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Note generali	"This proceedings also includes a special selection of papers from the Industrial Conference on Data Mining, ICDM, Leipzig 2005"--Pref.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Classification and Model Estimation -- On ECOC as Binary Ensemble Classifiers -- Incremental Classification Rules Based on Association Rules Using Formal Concept Analysis -- Parameter Inference of Cost-Sensitive Boosting Algorithms -- Finite Mixture Models with Negative Components -- MML-Based Approach for Finite Dirichlet Mixture Estimation and Selection -- Principles of Multi-kernel Data Mining -- Neural Methods -- Comparative Analysis of Genetic Algorithm, Simulated Annealing and Cutting Angle Method for Artificial Neural

Networks -- Determining Regularization Parameters for Derivative Free Neural Learning -- A Comprehensible SOM-Based Scoring System -- Subspace Methods -- The Convex Subclass Method: Combinatorial Classifier Based on a Family of Convex Sets -- SSC: Statistical Subspace Clustering -- Understanding Patterns with Different Subspace Classification -- Clustering: Basics -- Using Clustering to Learn Distance Functions for Supervised Similarity Assessment -- Linear Manifold Clustering -- Universal Clustering with Regularization in Probabilistic Space -- Acquisition of Concept Descriptions by Conceptual Clustering -- Applications of Clustering -- Clustering Large Dynamic Datasets Using Exemplar Points -- Birds of a Feather Surf Together: Using Clustering Methods to Improve Navigation Prediction from Internet Log Files -- Alarm Clustering for Intrusion Detection Systems in Computer Networks -- Clustering Document Images Using Graph Summaries -- Feature Grouping, Discretization, Selection and Transformation -- Feature Selection Method Using Preferences Aggregation -- Ranked Modelling with Feature Selection Based on the CPL Criterion Functions -- A Grouping Method for Categorical Attributes Having Very Large Number of Values -- Unsupervised Learning of Visual Feature Hierarchies -- Multivariate Discretization by Recursive Supervised Bipartition of Graph -- CorePhrase: Keyphrase Extraction for Document Clustering -- A New Multidimensional Feature Transformation for Linear Classifiers and Its Applications -- Applications in Medicine -- Comparison of FLDA, MLP and SVM in Diagnosis of Lung Nodule -- Diagnosis of Lung Nodule Using Reinforcement Learning and Geometric Measures -- Iris Recognition Algorithm Based on Point Covering of High-Dimensional Space and Neural Network -- Automatic Clinical Image Segmentation Using Pathological Modelling, PCA and SVM -- Improved MRI Mining by Integrating Support Vector Machine Priors in the Bayesian Restoration -- Prediction of Secondary Protein Structure Content from Primary Sequence Alone – A Feature Selection Based Approach -- Alternative Clustering by Utilizing Multi-objective Genetic Algorithm with Linked-List Based Chromosome Encoding -- Time Series and Sequential Pattern Mining -- Embedding Time Series Data for Classification -- Analysis of Time Series of Graphs: Prediction of Node Presence by Means of Decision Tree Learning -- Disjunctive Sequential Patterns on Single Data Sequence and Its Anti-monotonicity -- Mining Expressive Temporal Associations from Complex Data -- Statistical Supports for Frequent Itemsets on Data Streams -- Mining Images in Computer Vision -- Autonomous Vehicle Steering Based on Evaluative Feedback by Reinforcement Learning -- Cost Integration in Multi-step Viewpoint Selection for Object Recognition -- Support Vector Machine Experiments for Road Recognition in High Resolution Images -- An Automatic Face Recognition System in the Near Infrared Spectrum -- Mining Images and Texture -- Hierarchical Partitions for Content Image Retrieval from Large-Scale Database -- Optimising the Choice of Colours of an Image Database for Dichromats -- An Approach to Mining Picture Objects Based on Textual Cues -- Mining Motion from Sequence -- Activity and Motion Detection Based on Measuring Texture Change -- A New Approach to Human Motion Sequence Recognition with Application to Diving Actions -- Dominant Plane Detection Using Optical Flow and Independent Component Analysis -- Speech Analysis -- Neural Expert Model Applied to Phonemes Recognition -- An Evidential Reasoning Approach to Weighted Combination of Classifiers for Word Sense Disambiguation -- Aspects of Data Mining -- Signature-Based Approach for Intrusion Detection -- Discovery of Hidden Correlations in a Local Transaction Database Based on

Differences of Correlations -- An Integrated Approach for Mining Meta-rules -- Data Mining on Crash Simulation Data -- Text Mining -- Pattern Mining Across Domain-Specific Text Collections -- Text Classification Using Small Number of Features -- Low-Level Cursive Word Representation Based on Geometric Decomposition -- Special Track: Industrial Applications of Data Mining -- Supervised Evaluation of Dataset Partitions: Advantages and Practice -- Inference on Distributed Data Clustering -- A Novel Approach of Multilevel Positive and Negative Association Rule Mining for Spatial Databases -- Mixture Random Effect Model Based Meta-analysis for Medical Data Mining -- Semantic Analysis of Association Rules via Item Response Theory -- Temporal Approach to Association Rule Mining Using T-Tree and P-Tree -- Aquaculture Feature Extraction from Satellite Image Using Independent Component Analysis -- Modeling the Organoleptic Properties of Matured Wine Distillates -- Bagging Random Trees for Estimation of Tissue Softness -- Concept Mining for Indexing Medical Literature.

Sommario/riassunto

We met again in front of the statue of Gottfried Wilhelm von Leibniz in the city of Leipzig. Leibniz, a famous son of Leipzig, planned automatic logical inference using symbolic computation, aimed to collate all human knowledge. Today, artificial intelligence deals with large amounts of data and knowledge and finds new information using machine learning and data mining. Machine learning and data mining are irreplaceable subjects and tools for the theory of pattern recognition and in applications of pattern recognition such as bioinformatics and data retrieval. This was the fourth edition of MLDM in Pattern Recognition which is the main event of Technical Committee 17 of the International Association for Pattern Recognition; it started out as a workshop and continued as a conference in 2003. Today, there are many international meetings which are titled “machine learning” and “data mining”, whose topics are text mining, knowledge discovery, and applications. This meeting from the first focused on aspects of machine learning and data mining in pattern recognition problems. We planned to reorganize classical and well-established pattern recognition paradigms from the viewpoints of machine learning and data mining. Though it was a challenging program in the late 1990s, the idea has inspired new starting points in pattern recognition and effects in other areas such as cognitive computer vision.