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Machine Learning: ECML 2006

17th European Conference on Machine Learning
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Proceedings



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Lecture Notes in Artificial Intelligence

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Preface

The two premier annual European conferences in the areas of Machine Learning and Data Mining have been collocated ever since the joint conference in Freiburg, Germany, 2001. The European Conference on Machine Learning was established 20 years ago, when the first European Working Session on Learning was held in Orsay, France, in 1986. The conference is growing, and is more lively than ever. The European Conference on Principles and Practice of Knowledge Discovery in Databases celebrated its tenth anniversary; the first PKDD took place in 1997 in Trondheim, Norway. Over the years, the ECML/PKDD series has evolved into one of the largest and most selective international conferences in these areas, the only one that provides a common forum for the two closely related fields. In 2006, the 6th collocated ECML/PKDD took place during September 18-22, when the Humboldt-Universität zu Berlin hosted the 17th European Conference on Machine Learning (ECML) and the 10th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD).

The successful model of a hierarchical reviewing process that was introduced last year for the ECML/PKDD 2005 in Porto was taken over in 2006. We have nominated 32 Area Chairs, each of them responsible for several closely related research topics. Suitable areas were selected on the basis of the submission statistics for ECML/PKDD 2005 to ensure a proper load balance among the area chairs. For the first time, a joint Program Committee was nominated for the two conferences, consisting of 280 renowned researchers, mostly proposed by the Area Chairs. This joint PC, the largest of the series to date, allowed us to exploit synergies and deal competently with topic overlaps between ECML and PKDD.

ECML/PKDD 2006 received 564 full paper submissions that entered the reviewing process. The submissions were manually assigned to the Area Chairs, who coordinated the reviewers thereafter. Reviewer assignment was based on bidding with CyberChairPRO, as in the previous years. With very few exceptions, every submission was reviewed by three PC members. Based on these reviews, on feedback from the authors, and on discussions among the reviewers, the Area Chairs provided a recommendation for each paper. Continuing the tradition of previous events in the series, we accepted full papers for oral presentation and short papers for poster presentation. The final decision was made by us based on the recommendations of the area chairs. We selected 46 full papers and 36 short papers for ECML, and 36 full papers and 26 short papers for PKDD. The acceptance rate for full papers is 14.5% and the overall acceptance rate is 25.5%, in accordance with the high-quality standards of the conference series. Next to the paper and poster sessions, ECML/PKDD 2006 also featured five invited talks, ten workshops, seven tutorials and the ECML/PKDD discovery challenge.

We distinguished eight outstanding contributions; the awards were generously sponsored by the *Machine Learning Journal* and the *KD-Ubiq network*.

- ECML Best Paper:* Quoc Le, Alex Smola, Thomas Gärtner, Yasemin Altun: *Transductive Gaussian Process Regression with Automatic Model Selection.*
- PKDD Best Paper:* Pauli Miettinen, Taneli Mielikäinen, Aristides Gionis, Gautam Das, Heikki Mannila: *The Discrete Basis Problem.*
- ECML Best Student Paper:* Bernd Gutmann and Kristian Kersting: *TildeCRF. Conditional Random Fields for Logical Sequences.*
- PKDD Best Student Paper:* Arik Friedmann, Assaf Schuster, Ran Wolff: *k-Anonymous Decision Tree Induction.*
- ECML Innovative Contribution:* Alexander Clark, Christophe Costa Florencio, Chris Watkins: *Languages as Hyperplanes: Grammatical Inference with String Kernels.*
- PKDD Innovative Application:* Herna Viktor, Eric Paquet, Hongyu Guo: *Measuring to Fit: Virtual Tailoring Through Cluster Analysis and Classification.*

The *ECML/PKDD Best Presentation* and the *ECML/PKDD Best Poster Presentation* awards were elected by participants of the conference.

This year's *Discovery Challenge* focused on personalized spam filtering and generalization across related learning tasks. Steffen Bickel organized the challenge; 26 teams participated. For task A, three teams achieved a first rank: Khurram Nazir Junejo, Mirza Muhammad Yousaf, and Asim Karim; Bernhard Pfahringer; and Kushagra Gupta, Vikrant Chaudhary, Nikhil Marwah, and Chirag Taneja. Task B was won by Gordon Cormack. The solution of Bernhard Pfahringer was distinguished with the Creativity Award.

We are indebted to the Area Chairs, Program Committee members and external reviewers for their effort and engagement in making a rich but selective scientific program for ECML/PKDD. Special thanks go to those reviewers who helped with additional reviews at very short notice to assist us at difficult decisions. We further thank our two workshop and tutorial chairs Tapio Elomaa and Bart Goethals for selecting and coordinating the ten workshop and seven tutorial events that accompany the conference; the workshop organizers, tutorial presenters, and the organizers of the discovery challenge; Richard van de Stadt and CyberChairPRO for competent and flexible support; the local Organizing Committee; and all other people that contributed to the organization of this event. Finally, we are grateful to the the Steering Committee and the ECML/PKDD community that entrusted us with the organization of ECML/PKDD 2006.

Most of all, however, we would like to thank all the authors who honored us by submitting their work to this conference, thereby facilitating the success of this event.

Berlin, September 2006

Johannes Fürnkranz
Tobias Scheffer
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We wish to express our gratitude to our sponsors for their great contributions to the conference. We wish to thank Google for featuring the Google ECML Poster Reception and providing ten Student Travel Awards; the Humboldt-Universität zu Berlin for providing the conference venue; the German Science Foundation DFG for supporting all invited speakers; KD-Ubiq for supporting the PKDD Poster Reception and European Projects Poster Reception, four Student Travel Awards, and the Best Paper Awards; the European Office of Aerospace Research and Development (EOARD), Air Force Office of Scientific Research, United States Air Force Research Laboratory for generous financial support; Strato AG for providing the awards to the winners of the Discovery Challenge; the Pascal Network of Excellence and IBM for financial support; the *Machine Learning Journal* for supporting the Student Best Paper Awards.

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