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Nota di contenuto	Preface xiii -- Organization of the Book xv -- 1 Fuzzy/Intuitionistic Fuzzy Set Theory 1 -- 1.1 Introduction to Fuzzy Set 1 -- 1.2 Mathematical Representation of Fuzzy Sets 3 -- 1.3 Membership Function 6 -- 1.4 Fuzzy Relations 10 -- 1.5 Projection 13 -- 1.6 Composition of Fuzzy Relation 14 -- 1.7 Fuzzy Binary Relation 19 -- 1.8 Transitive Closure of Fuzzy Binary Relation 21 -- 1.9 Fuzzy Equivalence Relation 23 -- 1.10 Intuitionistic Fuzzy Set 24 -- 1.11 Construction of Intuitionistic Fuzzy Set 26 -- 1.12 Intuitionistic Fuzzy Relations 29 -- 1.13 Composition of Intuitionistic Fuzzy Relation 31 -- 1.13.1 Composition of IFR Using T-norms and T-conorms 32 -- 1.14 Intuitionistic Fuzzy Binary Relation 34 -- 1.14.1 Reflexive Property 34 -- 1.14.2 Symmetric Property 37 -- 1.14.3 Transitive Property 38 -- 1.15 Summary 39 -- References 39 -- 2 Playing with Fuzzy/Intuitionistic Fuzzy Numbers 41 -- 2.1 Introduction 41 -- 2.2 Fuzzy Numbers 41 -- 2.3 Fuzzy Intervals 42 -- 2.4 Zadeh's Extension Principle 43 -- 2.4.1 Extension Principle for Two Variables 44 -- 2.5 Fuzzy Numbers with α -Levels 48 -- 2.6 Operations on Fuzzy

