filters, special neutrosophic UP-ideals, and special neutrosophic strong UP-ideals of UP-algebras are introduced, and several properties are investigated. Conditions for neutrosophic sets to be special neutrosophic UP-subalgebras, special neutrosophic near UP-filters, special neutrosophic UP-filters, special neutrosophic UP-ideals, and special neutrosophic strong UP-ideals of UP-algebras are provided. Relations between special neutrosophic UP-subalgebras (resp., special neutrosophic near UP-filters, special neutrosophic UP-filters, special neutrosophic UP-ideals, special neutrosophic strong UP-ideals) and their level subsets are considered.

This book presents the latest advances in applying fuzzy sets and operations research technology and methods. It is the first fuzzy mathematics textbook for students in high school and technical secondary schools. Part of Springer’s book series: Advances in Intelligent and Soft Computing, it includes the 36 best papers from the Ninth International Conference on Fuzzy Information and Engineering (ICFIE2017), organized by the Fuzzy Information and Engineering Branch of Operations Research Society of China and Operations Research Society of Guangdong Province in China. Every paper has been carefully peer-reviewed by leading experts. The areas covered include 1. Fuzzy Measure and Integral; 2. Fuzzy Topology and Algebras; 3. Classification and Recognition; 4. Control and Fuzziness; 5. Extension of Fuzzy Set and System; 6. Operations Research and Management (OR); The book is suitable for college, masters and doctoral students; educators in universities, colleges, middle and primary schools teaching mathematics, fuzzy sets and systems, operations research, information and engineering, as well as management, control. Discussing case applications, it is also a valuable reference resource for professionals interested in theoretical and practical research.

In the present study we aim to introduce novel concepts of m-polar neutrosophic set (MPNS) and m-polar neutrosophic topology. For this aim, we first investigate several characterizations of the notion of m-polar neutrosophic set and discuss its fundamental properties. We establish some operations on m-polar neutrosophic set. We propose score functions for the comparison of m-polar neutrosophic numbers (MPNNs). Then we introduce m-polar neutrosophic topology and define interior, closure, exterior and frontier for m-polar neutrosophic sets (MPNSs) with illustrative examples. We discuss some results which holds for classical set theory but do not hold for m-polar neutrosophic set theory. We introduce cosine similarity measure and set theoretic similarity measures for MPNSs. Furthermore, we present two algorithms for multi-criteria decision-making (MCDM) in medical diagnosis by using m-polar neutrosophic set (MPNS) and m-polar neutrosophic topology.

Modern optimization approaches have attracted many research scientists, decision makers and practicing researchers in recent years as powerful intelligent computational techniques for solving several complex real-world problems. The Handbook of Research on Modern Optimization Algorithms and Applications in Engineering and Economics highlights the latest research innovations and applications of algorithms designed for optimization applications within the fields of engineering, IT, and economics. Focusing on a variety of methods and systems as well as practical examples, this book is a significant resource for graduate-level students, decision makers, and researchers in both public and private sectors who are seeking research-based methods for modeling uncertain real-world problems. .

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'', Part II on ``Fuzzy Mathematics and Its Applications'', Part III discusses ``Fuzzy Information and Computer'', Part IV is devoted to ``Operations Research and Management and Its Applications'' and Part V includes various other topics.

This book is the proceedings of the Third International Conference on Fuzzy Information and Engineering (ICFIE 2009) held in the famous mountain city Chongqing in Southwestern China, from September 26-29, 2009. Only high-quality papers are included. The ICFIE 2009, built on the success of previous conferences, the ICFIE 2007 (Guangzhou, China), is a major symposium for scientists, engineers and practitioners in the world to present their updated results, ideas, developments and applications in all areas of fuzzy information and engineering. It aims to strengthen relations between industry research laboratories and universities, and to create a primary symposium for world scientists in fuzzy fields as follows: Fuzzy Information; Fuzzy Sets and Systems; Soft Computing; Fuzzy Engineering; Fuzzy Operation Research and Management; Artificial Intelligence; Fuzzy Mathematics and Systems in Applications, etc.

In multi-attribute group decision-making (MAGDM) problems, there exist some multi-polarity for the attributes and criteria. Sometimes in real life situations, we deal with the both membership and non-membership grades for the attributes in the presence of multi-polarity. For this purpose, we change verbally stated information into mathematical language with the help of uncertain linguistic variables to deal with the ambiguities and uncertainties.

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.