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Preface

This volume contains papers presented at the 19th International Conference on Algorithmic Learning Theory (ALT 2008), which was held in Budapest, Hungary during October 13–16, 2008. The conference was co-located with the 11th International Conference on Discovery Science (DS 2008). The technical program of ALT 2008 contained 31 papers selected from 46 submissions, and 5 invited talks. The invited talks were presented in joint sessions of both conferences.

ALT 2008 was the 19th in the ALT conference series, established in Japan in 1990. The series Analogical and Inductive Inference is a predecessor of this series: it was held in 1986, 1989 and 1992, co-located with ALT in 1994, and subsequently merged with ALT. ALT maintains its strong connections to Japan, but has also been held in other countries, such as Australia, Germany, Italy, Singapore, Spain and the USA. The ALT conference series is supervised by its Steering Committee: Naoki Abe (IBM T.J. Watson Research Center, Yorktown, USA), Shai Ben-David (University of Waterloo, Canada), Yoav Freund (University of San Diego, USA), Steffen Lange (Publicity Chair) (FH Darmstadt, Germany), Phil Long (Google, Mountain View, USA), Akira Maruoka (Ishinomaki Senshu University, Japan), Takeshi Shinonhara (Kyushu Institute of Technology, Iizuka, Japan), Frank Stephan (National University of Singapore, Republic of Singapore), Einoshin Suzuki (Kyushu University, Fukuoka, Japan), György Turán (University of Illinois at Chicago, USA and University of Szeged, Hungary), Eiji Takimoto (Tohoku University, Japan) Osamu Watanabe (Tokyo University of Technology, Japan) and Thomas Zeugmann (Hokkaido University, Japan; Chair). The ALT Web pages and submission system have been set up (together with Frank Balbach and Jan Poland) and are maintained by Thomas Zeugmann.

The history of conferences in Hungary discussing machine learning goes back, at least, to 1962. The *Proceedings of the Colloquium on the Foundations of Mathematics, Mathematical Machines and Their Applications* (held in Tihany, Hungary during September 11–15, 1962), edited by László Kalmár and published by Akadémiai Kiadó in 1965, contains a paper by S. Watanabe on 'A Mathematical Explication of Inductive Inference,' and has a section on artificial intelligence and machine learning, containing a paper by V. M. Glushkov and A. A. Stogny 'On a Self-Teaching Algorithmic System.'

The present volume contains the texts of the 31 papers presented at ALT 2008, divided into groups of papers on statistical learning, probability and stochastic processes, boosting and experts, active and query learning and inductive inference. The volume also contains abstracts of the invited talks:

- Imre Csiszár (Hungarian Academy of Sciences, Budapest, Hungary): *On Iterative Algorithms with an Information Geometry Background*
- Daniel Keim (Universität Konstanz, Germany): *Visual Analytics: Combining Automated Discovery with Interactive Visualizations*

- László Lovász (Eötvös Loránd University, Budapest, Hungary): *Some Mathematics Behind Graph Property Testing*
- Heikki Mannila (HIIT, Helsinki University of Technology and University of Helsinki, Finland): *Finding Total and Partial Orders from Data for Seriation*
- Tom Mitchell (Carnegie Mellon University, Pittsburgh, PA, USA): *Computational Models of Neural Representations in the Human Brain*

Papers presented at DS 2008 are contained in the DS 2008 proceedings.

The *E. Mark Gold* Award is presented annually at the ALT conferences since 1999, for the most outstanding student contribution. This year, the award was given to Mikhail Dashevskiy for his paper "Aggregating Algorithm for a Space of Analytic Functions."

We would like to thank the many people and institutions who contributed to the success of the conference. Thanks to the authors of the papers for their submissions, and to the invited speakers for presenting exciting overviews of important recent research developments. We are very grateful to the sponsors of the conference: Aegon Hungary, Fraunhofer IAIS (Sankt Augustin, Germany), Hokkaido University, the Institute of Informatics of the University of Szeged (Hungary), Kyushu University and Tohoku University for their generous financial support.

We are grateful to the members of the Program Committee of ALT 2008. Their hard work in reviewing and discussing the papers made sure that we had an interesting and strong program. We also thank the subreferees assisting the Program Committee. Special thanks go to Local Chair János Csirik (University of Szeged, Hungary), and to Gusztáv Hencsey (Scope Meetings Ltd., Budapest) for the local organization of the conference. We are also grateful to Akira Ishino and Ayumi Shinohara from Tohoku University for their support in preparing ALT/DS 2008. Furthermore, we heartily thank Einoshin Suzuki from Kyushu University for his effort of making travel arrangements for the invited and tutorial speakers. We would like to thank the Discovery Science conference for its ongoing collaboration with ALT, which makes it possible to provide a well-rounded picture of the current theoretical and practical advances in machine learning and the related areas. In particular, we are grateful to Conference Chair Tamás Horváth (University of Bonn and Fraunhofer IAIS, Sankt Augustin, Germany) and Program Committee Chairs Jean-François Boulicaut (INSA Lyon, France) and Michael Berthold (Universität Konstanz, Germany) for their cooperation. Last but not least, we thank Springer for their excellent support in preparing and publishing this volume of the *Lecture Notes in Artificial Intelligence* series.

August 2008

Yoav Freund
László Györfi
György Turán
Thomas Zeugmann

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Erratum

Hutter, M., Servedio, R.A., Takimoto, E. (Eds.) ALT 2007. LNCS (LNAI), vol. 4754. Springer, Heidelberg (2007)

By mistake the following text was not included in the frontmatter of the ALT 2007 proceedings volume LNAI 4754.

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