

Preface

This volume contains the papers presented at the 5th International Conference on Discovery Science (DS 2002) held at the Mövenpick Hotel, Lübeck, Germany, November 24–26, 2002. The conference was supported by CorpoBase, DFKI GmbH, and JessenLenz.

The conference was collocated with the 13th International Conference on Algorithmic Learning Theory (ALT 2002). Both conferences were held in parallel and shared five invited talks as well as all social events. The combination of ALT 2002 and DS 2002 allowed for a comprehensive treatment of recent developments in computational learning theory and machine learning – some of the cornerstones of discovery science.

In response to the call for papers 76 submissions were received. The program committee selected 17 submissions as regular papers and 29 submissions as poster presentations of which 27 have been submitted for publication. This selection was based on clarity, significance, and originality, as well as on relevance to the rapidly evolving field of discovery science.

The conference provided an open forum for intensive discussions and interchange of new information among researchers working in the new area of discovery science. The conference focused on the following areas related to discovery: logic for/of knowledge discovery; knowledge discovery by inferences, learning algorithms, and heuristic search; scientific discovery; knowledge discovery in databases; data mining; knowledge discovery in network environments; active mining; inductive logic programming; abductive reasoning; machine learning; constructive programming as discovery; intelligent network agents; knowledge discovery from texts and from unstructured and multimedia data; statistical methods and neural networks for knowledge discovery; data and knowledge visualization; knowledge discovery and human interaction; human factors in knowledge discovery; philosophy and psychology of discovery; chance discovery; and application of knowledge discovery to natural science and social science. The proceedings contain papers from a variety of the above areas, reflecting both the theoretical and the practical aspects of discovery science.

This year's conference was the fifth in a series of annual conferences established in 1998. Continuation of this process is supervised by the DS steering committee consisting of Setsuo Arikawa (Chair, Kyushu Univ., Japan), Klaus P. Jantke (DFKI GmbH, Germany), Masahiko Sato (Kyoto Univ., Japan), Ayumi Shinohara (Kyushu Univ., Japan), Carl H. Smith (Univ. Maryland, USA), and Thomas Zeugmann (Univ. Lübeck, Germany).

This volume consists of three parts. The first part contains the invited talks of ALT 2002 and DS 2002. The invited talks were given by Susumu Hayashi (Kobe Univ., Japan), Rudolf Kruse (Tech. Univ. Magdeburg, Germany), John Shawe-Taylor (Royal Holloway, Univ. London, UK), Gerhard Widmer (Austrian Research Inst. for AI, Austria), and Jan Witten (Univ. Waikato, New Zealand).

Since the invited talks were for both conferences, this volume contains the full versions of Rudolf Kruse's and Gerhard Widmer's talk as well as the abstracts of the others. The second part contains the accepted regular papers and the third part contains the written versions of the posters accepted for presentation during the conference.

We would like to thank all individuals and institutions who contributed to the success of the conference: the authors of submitted papers, the invited speakers, the sponsors, and Springer-Verlag.

We are particularly grateful to the members of the program committee for spending their valuable time reviewing and evaluating the submissions and for participating in online discussions, ensuring that the presentations at the conference were of high technical quality. We are also grateful to the external additional referees for their considerable contribution to this process.

Last, but not least, we would like to express our immense gratitude to Andreas Jacoby (Univ. Lübeck, Germany) and Thomas Zeugmann (Univ. Lübeck, Germany) who did a remarkable job as local arrangement chairs for both conferences.

November 2002

Steffen Lange
Ken Satoh
Carl H. Smith

Organization

Conference Chair

Carl H. Smith

University of Maryland, USA

Program Committee

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DFKI GmbH, Germany

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NEC Co. Ltd., Japan

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Tamas Horvath

Stephan Baumann

Hitoshi Iba

Michael Boronowsky

Ryutaro Ichise

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Markus Junker

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Shaomin Wu
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Masayuki Yamamura
Thomas Zeugmann
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Local Arrangements

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Thomas Zeugmann

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