Numbers with Intervals 52 -- 2.7 Operations with Fuzzy Numbers based on Interval Levels 54 -- 2.8 Operations on Fuzzy Numbers Using Extension Principle 62 -- 2.8.1 Operations 63 -- 2.8.2 Examples on Operations of Fuzzy Numbers Using Extension Principle 64 -- 2.9 L-R Representation of Fuzzy Numbers 66 -- 2.10 Intuitionistic Fuzzy Numbers 73 -- 2.11 Triangular Intuitionistic Fuzzy Number 74 -- 2.12 Operations Using Triangular Intuitionistic Fuzzy Numbers 75 -- 2.13 Trapezoidal Intuitionistic Fuzzy Numbers 77 -- 2.14 Cut Set of Intuitionistic Fuzzy Number 78 -- 2.15 Distances Between Two Intuitionistic Fuzzy Numbers 80 -- 2.16 Summary 80 -- References 80 -- 3 Similarity Measures and Measures of Fuzziness 83 -- 3.1 Introduction 83 -- 3.2 Distance and Similarity Measures 83 -- 3.2.1 Distance Measure 84 -- 3.2.2 Similarity Measure 84 -- 3.3 Types of Distance Measure Between Fuzzy Sets 84. 3.4 Types of Similarity Measures Between Fuzzy Sets 85 -- 3.5 Generalized Fuzzy Number 85 -- 3.6 Similarity Measures Between Two Fuzzy Numbers 88 -- 3.7 Inclusion Measure 94 -- 3.8 Measures of Fuzziness 95 -- 3.8.1 Index of Fuzziness 95 -- 3.8.2 Yager's Measure 96 -- 3.8.3 Fuzzy Entropy 96 -- 3.9 Intuitionistic Fuzzy Distance and Similarity Measures 98 -- 3.10 Intuitionistic Fuzzy Entropy 105 -- 3.11 Different Types of Intuitionistic Fuzzy Entropies 106 -- 3.12 Summary 107 -- References 107 -- 4 Fuzzy/Intuitionistic Fuzzy Measures and Fuzzy Integrals 111 -- 4.1 Introduction 111 -- 4.2 Definition of Fuzzy Measure 111 -- 4.3 Fuzzy Measures 112 -- 4.3.1 Sugeno's Fuzzy Measure 112 -- 4.3.2 Belief Measure 115 -- 4.3.3 Plausibility Measure 116 -- 4.3.4 Possibility Measure and Necessity Measure 116 -- 4.3.4.1 Possibility Measure 117 -- 4.3.4.2 Necessity Measure 119 -- 4.4 Fuzzy Integrals 121 -- 4.4.1 Sugeno Integral 122 -- 4.4.2 Choquet Integral 125 -- 4.4.3 Sipo's Integral 129 -- 4.5 Intuitionistic Fuzzy Integral 130 -- 4.5.1 Intuitionistic Fuzzy Choquet Integral 130 -- 4.6 Summary 131 -- References 131 -- 5 Operations on Fuzzy/Intuitionistic Fuzzy Sets and Application in Decision Making 133 -- 5.1 Introduction 133 -- 5.2 Fuzzy Operations 133 -- 5.2.1 Fuzzy Union 134 -- 5.2.2 Fuzzy Intersection 134 -- 5.2.3 Fuzzy Complements 134 -- 5.2.4 Algebraic Product 136 -- 5.2.5 Algebraic Sum 137 -- 5.2.6 Simple Difference 137 -- 5.2.7 Bounded Sum 137 -- 5.2.8 Bounded Difference 137 -- 5.2.9 Bounded Product 137 -- 5.3 Fuzzy Other Operators: Fuzzy T-Norms and T-Conorms 138 -- 5.3.1 Definition of T-Norm 138 -- 5.3.2 Definition of T-Conorm 139 -- 5.4 Implication Operator 142 -- 5.5 Aggregation Operator with Application in Decision Making 144 -- 5.5.1 Fuzzy Weighted Averaging Operator (FWA) 144 -- 5.5.2 Fuzzy Ordered Weighted Averaging Operator (FOWA) 145 -- 5.5.3 Fuzzy Generalized Ordered Weighted Averaging Operator (GOWA) 146 -- 5.5.4 Fuzzy Hybrid Averaging Operator (FHA) 146 -- 5.5.5 Fuzzy Quasi-Arithmetic Weighted Averaging Operator 146. 5.5.6 Induced Generalized Fuzzy Averaging Operator (IGOWA) 147 -- 5.5.7 Choquet Aggregation Operator 149 -- 5.5.8 Induced Choquet Ordered Aggregation Operator 150 -- 5.6 Intuitionistic Fuzzy Operators 152 -- 5.7 Intuitionistic Fuzzy Aggregation Operator 153 -- 5.7.1 Generalized Intuitionistic Fuzzy Aggregation Operator 153 -- 5.7.2 Generalized Intuitionistic Fuzzy Ordered Weighting Operator (GIFOWA) 155 -- 5.7.3 Generalized Intuitionistic Fuzzy Hybrid Operator 157 -- 5.7.4 Intuitionistic Fuzzy Weighted Geometric Operator (IFWG) 160 -- 5.7.5 Intuitionistic Fuzzy Ordered Weighted Geometric Operator 161 -- 5.7.6 Induced Generalized Intuitionistic Fuzzy Ordered Averaging Operator 161 -- 5.7.7 Intuitionistic Fuzzy Choquet Integral Operator 162 -- 5.7.8 Induced Intuitionistic Fuzzy Choquet Integral Operator 162 -- 5.8 Example on Decision-making Problems 164 -- 5.9

