Intuitionistic Fuzzy Sets Spherical Representation And

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Intuitionistic Fuzzy Sets *Define Intuitionistic Fuzzy set. Give 2 examples of Intuitionistic Fuzzy set. Describe differences* ~~example in intuitionistic fuzzy set~~ ~~Type2 fuzzy set , Instutionistic fuzzy set \u0026 Extension principle - Lecture 06 By Prof S Chakraverty~~

Final Year Projects ¦ Texture Retrieval System using Intuitionistic Fuzzy Set Theory~~Application of Intuitionistic Fuzzy Logic to Decision Making by Dr. Rekha Gupta~~

An Introduction to Fuzzy Logic**Fuzzy sets and their extensions** *Introduction to Fuzzy Logic ¦ Fuzzy Logic* ~~Introduction to Fuzzy sets- Lecture 01 By Prof S Chakraverty~~ *Relations and Operations on fuzzy set ¦ Fuzzy Logic Mathematical Applications in Medical Diagnosis* ~~An Egg-Boiling Fuzzy Logic Robot~~

Fuzzy Logic - Computerphile*Fuzzy logic basics (a), 23/3/2015* ~~Topology \u0026 Geometry - LECTURE 01 Part 01/02 - by Dr Tadashi Tokieda~~ ~~How to work with Fuzzy Membership functions in Matlab~~ **Fuzzy Composition - Max-Min and Max-Product Composition With solved example in neural network hindi H462710 - Fuzzy Logic Control Example** *Fuzzy Logic ¦¦ Operations on Fuzzy Sets ¦¦ Solved Important Numerical Features of Membership Functions and Defuzzification to Crisp Sets ¦ Fuzzy Logic*

FUZZY MEMBERSHIP FUNCTION WITH EXAMPLES¦¦ SIMPLE EXPLANATION ¦¦ FUZZY THEORY~~Mathematics as a Religious Experience~~ ~~Proof Theory of Homotopy Type Theories by Ulrik Buchholtz (Carnegie Mellon University, USA)~~ *Prof. Dana Scott - Geometry Without Points* **Definition of Fuzzy Set Part - 1** *John McCleary (Vassar College) / A History of Algebraic Topology / 2009-03-12 ICOA 2020 : Session TM3 Mathematics 2 (21/04/2020) 20+ SORTING ALGORITHMS, VISUALIZED - Number Plot* ~~Membership function and normalized fuzzy set - Lecture 02 By Prof S Chakraverty (NIT Rourkela)~~ *Intuitionistic Fuzzy Sets Spherical Representation*

Intuitionistic Fuzzy Sets: Spherical Representation and Distances Y. Yang, F. Chiclana Abstract Most existing distances between intuitionistic fuzzy sets are defined in linear plane rep-resentations in 2D or 3D space. Here, we define a new interpretation of intuitionistic fuzzy sets as a restricted spherical surface in 3D space.

Intuitionistic Fuzzy Sets: Spherical Representation and ...

Most existing distances between intuitionistic fuzzy sets are defined in linear plane representations in 2D or 3D space. Here, we define a new interpretation of intuitionistic fuzzy sets as a restricted spherical surface in 3D space. A new spherical distance for intuitionistic fuzzy sets is introduced. We prove that the spherical distance is different from those existing distances in that it is nonlinear with respect to the change of the corresponding fuzzy membership degrees. © 2009 Wiley ...

Intuitionistic fuzzy sets: Spherical representation and ...

between intuitionistic fuzzy sets may be more adequate to capture the semantic difference. Here, new nonlinear distances between two intuitionistic fuzzy sets are introduced. We call these distances spherical distances because their definition is based on a spherical representation of intuitionistic fuzzy sets.

Intuitionistic Fuzzy Sets: Spherical Representation and ...

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Intuitionistic fuzzy sets: Spherical representation and ...

Yang, Y. and Chiclana, F. (2009) Intuitionistic Fuzzy Sets: Spherical Representation and Distances. International Journal of Intelligent Systems , 24 (4), pp 399-420. en

Intuitionistic fuzzy sets: spherical representation and ...

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Intuitionistic Fuzzy Sets: Spherical Representation and ...

In this paper, we construct spherical fuzzy sets and examined how spherical fuzzy sets are advanced tools of the fuzzy sets, intuitionistic fuzzy sets and picture fuzzy sets. Spherical fuzzy set is the direct extension of Pythagorean fuzzy set, we seen that how we put neutral membership, I j (r) =0 in SPSs to reduce in Pythagorean fuzzy sets. Also seen that how SFSs is extension of picture fuzzy set by taking squares of the membership degrees we obtain the spherical fuzzy sets.

Spherical fuzzy sets and its representation of spherical ...

