

# Preface

This volume contains papers presented at the 17th Annual Conference on Learning Theory (previously known as the Conference on Computational Learning Theory) held in Banff, Canada from July 1 to 4, 2004.

The technical program contained 43 papers selected from 107 submissions, 3 open problems selected from among 6 contributed, and 3 invited lectures. The invited lectures were given by Michael Kearns on ‘Game Theory, Automated Trading and Social Networks’, Moses Charikar on ‘Algorithmic Aspects of Finite Metric Spaces’, and Stephen Boyd on ‘Convex Optimization, Semidefinite Programming, and Recent Applications’. These papers were not included in this volume.

The Mark Fulk Award is presented annually for the best paper co-authored by a student. This year the Mark Fulk award was supplemented with two further awards funded by the Machine Learning Journal and the National Information Communication Technology Centre, Australia (NICTA). We were therefore able to select three student papers for prizes. The students selected were Magalie Fromont for the single-author paper “Model Selection by Bootstrap Penalization for Classification”, Daniel Reidenbach for the single-author paper “On the Learnability of E-Pattern Languages over Small Alphabets”, and Ran Gilad-Bachrach for the paper “Bayes and Tukey Meet at the Center Point” (co-authored with Amir Navot and Naftali Tishby).

This year saw an exceptional number of papers submitted to COLT covering a wider range of topics than has previously been the norm. This exciting expansion of learning theory analysis to new models and tasks marks an important development in the growth of the area as well as in the linking with practical applications. The large number of quality submissions placed a heavy burden on the program committee of the conference: Shai Ben-David (Cornell University), Stephane Boucheron (Université Paris-Sud), Olivier Bousquet (Max Planck Institute), Sanjoy Dasgupta (University of California, San Diego), Victor Dalmau (Universitat Pompeu Fabra), Andre Elisseeff (IBM Zurich Research Lab), Thore Graepel (Microsoft Research Labs, Cambridge), Peter Grunwald (CWI, Amsterdam), Michael Jordan (University of California, Berkeley), Adam Kalai (Toyota Technological Institute), David McAllester (Toyota Technological Institute), Manfred Opper (University of Southampton), Alon Orlitsky (University of California, San Diego), Rob Schapire (Princeton University), Matthias Seeger (University of California, Berkeley), Satinder Singh (University of Michigan), Eiji Takimoto (Tohoku University), Nicolas Vayatis (Université Paris 6), Bin Yu (University of California, Berkeley) and Thomas Zeugmann (University at Lübeck). We are extremely grateful for their careful and thorough reviewing and for the detailed discussions that ensured the very high quality of the final program. We would like to have mentioned the subreviewers who assisted the program committee in reaching their assessments, but unfortunately space con-

straints do not permit us to include this long list of names and we must simply ask them to accept our thanks anonymously.

We particularly thank Rob Holte and Dale Schuurmans, the conference local chairs, as well as the registration chair Kiri Wagstaff. Together they handled the conference publicity and all the local arrangements to ensure a successful event. We would also like to thank Microsoft for providing the software used in the program committee deliberations, and Ofer Dekel for maintaining this software and the conference Web site. Bob Williamson and Jyrki Kivinen assisted the organization of the conference in their role as consecutive Presidents of the Association of Computational Learning, and heads of the COLT Steering Committee. We would also like to thank the ICML organizers for ensuring a smooth co-location of the two conferences and arranging for a ‘kernel day’ at the overlap on July 4. The papers appearing as part of this event comprise the last set of 8 full-length papers in this volume.

Finally, we would like to thank the Machine Learning Journal, the Pacific Institute for the Mathematical Sciences (PIMS), INTEL, SUN, the Informatics Circle of Research Excellence (iCORE), and the National Information Communication Technology Centre, Australia (NICTA) for their sponsorship of the conference. This work was also supported in part by the IST Programme of the European Community, under the PASCAL Network of Excellence, IST-2002-506778.

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