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Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Clustering High-Dimensional Data -- 1 Introduction -- 2 Defining Clustering -- 3 The Century of Big Data -- 4 Approaches to High Dimensional Data Clustering -- 4.1 Subspace Clustering -- 4.2 Projected Clustering -- 4.3 Biclustering -- 4.4 Hierarchical Clustering -- 5 Conclusions -- References -- What are Clusters in High Dimensions and are they Difficult to Find? -- 1 Introduction -- 2 Properties of High-Dimensional Data -- 3 Cluster Analysis -- 4 What are Clusters, Especially in Higher Dimensions? -- 5 Consequences for Clustering Algorithms -- 6

Conclusions -- References -- Efficient Density-Based Subspace Clustering in High Dimensions -- 1 Introduction -- 2 Density-Based Subspace Clustering -- 3 Dimensionality Unbiased Density -- 4 Redundancy-Removal -- 5 Pruning Subspace Clusters -- 6 Indexing Subspace Clustering -- 7 Approximate Jump Clustering -- 8 Conclusion -- References -- Comparing Fuzzy Clusterings in High Dimensionality -- 1 Introduction -- 2 Fuzzy Clustering -- 2.1 Some Notations and Definitions -- 2.2 Fuzzy Clustering -- 2.3 Methods for Fuzzy Clustering -- 2.4 Possibilistic Clustering Models -- 2.5 Graded Possibilistic Models -- 3 Comparing Fuzzy Clusterings -- 3.1 Approaches to the Comparison of Clusterings -- 3.2 Notation -- 3.3 Co-association -- 3.4 Fuzzy Coassociation -- 3.5 Comparing Two Partitions -- 4 Partition Similarity Indexes -- 4.1 The Rand and Jaccard Indexes -- 4.2 The Fuzzy Jaccard Index -- 4.3 The Fuzzy Rand Index -- 4.4 The Probabilistic Rand Index -- 4.5 The Probabilistic Jaccard Index -- 5 Applications of Fuzzy Similarity Indexes -- 5.1 Visual Stability Analysis Based on Comparing Fuzzy Clusterings -- 5.2 Tracking Deterministic Annealing -- 6 Conclusion -- References -- Time Series Clustering from High Dimensional Data -- 1 Introduction. 2 Financial High Dimensional Data Characteristics -- 3 Beanplot Time Series -- 4 Parameterizing Beanplot Time Series Data -- 5 Time Series Factor Analysis on Beanplot Time Series -- 6 From Time Series Factor Analysis to the Feature Clustering Approach -- 7 Using the Self Organizing Maps -- 8 Simulation Study -- 9 Application on Real Data -- 10 Conclusions -- References -- Data Dimensionality Estimation: Achievements and Challenges -- 1 Introduction -- 2 Global Methods -- 2.1 Projection Techniques -- 2.2 Fractal-Based Methods -- 2.3 Multidimensional Scaling and Other Methods -- 3 Local Methods -- 3.1 Fukunaga-Olsen's Algorithm -- 3.2 TRN-Based and Local MDS Methods -- 4 Mixed Methods -- 4.1 Levina-Bickel Algorithm -- 5 ID Estimation Methods Benchmarking -- 6 Conclusions -- References -- A Novel Intrinsic Dimensionality Estimator Based on Rank-Order Statistics -- 1 Introduction -- 2 Related Works -- 3 Theoretical Results -- 4 The Algorithm -- 5 Algorithm Evaluation -- 5.1 Dataset Description -- 5.2 Experimental Setting -- 5.3 Experimental Results -- 6 Conclusions and Future Works -- A Algorithm Implementation -- References -- Dimensionality Reduction in Boolean Data: Comparison of Four BMF Methods -- 1 Matrix Decompositions, Dimensionality Reduction, and Boolean Data -- 2 Boolean Matrix Factorization -- 3 The Four Methods Being Compared -- 4 Experimental Comparison -- 4.1 Method of Comparison -- 4.2 Datasets Used -- 4.3 Results -- 5 Conclusions and Further Issues -- References -- A Rough Fuzzy Perspective to Dimensionality Reduction -- 1 Introduction -- 2 Related Works -- 3 Rough-Fuzzy Sets -- 4 Rough-Fuzzy Product Feature Selection -- 4.1 Feature Granularization -- 4.2 Feature Selection -- 5 Experimental Results -- 6 Conclusions -- References -- Author Index.

Sommario/riassunto

This book constitutes the proceedings of the International Workshop on Clustering High-Dimensional Data, CHDD 2012, held in Naples, Italy, in May 2012. The 9 papers presented in this volume were carefully reviewed and selected from 15 submissions. They deal with the general subject and issues of high-dimensional data clustering; present examples of techniques used to find and investigate clusters in high dimensionality; and the most common approach to tackle dimensionality problems, namely, dimensionality reduction and its application in clustering. .