Yang and Chiclana proposed a spherical representation, which allowed usto define a distance function between intuitionistic fuzzy sets. They have shown that the spherical distance is different from those existingdistances in that it is nonlinear with respect to the change of the corresponding fuzzymembership degrees, and thus it seems more appropriate than usual linear distances for nonlinear contexts in 3D spaces.

Spherical fuzzy sets and spherical fuzzy TOPSIS method ...

The notions of intuitionistic fuzzy set (IFS) and intuitionistic L-fuzzy sets (ILFS) were introduced in [1, 21 and [3], respectively, as a generalization of the notion of fuzzy set (FS). Let a set E be fixed. An ILFS A* in E is an object having the form A* = {(x, CL,~(X), u.-,(x)) 1 x E El, where the functions pA : E += L and va : E + L define ...

Intuitionistic fuzzy sets - ScienceDirect

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Intuitionistic Fuzzy Sets Spherical Representation And
CiteSeerX - Document Details (Isaac Councill, Lee Giles, Pradeep Teregowda): Most existing distances between intuitionistic fuzzy sets are defined in linear plane rep-resentations in 2D or 3D space. Here, we define a new interpretation of intuitionistic fuzzy sets as a restricted spherical surface in 3D space. A new spherical distance for intuitionistic fuzzy sets is introduced.

Intuitionistic Fuzzy Sets: Spherical Representation and ...
In spherical fuzzy sets, while the squared sum of membership, non-membership and hesitancy parameters can be between 0 and 1, each of them can be defined between 0 and 1 independently to satisfy that their squared sum is at most equal to 1. Figure 4 illustrates the differences among IFS, PFS, NS and SFS.

Extension of WASPAS with Spherical Fuzzy Sets
Intuitionistic fuzzy sets: Spherical representation and distances By Y. Yang and F. Chiclana Get PDF (449 KB)

Intuitionistic fuzzy sets: Spherical representation and ...
In fuzzy set theory, an important class of triangular norms and conorms is the class of continuous Archimedean nilpotent triangular norms and conorms. It has been shown that for such t-norms T there exists a permutation /spl phi/ of [0,1] such that T is the /spl phi/-transform of the Lukasiewicz t-norm. In this paper we introduce the notion of intuitionistic fuzzy t-norm and t-conorm, and investigate under which conditions a similar representation theorem can be obtained.

On the representation of intuitionistic fuzzy t-norms and ...
Here, we define a new interpretation of intuitionistic fuzzy sets a... Intuitionistic fuzzy sets: Spherical representation and distances - Yang - 2009 - International Journal of Intelligent Systems - Wiley Online Library

Intuitionistic fuzzy sets: Spherical representation and ...
Introduction. 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 ...

Decision Making with Spherical Fuzzy Sets ¦ SpringerLink
Abstract. The extensions of ordinary fuzzy sets such as intuitionistic fuzzy sets (IFS), Pythagorean fuzzy sets (PFS), and neutrosophic sets (NS), whose membership functions are based on three dimensions, aim to describe expert ' s judgments more informatively and explicitly. Introduction of generalized three dimensional spherical fuzzy sets (SFS) including some essential differences from the other fuzzy sets is presented in the literature with their arithmetic, aggregation, and ...

Spherical Fuzzy Sets and Decision Making Applications ...
Intuitionistic fuzzy sets form an extension of fuzzy sets: while fuzzy sets give a degree to which an element belongs to a set, intuitionistic fuzzy sets give both a membership degree and a nonmembership degree. The only constraint on those two degrees is that their sum must be smaller than or equal to 1.

This book aims to be a comprehensive and accurate survey of state-of-art research on intuitionistic fuzzy sets theory and could be considered a continuation and extension of the author ´s previous book on Intuitionistic Fuzzy Sets, published by Springer in 1999 (Atanassov, Krassimir T., Intuitionistic Fuzzy Sets, Studies in Fuzziness and soft computing, ISBN 978-3-7908-1228-2, 1999). Since the aforementioned book has appeared, the research activity of the author within the area of intuitionistic fuzzy sets has been expanding into many directions. The results of the author ´s most recent work covering the past 12 years as well as the newest general ideas and open problems in this field have been therefore collected in this new book.

This book offers a multifaceted perspective on fuzzy set theory, discussing its developments over the last 50 years. It reports on all types of fuzzy sets, from ordinary to hesitant fuzzy sets, with each one explained by its own developers, authoritative scientists well known for their previous works. Highlighting recent theorems and proofs, the book also explores how fuzzy set theory has come to be extensively used in almost all branches of science, including the health sciences, decision science, earth science and the social sciences alike. It presents a wealth of real-world sample applications, from routing problem to robotics, and from agriculture to engineering. By offering a comprehensive, timely and detailed portrait of the field, the book represents an excellent reference guide for researchers, lecturers and postgraduate students pursuing research on new fuzzy set extensions.

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.