Summary 168 -- References 168 -- 6 Fuzzy Linear Equations 171 -- 6.1 Introduction 171 -- 6.2 Fuzzy Linear Equation 172 -- 6.2.1 Problem of Finding an Unknown Number 173 -- 6.3 Solving Linear Equation Using Cramer's Rule 177 -- 6.4 Inverse of a Fuzzy Matrix 182 -- 6.5 Summary 189 -- References 189 -- 7 Fuzzy Matrices and Determinants 191 -- 7.1 Basic Matrix Theory 191 -- 7.1.1 Matrix Addition 192 -- 7.1.2 Matrix Multiplication 193 -- 7.1.3 Transpose of a Matrix 193 -- 7.2 Fuzzy Matrices 194 -- 7.2.1 Matrix Addition, Multiplication, Max, Min Operations 197 -- 7.2.2 Identity Matrix 202 -- 7.3 Determinant of a Square Fuzzy Matrix 202 -- 7.3.1 Examples of Fuzzy Determinants 203 -- 7.4 Adjoint of a Square Fuzzy Matrix 206 -- 7.4.1 Few Proposition of Adjoint of Fuzzy Matrices 207 -- 7.5 Properties of Reflexive Matrices 212 -- 7.6 Generalized Inverse of a Fuzzy Matrix 215 -- 7.7 Intuitionistic Fuzzy Matrix 216 -- 7.7.1 Identity Matrix 217 -- 7.7.2 Null Matrix 218 -- 7.7.3 Generalized Inverse of Intuitionistic Fuzzy Matrix 218 -- 7.8 Summary 218 -- References 218 -- 8 Fuzzy Subgroups 221 -- 8.1 Introduction 221 -- 8.2 Theorems of Fuzzy Subgroup 222. -- 8.3 Fuzzy-level Subgroup 226 -- 8.4 Fuzzy Normal Subgroup 228 -- 8.5 Fuzzy Subgroups Using T-norms 229 -- 8.6 Product of Fuzzy Subgroups 231 -- 8.7 Summary 234 -- References 235 -- 9 Application of Fuzzy/Intuitionistic Fuzzy Set in Image Processing 237 -- 9.1 Introduction 237 -- 9.2 Digital Images 237 -- 9.3 Image Enhancement 238 -- 9.3.1 Fuzzy Enhancement Method 238 -- 9.3.2 Intuitionistic Fuzzy Enhancement Method 239 -- 9.4 Thresholding 240 -- 9.4.1 Intuitionistic Fuzzy Thresholding Method 242 -- 9.4.2 Fuzzy Thresholding Method 244 -- 9.5 Edge Detection 244 -- 9.5.1 Fuzzy Edge-detection Method 245 -- 9.5.2 Intuitionistic Fuzzy Edge Detection 246 -- 9.6 Clustering 248 -- 9.6.1 Fuzzy c Means Clustering (FCM) 248 -- 9.6.2 Intuitionistic Fuzzy Clustering 249 -- 9.6.3 Kernel Clustering 250 -- 9.7 Mathematical Morphology 252 -- 9.7.1 Fuzzy Approach 254 -- 9.7.2 Intuitionistic Fuzzy Approach 254 -- 9.8 Summary 256 -- References 256 -- 10 Type-2 Fuzzy Set 259 -- 10.1 Introduction 259 -- 10.2 Type-2 Fuzzy Set 260 -- 10.3 Operations on Type-2 Fuzzy Set 263 -- 10.4 Inclusion Measure and Similarity Measure 267 -- 10.4.1 Similarity Measure 268 -- 10.5 Interval Type-2 Fuzzy Set 270 -- 10.6 Application of Interval Type-2 Fuzzy Set in Image Segmentation 271 -- 10.7 Summary 273 -- References 273 -- Beyond Your Doubts 275 -- Index 281.

Sommario/riassunto

Provides detailed mathematical exposition of the fundamentals of fuzzy set theory, including intuitionistic fuzzy sets. This book examines fuzzy and intuitionistic fuzzy mathematics and unifies the latest existing works in literature. It enables readers to fully understand the mathematics of both fuzzy set and intuitionistic fuzzy set so that they can use either one in their applications. Each chapter of Fuzzy Set and Its Extension: The Intuitionistic Fuzzy Set begins with an introduction, theory, and several examples to guide readers along. The first one starts by laying the groundwork of fuzzy/intuitionistic fuzzy sets, fuzzy hedges, and fuzzy relations. The next covers fuzzy numbers and explains Zadeh's extension principle. Then comes chapters looking at fuzzy operators; fuzzy similarity measures and measures of fuzziness; and fuzzy/intuitionistic fuzzy measures and fuzzy integrals. The book also: discusses the definition and properties of fuzzy measures; examines matrices and determinants of a fuzzy matrix; and teaches about fuzzy linear equations. Readers will also learn about fuzzy subgroups. The second to last chapter examines the application of fuzzy and intuitionistic fuzzy mathematics in image enhancement, segmentation, and retrieval. Finally, the book concludes with coverage

the extension of fuzzy sets. This book: -Covers both fuzzy and intuitionistic fuzzy sets and includes examples and practical applications -Discusses intuitionistic fuzzy integrals and recent aggregation operators using Choquet integral, with examples -Includes a chapter on applications in image processing using fuzzy and intuitionistic fuzzy sets -Explains fuzzy matrix operations and features examples Fuzzy Set and Its Extension: The Intuitionistic Fuzzy Set is an ideal text for graduate and research students, as well as professionals, in image processing, decision-making, pattern recognition, and control system design.
