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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Machine Learning -- Pruning for Monotone Classification Trees -- Regularized Learning with Flexible Constraints -- Learning to Answer Emails -- A Semi-supervised Method for Learning the Structure of Robot Environment Interactions -- Using Domain Specific Knowledge for Automated Modeling -- Resolving Rule Conflicts with Double Induction -- A Novel Partial-Memory Learning Algorithm Based on Grey

Relational Structure -- Constructing Hierarchical Rule Systems -- Text Categorization Using Hybrid Multiple Model Schemes -- Probability and Topology -- Learning Dynamic Bayesian Networks from Multivariate Time Series with Changing Dependencies -- Topology and Intelligent Data Analysis -- Coherent Conditional Probability as a Measure of Information of the Relevant Conditioning Events -- Very Predictive Ngrams for Space-Limited Probabilistic Models -- Interval Estimation Naïve Bayes -- Mining Networks and Central Entities in Digital Libraries. A Graph Theoretic Approach Applied to Co-author Networks -- Classification and Pattern Recognition -- Learning Linear Classifiers Sensitive to Example Dependent and Noisy Costs -- An Effective Associative Memory for Pattern Recognition -- Similarity Based Classification -- Numerical Attributes in Decision Trees: A Hierarchical Approach -- Similarity-Based Neural Networks for Applications in Computational Molecular Biology -- Combining Pairwise Classifiers with Stacking -- APRIORI-SD: Adapting Association Rule Learning to Subgroup Discovery -- Solving Classification Problems Using Infix Form Genetic Programming -- Clustering -- What Is Fuzzy about Fuzzy Clustering? Understanding and Improving the Concept of the Fuzzifier -- A Mixture Model Approach for Binned Data Clustering -- Fuzzy Clustering Based Segmentation of Time-Series -- An Iterated Local Search Approach for Minimum Sum-of-Squares Clustering -- Data Clustering in Tolerance Space -- Refined Shared Nearest Neighbors Graph for Combining Multiple Data Clusterings -- Clustering Mobile Trajectories for Resource Allocation in Mobile Environments -- Fuzzy Clustering of Short Time-Series and Unevenly Distributed Sampling Points -- Combining and Comparing Cluster Methods in a Receptor Database -- Applications -- Selective Sampling with a Hierarchical Latent Variable Model -- Obtaining Quality Microarray Data via Image Reconstruction -- Large Scale Mining of Molecular Fragments with Wildcards -- Genome-Wide Prokaryotic Promoter Recognition Based on Sequence Alignment Kernel -- Towards Automated Electrocardiac Map Interpretation: An Intelligent Contouring Tool Based on Spatial Aggregation -- Study of Canada/US Dollar Exchange Rate Movements Using Recurrent Neural Network Model of FX-Market -- Gaussian Mixture Density Estimation Applied to Microarray Data -- Classification of Protein Localisation Patterns via Supervised Neural Network Learning -- Applying Intelligent Data Analysis to Coupling Relationships in Object-Oriented Software -- The Smaller the Better: Comparison of Two Approaches for Sales Rate Prediction -- Modeling -- A Multiagent-Based Constructive Approach for Feedforward Neural Networks -- Evolutionary System Identification via Descriptive Takagi Sugeno Fuzzy Systems -- Minimum Message Length Criterion for Second-Order Polynomial Model Selection Applied to Tropical Cyclone Intensity Forecasting -- On the Use of the GTM Algorithm for Mode Detection -- Regularization Methods for Additive Models -- Automated Detection of Influenza Epidemics with Hidden Markov Models -- Guided Incremental Construction of Belief Networks -- Distributed Regression for Heterogeneous Data Sets -- (Data) Preprocessing -- A Logical Formalisation of the Fellegi-Holt Method of Data Cleaning -- Compression Technique Preserving Correlations of a Multivariate Temporal Sequence -- Condensed Representations in Presence of Missing Values -- Measures of Rule Quality for Feature Selection in Text Categorization -- Genetic Approach to Constructive Induction Based on Non-algebraic Feature Representation -- Active Feature Selection Based on a Very Limited Number of Entities.

Sommario/riassunto

We are glad to present the proceedings of the 5th biennial conference in the Intelligent Data Analysis series. The conference took place in

Berlin, Germany, August 28–30, 2003. IDA has by now clearly grown up. Started as a small si- symposium of a larger conference in 1995 in Baden-Baden (Germany) it quickly attractedmoreinterest (bothsubmission-andattendance-wise),andmovedfrom London (1997) to Amsterdam (1999), and two years ago to Lisbon. Submission ratesalongwiththeeverimprovingqualityofpapershaveenabledtheor- nizers to assemble increasingly consistent and high-quality programs. This year we were again overwhelmed by yet another record-breaking submission rate of 180 papers. At the Program Chairs meeting we were – based on roughly 500 reviews – in the lucky position of carefully selecting 17 papers for oral and 42 for poster presentation. Poster presenters were given the opportunity to summarize their papers in 3-minute spotlight presentations. The oral, spotlight and poster presentations were then scheduled in a single-track, 2. 5-day conference program, summarized in this book. In accordance with the goal of IDA, “to bring together researchers from diverse disciplines,” we achieved a nice balance of presentations from the more theoreticalside (bothstatisticsandcomputerscience)aswellasmoreapplicati- oriented areas that illustrate how these techniques can be used in practice. Work presented in these proceedings ranges from theoretical contributions dealing, for example, with data cleaning and compression all the way to papers addressing practical problems in the areas of text classi?cation and sales-rate predictions. A considerable number of papers also center around the currently so popular applications in bioinformatics.