The International Conference on Information Processing and Management of - certainty in Knowledge-Based Systems, IPMU, is organized every two years with the aim of bringing together scientists working on methods for the management of uncertainty and aggregation of information in intelligent systems. Since 1986, this conference has been providing a forum for the exchange of ideas between th theoreticians and practitioners working in these areas and related ?elds. The 13 IPMU conference took place in Dortmund, Germany, June 28–July 2, 2010. This volume contains 79 papers selected through a rigorous reviewing process. The contributions re?ect the richness of research on topics within the scope of the conference and represent several important developments, speci?cally focused on theoretical foundations and methods for information processing and management of uncertainty in knowledge-based systems. We were delighted that Melanie Mitchell (Portland State University, USA), Nihkil R. Pal (Indian Statistical Institute), Bernhard Sch¨ olkopf (Max Planck I- titute for Biological Cybernetics, Tubing¨ en, Germany) and Wolfgang Wahlster (German Research Center for Arti?cial Intelligence, Saarbruc¨ ken)

accepted our invitations to present keynote lectures. Jim Bezdek received the Kamp ´ede F ´eriet Award, granted every two years on the occasion of the IPMU conference, in view of his eminent research contributions to the handling of uncertainty in clustering, data analysis and pattern recognition.

This book is a collection of papers devoted to the emergence and development in Bulgarian Academy of Sciences of some of the areas of informatics, including artificial intelligence. The papers are prepared by specialists from the Academy, some of whom are among the founders of these scientific and application areas in Bulgaria and in some cases in the world. The book is interesting for specialists in informatics and computer science and researchers in history of sciences.

On the basis of fuzzy sets and some of their relevant generalizations, this book systematically presents the fundamental principles and applications of group decision making under different scenarios of preference relations. By using intuitionistic knowledge as the field of discourse, this work investigates by utilizing innovative research means the fundamental principles and methods of group decision making with various different intuitionistic preferences: Mathematical reasoning is employed to study the consistency of group decision making; Methods of fusing information are applied to look at the aggregation of multiple preferences; Techniques of soft computing and optimization are utilized to search for satisfactory decision alternatives. Each chapter follows the following structurally clear format of presentation: literature review, development of basic theory, verification and reasoning of principles , construction of models and computational schemes, and numerical examples, which cover such areas as technology, enterprise competitiveness, selection of airlines, experts decision making in weather-sensitive enterprises, etc. In terms of theoretical principles, this book can be used as a reference for researchers in the areas of management science, information science, systems engineering, operations research, and other relevant fields. It can also be employed as textbook for upper level undergraduate students and graduate students. In terms of applications, this book will be a good companion for all those decision makers in government, business, and technology areas.

FLINS, an acronym introduced in 1994 and originally for Fuzzy Logic and Intelligent Technologies in Nuclear Science, is now extended into a well-established international research forum to advance the foundations and applications of computational intelligence for applied research in general and for complex engineering and decision support systems.The principal mission of FLINS is bridging the gap between machine intelligence and real complex systems via joint research between universities and international research institutions, encouraging interdisciplinary research and bringing multidiscipline researchers together.FLINS 2020 is the fourteenth in a series of conferences on computational intelligence systems.

In this paper, we prove that Neutrosophic Set (NS) is an extension of Intuitionistic Fuzzy Set (IFS) no matter if the sum of neutrosophic components is 1, or =1. For the case when the sum of components is 1 (as in IFS), after applying the neutrosophic aggregation operators, one gets a different result than applying the intuitionistic fuzzy operators, since the intuitionistic fuzzy operators ignore the indeterminacy, while the neutrosophic aggregation operators take into consideration the indeterminacy at the same level as truth-membership and falsehood-nonmembership are taken.

This book gathers the most recent developments in fuzzy & intelligence systems and real complex systems presented at INFUS 2020, held in Istanbul on July 21–23, 2020. The INFUS conferences are a well-established international research forum to advance the foundations and applications of intelligent and fuzzy systems, computational intelligence, and soft computing, highlighting studies on fuzzy & intelligence systems and real complex systems at universities and international research institutions. Covering a range of topics, including the theory and applications of fuzzy set extensions such as intuitionistic fuzzy sets, hesitant fuzzy sets, spherical fuzzy sets, and fuzzy decision-making; machine learning; risk assessment; heuristics; and clustering, the book is a valuable resource for academics, M.Sc. and Ph.D. students, as well as managers and engineers in industry and the service sectors.

Keeping in view the importance of new defined and well growing spherical fuzzy sets, in this study, we proposed a novel method to handle the spherical fuzzy multi-criteria group decision-making (MCGDM) problems. Firstly, we presented some novel logarithmic operations of spherical fuzzy sets (SFSs). Then, we proposed series of novel logarithmic operators, namely spherical fuzzy weighted average operators and spherical fuzzy weighted geometric operators.