Record Nr. UNINA9910877448803321 Advances in fuzzy clustering and its applications / / edited by J. Valente **Titolo** de Oliveira, W. Pedrycz Pubbl/distr/stampa Chichester, : Wiley, c2007 **ISBN** 1-280-90081-4 9786610900817 0-470-06119-7 0-470-06118-9 Descrizione fisica 1 online resource (456 p.) 54.72 Classificazione Altri autori (Persone) OliveiraJ. Valente de (Jose Valente) PedryczWitold <1953-> Disciplina 006.3 Soggetti Fuzzy systems Soft computing Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Advances in Fuzzy Clustering and its Applications; Contents; List of Contributors; Foreword; Preface; Part I Fundamentals 1; 1 Fundamentals of Fuzzy Clustering; 1.1 Introduction; 1.2 Basic Clustering Algorithms: 1.3 Distance Function Variants: 1.4 Objective Function Variants; 1.5 Update Equation Variants: Alternating Cluster Estimation; 1.6 Concluding Remarks; Acknowledgements; References; 2 Relational Fuzzy Clustering; 2.1 Introduction; 2.2 Object and Relational Data; 2.3 Object Data Clustering Models; 2.4 Relational Clustering; 2.5 Relational Clustering with Non-spherical Prototypes 2.6 Relational Data Interpreted as Object Data2.7 Summary; 2.8 Experiments; 2.9 Conclusions; References; 3 Fuzzy Clustering with Minkowski Distance Functions; 3.1 Introduction; 3.2 Formalization; 3.3 The Majorizing Algorithm for Fuzzy C-means with Minkowski Distances: 3.4 The Effects of the Robustness Parameterl: 3.5 Internet Attitudes; 3.6 Conclusions; References; 4 Soft Cluster Ensembles; 4.1 Introduction; 4.2 Cluster Ensembles; 4.3 Soft Cluster Ensembles; 4.4 Experimental Setup: 4.5 Soft vs. Hard Cluster Ensembles: 4.6

Conclusions and Future Work; Acknowledgements; References

Part II Visualization 5 Aggregation and Visualization of Fuzzy Clusters Based on Fuzzy Similarity Measures; 5.1 Problem Definition; 5.2 Classical Methods for Cluster Validity and Merging; 5.3 Similarity of Fuzzy Clusters; 5.4 Visualization of Clustering Results; 5.5 Conclusions; Appendix 5A.1 Validity Indices; Appendix 5A.2 The Modified Sammon Mapping Algorithm; Acknowledgements; References; 6 Interactive Exploration of Fuzzy Clusters; 6.1 Introduction; 6.2 Neighborgram Clustering; 6.3 Interactive Exploration; 6.4 Parallel Universes: 6.5 Discussion: References Part III Algorithms and Computational Aspects7 Fuzzy Clustering with Participatory Learning and Applications; 7.1 Introduction; 7.2 Participatory Learning; 7.3 Participatory Learning in Fuzzy Clustering; 7.4 Experimental Results; 7.5 Applications; 7.6 Conclusions; Acknowledgements; References; 8 Fuzzy Clustering of Fuzzy Data; 8.1 Introduction; 8.2 Informational Paradigm, Fuzziness and Complexity in Clustering Processes: 8.3 Fuzzy Data: 8.4 Fuzzy Clustering of Fuzzy Data; 8.5 An Extension: Fuzzy Clustering Models for Fuzzy Data Time Arrays: 8.6 Applicative Examples 8.7 Concluding Remarks and Future PerspectivesReferences; 9 Inclusion-based Fuzzy Clustering; 9.1 Introduction; 9.2 Background: Fuzzy Clustering; 9.3 Construction of an Inclusion Index; 9.4 Inclusionbased Fuzzy Clustering; 9.5 Numerical Examples and Illustrations; 9.6 Conclusion; Acknowledgements; Appendix 9A.1; References; 10 Mining Diagnostic Rules Using Fuzzy Clustering; 10.1 Introduction; 10.2 Fuzzy Medical Diagnosis; 10.3 Interpretability in Fuzzy Medical Diagnosis;

Sommario/riassunto

A comprehensive, coherent, and in depth presentation of the state of the art in fuzzy clustering. Fuzzy clustering is now a mature and vibrant area of research with highly innovative advanced applications. Encapsulating this through presenting a careful selection of research contributions, this book addresses timely and relevant concepts and methods, whilst identifying major challenges and recent developments in the area. Split into five clear sections, Fundamentals, Visualization, Algorithms and Computational Aspects, Real-Time and Dynamic Clustering, and Applications and Case Studies

10.4 A Framework for Mining Interpretable Diagnostic Rules; 10.5 An

Illustrative Example: 10.6 Conclusive Remarks

References