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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited Talks -- Data Analysis in the Life Sciences — Sparking Ideas — -- Machine Learning for Natural Language Processing (and Vice Versa?) -- Statistical Relational Learning: An Inductive Logic Programming Perspective -- Recent Advances in Mining Time Series Data -- Focus the Mining Beacon: Lessons and Challenges from the World of E-Commerce -- Data Streams and Data Synopses for Massive Data Sets (Invited Talk) -- Long Papers -- Clustering and Metaclustering with Nonnegative Matrix Decompositions -- A SAT-Based Version Space Algorithm for Acquiring Constraint Satisfaction Problems -- Estimation of Mixture Models Using Co-EM -- Nonrigid Embeddings for Dimensionality Reduction -- Multi-view Discriminative Sequential Learning -- Robust Bayesian Linear Classifier Ensembles -- An Integrated Approach to Learning Bayesian Networks of Rules -- Thwarting the Nigritude Ultramarine: Learning to Identify Link Spam -- Rotational Prior Knowledge for SVMs -- On the LearnAbility of

Abstraction Theories from Observations for Relational Learning -- Beware the Null Hypothesis: Critical Value Tables for Evaluating Classifiers -- Kernel Basis Pursuit -- Hybrid Algorithms with Instance-Based Classification -- Learning and Classifying Under Hard Budgets -- Training Support Vector Machines with Multiple Equality Constraints -- A Model Based Method for Automatic Facial Expression Recognition -- Margin-Sparsity Trade-Off for the Set Covering Machine -- Learning from Positive and Unlabeled Examples with Different Data Distributions -- Towards Finite-Sample Convergence of Direct Reinforcement Learning -- Infinite Ensemble Learning with Support Vector Machines -- A Kernel Between Unordered Sets of Data: The Gaussian Mixture Approach -- Active Learning for Probability Estimation Using Jensen-Shannon Divergence -- Natural Actor-Critic -- Inducing Head-Driven PCFGs with Latent Heads: Refining a Tree-Bank Grammar for Parsing -- Learning (k,l)-Contextual Tree Languages for Information Extraction -- Neural Fitted Q Iteration – First Experiences with a Data Efficient Neural Reinforcement Learning Method -- MCMC Learning of Bayesian Network Models by Markov Blanket Decomposition -- On Discriminative Joint Density Modeling -- Model-Based Online Learning of POMDPs -- Simple Test Strategies for Cost-Sensitive Decision Trees -- -Likelihood and -Updating Algorithms: Statistical Inference in Latent Variable Models -- An Optimal Best-First Search Algorithm for Solving Infinite Horizon DEC-POMDPs -- Ensemble Learning with Supervised Kernels -- Using Advice to Transfer Knowledge Acquired in One Reinforcement Learning Task to Another -- A Distance-Based Approach for Action Recommendation -- Multi-armed Bandit Algorithms and Empirical Evaluation -- Annealed Discriminant Analysis -- Network Game and Boosting -- Model Selection in Omnivariate Decision Trees -- Bayesian Network Learning with Abstraction Hierarchies and Context-Specific Independence -- Short Papers -- Learning to Complete Sentences -- The Huller: A Simple and EfficientOnline SVM -- Inducing Hidden Markov Models to Model Long-Term Dependencies -- A Similar Fragments Merging Approach to Learn Automata on Proteins -- Nonnegative Lagrangian Relaxation of K-Means and Spectral Clustering -- Severe Class Imbalance: Why Better Algorithms Aren't the Answer -- Approximation Algorithms for Minimizing Empirical Error by Axis-Parallel Hyperplanes -- A Comparison of Approaches for Learning Probability Trees -- Counting Positives Accurately Despite Inaccurate Classification -- Optimal Stopping and Constraints for Diffusion Models of Signals with Discontinuities -- An Evolutionary Function Approximation Approach to Compute Prediction in XCSF -- Using Rewards for Belief State Updates in Partially Observable Markov Decision Processes -- Active Learning in Partially Observable Markov Decision Processes -- Machine Learning of Plan Robustness Knowledge About Instances -- Two Contributions of Constraint Programming to Machine Learning -- A Clustering Model Based on Matrix Approximation with Applications to Cluster System Log Files -- Detecting Fraud in Health Insurance Data: Learning to Model Incomplete Benford's Law Distributions -- Efficient Case Based Feature Construction -- Fitting the Smallest Enclosing Bregman Ball -- Similarity-Based Alignment and Generalization -- Fast Non-negative Dimensionality Reduction for Protein Fold Recognition -- Mode Directed Path Finding -- Classification with Maximum Entropy Modeling of Predictive Association Rules -- Classification of Ordinal Data Using Neural Networks -- Independent Subspace Analysis on Innovations -- On Applying Tabling to Inductive Logic Programming -- Learning Models of Relational Stochastic Processes -- Error-Sensitive Grading for Model Combination -- Strategy Learning for Reasoning Agents --

Combining Bias and Variance Reduction Techniques for Regression Trees -- Analysis of Generic Perceptron-Like Large Margin Classifiers -- Multimodal Function Optimizing by a New Hybrid Nonlinear Simplex Search and Particle Swarm Algorithm.

Sommario/riassunto

The European Conference on Machine Learning (ECML) and the European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD) were jointly organized this year for the ? fth time in a row, after some years of mutual independence before. After Freiburg (2001), Helsinki (2002), Cavtat (2003) and Pisa (2004), Porto received the 16th edition of ECML and the 9th PKDD in October 3–7. Having the two conferences together seems to be working well: 585 di?erent paper submissions were received for both events, which maintains the high s- mission standard of last year. Of these, 335 were submitted to ECML only, 220 to PKDD only and 30 to both. Such a high volume of scienti?c work required a tremendous e?ort from Area Chairs, Program Committee members and some additional reviewers. On average, PC members had 10 papers to evaluate, and Area Chairs had 25 papers to decide upon. We managed to have 3 highly qua- ? edindependentreviewsperpaper(withveryfewexceptions) andoneadditional overall input from one of the Area Chairs. After the authors' responses and the online discussions for many of the papers, we arrived at the ?nal selection of 40 regular papers for ECML and 35 for PKDD. Besides these, 32 others were accepted as short papers for ECML and 35 for PKDD. This represents a joint acceptance rate of around 13% for regular papers and 25% overall. We thank all involved for all the e?ort with reviewing and selection of papers. Besidesthecoretechnicalprogram,ECMLandPKDDhad6invitedspeakers, 10 workshops, 8 tutorials and a Knowledge Discovery Challenge.