Preface

This volume contains the papers presented at the 6th International Conference on Discovery Science (DS 2003) held at Hokkaido University, Sapporo, Japan, during 17–19 October 2003.

The main objective of the discovery science (DS) conference series is to provide an open forum for intensive discussions and the exchange of new information among researchers working in the area of discovery science. It has become a good custom over the years that the DS conference is held in parallel with the International Conference on Algorithmic Learning Theory (ALT). This combination of ALT and DS allows for a comprehensive treatment of the whole range, from theoretical investigations to practical applications. Continuing the good tradition, DS 2003 was co-located with the 14th ALT conference (ALT 2003). The proceedings of ALT 2003 were published as a twin volume 2842 of the LNAI series.

The DS conference series has been supervised by the international steering committee chaired by Hiroshi Motoda (Osaka University, Japan). The other members are Alberto Apostolico (Univ. of Padova, Italy and Purdue University, USA), Setsuo Arikawa (Kyushu University, Japan), Achim Hoffmann (UNSW, Australia), Klaus P. Jantke (DFKI, Germany), Masahiko Sato (Kyoto University, Japan), Ayumi Shinohara (Kyushu University, Japan), Carl H. Smith (University of Maryland, USA), and Thomas Zeugmann (University of Lübeck, Germany).

We received 80 submissions, out of which 18 long and 29 short papers were selected by the program committee, based on clarity, significance, and originality, as well as on relevance to the field of discovery science. The DS 2003 conference had two paper categories, long and short papers. Long papers were presented as 25-minute talks, while short papers were presented as 5-minute talks accompanied by poster presentations. Due to the limited time of the conference, some long submissions could only be accepted as short papers. Some authors of those papers decided not to submit final versions or to just publish abstracts of their papers.

This volume consists of three parts. The first part contains the invited talks of ALT 2003 and DS 2003. These talks were given by Thomas Eiter (Technische Universität Wien, Austria), Genshiro Kitagawa (The Institute of Statistical Mathematics, Japan), Akihiko Takano (National Institute of Informatics, Japan), Naftali Tishby (The Hebrew University, Israel), and Thomas Zeugmann (University of Lübeck, Germany). Because the invited talks were shared by the DS 2003 and ALT 2003 conferences, this volume contains the full versions of Thomas Eiter’s, Genshiro Kitagawa’s, and Akihiko Takano’s talks, as well as abstracts of the talks by the others. The second part of this volume contains the accepted long papers, and the third part contains the accepted short papers.
We would like to express our gratitude to our program committee members and their subreferees who did great jobs in reviewing and evaluating the submissions, and who made the final decisions through intensive discussions to ensure the high quality of the conference. Furthermore, we thank everyone who led this conference to a great success: the authors for submitting papers, the invited speakers for accepting our invitations and giving stimulating talks, the steering committee and the sponsors for their support, the ALT Chairpersons Klaus P. Jantke, Ricard Gavalda, and Eiji Takimoto for their collaboration, and, last but not least, Makoto Haraguchi and Yoshiaki Okubo (both Hokkaido University, Japan) for their local arrangement of the twin conferences.

October 2003

Gunter Grieser
Yuzuru Tanaka
Akihiro Yamamoto
Organization

Conference Chair

Yuzuru Tanaka  Hokkaido University, Japan

Program Committee

Gunter Grieser (Co-chair)  Technical University, Darmstadt, Germany
Akihiro Yamamoto (Co-chair)  Hokkaido University, Japan
Simon Colton  Imperial College London, UK
Vincent Corruble  Université P. et M. Curie Paris, France
Johannes Fünkranz  Research Institute for AI, Austria
Achim Hoffmann  University of New South Wales, Australia
Naresh Iyer  GE Global Research Center, USA
John R. Josephson  Ohio State University, USA
Eamonn Keogh  University of California, USA
Mineichi Kudo  Hokkaido University, Japan
Nicolas Lachiche  University of Strasbourg, France
Steffen Lange  DFKI GmbH, Germany
Lorenzo Magnani  University of Pavia, Italy
Michael May  Fraunhofer AIS, Germany
Hiroshi Motoda  Osaka University, Japan
Nancy J. Nersessian  Georgia Institute of Technology, USA
Vladimir Pericleiv  Academy of Sciences, Sofia, Bulgaria
Jan Rauch  University of Economics, Prague, Czech Republic
Henk W. de Regt  Free University Amsterdam, The Netherlands
Ken Satoh  National Institute of Informatics, Japan
Tobias Scheffer  Humboldt University, Berlin, Germany
Einoshin Suzuki  Yokohama National University, Japan
Masayuki Takeda  Kyushu University, Japan
Ljupčo Todorovski  Jožef Stefan Institute, Ljubljana, Slovenia
Gerhard Widmer  University of Vienna, Austria

Local Arrangements

Makoto Haraguchi (Chair)  Hokkaido University, Japan
Yoshiaki Okubo  Hokkaido University, Japan
VIII Organization

Subreferees

Hideo Bannai
Rens Bod
Marco Chiarandini
Nigel Collier
Pascal Divoux
Thomas Gärtner
Peter Grigoriev
Makoto Haraguchi
Katsutoshi Hirayama
Akira Ishino
Takayuki Ito
Ai Kawazoe
Nikolay Kirov
Edda Leopold

Tsuyoshi Murata
Atsuyoshi Nakamura
Luis F. Paquete
Lourdes Peña Castillo
Johann Petrak
Detlef Prescher
Ehud Reither
Alexandr Savinov
Tommaso Schiavinotto
Alexander K. Seewald
Esko Ukkonen
Serhiy Yevtushenko
Kenichi Yoshida
Sandra Zilles

Sponsors

Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT)
The Suginome Memorial Foundation, Japan