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                        / edited by Alireza Sadeghian, Jerry M Mendel, Hooman Tahayori

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   Nota di contenuto   Part 1 - Theoretical Foundations -- Interval Type-2 Fuzzy Logic
                        Systems and Perceptual Computers: Their Similarities and Differences
                        -- Continuous Karnik-Mendel Algorithms and Their Generalizations --
                        Two Differences Between Interval Type-2 and Type-1 Fuzzy Logic
                        Controllers: Adaptiveness and Novelty -- Interval Type-2 Fuzzy Markov
                        Chains -- zSlices Based General Type-2 Fuzzy Sets and Systems --
                        Geometric Type-2 Fuzzy Sets -- Type-2 Fuzzy Sets and Bichains --
                        Type-2 Fuzzy Sets and Conceptual Spaces -- Part B- Type-2 Fuzzy Set
                        Membership Function Generation -- Modeling Complex Concepts with
                        Type-2 Fuzzy Sets: The Case of User Satisfaction of Online Services.
                        - Construction of Interval type-2 fuzzy sets from fuzzy sets. Methods
                        and applications -- Interval type-2 fuzzy membership function
                        generation methods for representing sample data -- Part C -
                        Applications -- ype-2 Fuzzy Logic in Image Analysis and Pattern
                        Recognition -- Reliable Tool Life Estimation with Multiple Acoustic
                        Emission Signal Feature Selection and Integration Based on Type-2
                        Fuzzy Logic -- A Review of Cluster Validation with an Example of Type-
                        2 Fuzzy Application in R -- Type-2 Fuzzy Set and Fuzzy Ontology for
                        Diet Application.

   Sommario/riassunto   This book explores recent developments in the theoretical foundations

and novel applications of general and interval type-2 fuzzy sets and systems, including: algebraic properties of type-2 fuzzy sets, geometric-based definition of type-2 fuzzy set operators, generalizations of the continuous KM algorithm, adaptiveness and novelty of interval type-2 fuzzy logic controllers, relations between conceptual spaces and type-2 fuzzy sets, type-2 fuzzy logic systems versus perceptual computers; modeling human perception of real world concepts with type-2 fuzzy sets, different methods for generating membership functions of interval and general type-2 fuzzy sets, and applications of interval type-2 fuzzy sets to control, machine tooling, image processing and diet. The applications demonstrate the appropriateness of using type-2 fuzzy sets and systems in real world problems that are characterized by different degrees of uncertainty.