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Nota di contenuto	Intro -- Preface -- Organization -- Abstracts of Invited Talks -- Towards Declarative, Domain-OrientedData Analysis -- Sum-Product Networks: Deep Modelswith Tractable Inference -- Mining Online Networks and Communities -- Learning to Acquire Knowledge in a SmartGrid Environment -- Untangling the Web's Invisible Net -- Towards a Digital Time Machine Fueled by BigData and Social Mining -- Abstracts of Journal Track Articles -- Contents - Part I -- Contents - Part II -- Contents - Part III -- Research Track Classification, Regression and Supervised Learning -- Data Split Strategiesfor Evolving Predictive Models -- 1 Introduction -- 2 Data Splits for Model Fitting, Selection,and Assessment -- 3 Issues with Evolving Models -- 4 Data Splits for Evolving Models -- 4.1 Parallel Dump Workflow -- 4.2 Serial Waterfall Workflow -- 4.3 Hybrid Workflow -- 5 Bias Due to Test Set Reuse -- 6 Illustration on Synthetic Data -- 7 Case Study: Paraphrase Detection -- 8 Related Work -- 9 Conclusions -- A Appendix: Bias Due to Test Set Reuse -- References -- Discriminative Interpolation for Classification of Functional Data -- 1 Introduction -- 2 Function Representations and Wavelets -- 3 Related Work -- 4 Classification by Discriminative Interpolation -- 4.1 Training Formulation -- 4.2 Testing Formulation -- 5 Experiments -- 6 Conclusion -- References -- Fast Label Embeddings via Randomized Linear Algebra -- 1 Introduction -- 1.1 Contributions -- 2 Algorithm Derivation -- 2.1 Notation -- 2.2 Background -- 2.3 Rank-Constrained Estimation and Embedding -- 2.4 Rembrandt -- 3 Related Work -- 4 Experiments -- 4.1 ALOI -- 4.2 ODP -- 4.3 LSHTC -- 5 Discussion -- References -- Maximum Entropy Linear Manifold for Learning Discriminative Low-Dimensional Representation -- 1 Introduction -- 2 General Idea -- 3 Theory -- 4 Closed form Solution for Objective and its Gradient. 5 Experiments -- 6 Conclusions -- References -- Novel Decompositions of Proper Scoring Rules for Classification: Score Adjustment as Precursor to Calibration -- 1 Introduction -- 2 Proper Scoring Rules -- 2.1 Scoring Rules -- 2.2 Divergence, Entropy and Properness -- 2.3 Expected Loss and Empirical Loss -- 3 Decompositions with Ideal Scores and Calibrated Scores -- 3.1 Ideal Scores Q and the Decomposition L=EL+IL -- 3.2 Calibrated Scores C and the Decomposition L=CL+RL -- 4 Adjusted Scores A and the Decomposition L=AL+PL -- 4.1 Adjustment -- 4.2 The Right Adjustment Procedure Guarantees Decreased Loss -- 5 Decomposition Theorems and Terminology -- 5.1 Decompositions with S,C,Q,Y -- 5.2 Decompositions with S,A,C,Q,Y and Terminology -- 6 Algorithms and Experiments -- 7 Related Work -- 8 Conclusions -- References -- Parameter Learning of Bayesian Network Classifiers Under Computational Constraints -- 1 Introduction -- 2 Related Work -- 3 Background and Notation -- 4 Algorithms for Online Learning of Reduced-Precision Parameters -- 4.1 Learning Maximum Likelihood Parameters -- 4.2 Learning Maximum Margin Parameters -- 5 Experiments -- 5.1 Datasets -- 5.2 Results -- 6 Discussions -- References -- Predicting Unseen Labels Using Label Hierarchies in Large-Scale Multi-label Learning -- 1 Introduction -- 2 Multi-label Classification -- 3 Model Description -- 3.1 Joint Space Embeddings -- 3.2 Learning with Hierarchical Structures Over Labels -- 3.3 Efficient

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1 Introduction.

Sommario/riassunto

The three volume set LNAI 9284, 9285, and 9286 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2015, held in Porto, Portugal, in September 2015. The 131 papers presented in these proceedings were carefully reviewed and selected from a total of 483 submissions. These include 89 research papers, 11 industrial papers, 14 nectar papers, and 17 demo papers. They were organized in topical sections named: classification, regression and supervised learning; clustering and unsupervised learning; data preprocessing; data streams and online learning; deep learning; distance and metric learning; large scale learning and big data; matrix and tensor analysis; pattern and sequence mining; preference learning and label ranking; probabilistic, statistical, and graphical approaches; rich data; and social and graphs. Part III is structured in industrial track, nectar track, and demo track.