Lecture Notes in Artificial Intelligence 2174

Subseries of Lecture Notes in Computer Science
Edited by J. G. Carbonell and J. Siekmann

Lecture Notes in Computer Science
Edited by G. Goos, J. Hartmanis, and J. van Leeuwen

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KI 2001: Advances in Artificial Intelligence

Joint German/Austrian Conference on AI
Vienna, Austria, September 19-21, 2001
Proceedings

Springer

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Cataloging-in-Publication Data applied for

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Advances in artificial intelligence : proceedings / KI 2001, Joint German Austrian Conference on AI, Vienna, Austria, September 19 - 21, 2001. Franz Baader ... (ed.). - Berlin ; Heidelberg ; New York ; Barcelona ; Hong Kong ; London ; Milan ; Paris ; Tokyo : Springer, 2001
(Lecture notes in computer science ; 2174 : Lecture notes in artificial intelligence)
ISBN 3-540-42612-4

CR Subject Classification (1998): I.2

ISBN 3-540-42612-4 Springer-Verlag Berlin Heidelberg New York

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Springer-Verlag Berlin Heidelberg New York
a member of BertelsmannSpringer Science+Business Media GmbH

http://www.springer.de

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by PTP-Berlin, Stefan Sossna
Printed on acid-free paper SPIN: 10840436 06/3142 5 4 3 2 1 0

Preface

This volume contains the contributions to the Joint German/Austrian Conference on Artificial Intelligence, KI 2001, which comprises the 24th German and the 9th Austrian Conference on Artificial Intelligence. They are divided into the following categories:

- 2 contributions by invited speakers of the conference;
- 29 accepted technical papers, of which 5 where submitted as application papers and 24 as papers on foundations of AI;
- 4 contributions by participants of the industrial day, during which companies working in the field presented their AI applications.

After a long period of separate meetings, the German and Austrian Societies for Artificial Intelligence, KI and ÖGAI, decided to hold a joint conference in Vienna in 2001. The two societies had previously held one joint conference. This took place in Ottstein, a small town in Lower Austria, in 1986. At that time, the rise of expert system technology had also renewed interest in AI in general, with quite some expectations for future advances regarding the use of AI techniques in applications pervading many areas of our daily life. Since then fifteen years have passed, and we may want to comment, at the beginning of a new century, on the progress that has been made in this direction. Although significant advances in AI research and technology have been made within this period, we are still far from having reached visionary goals such as, for example, the capabilities of HAL, the super computer, in Stanley Kubrick's famous film "2001: A Space Odyssey," let alone Spielberg's interpretation of Kubrick's more recent expectations regarding the future of AI. In this respect, AI is not yet as good as Pinoccio's blue fairy, but easier to find: just go to the annual KI conferences.

The goal of this joint conference was to bring together AI researchers working in academia and in companies, and let them present and discuss their latest research results, both on theoretical foundations as well as on applications; these are the two legs any healthy field needs to stand upon. As we can see from the contributions to this conference, AI appears to be in good shape in this respect. In particular, during the *Industrial Day* of KI 2001, we could observe a number of exciting industrial applications of AI techniques in areas as diverse as configuration, elevator control, supply chain management, and speech recognition. These applications – and many others the general public and sometimes even AI researchers are less aware of – confirm the fact that AI technology has made its way silently into numerous applications (and will certainly continue to do so). In the emerging information society, AI techniques will play a key role for intelligent systems that remain to be built (such as really intelligent search interfaces for the Web). In this respect, the research presented at the conference is encouraging, and makes us confident about the future prospects for and developments in the area.

Following the trend of recent German Conferences on AI, this conference turned out to be not just a local event for AI researchers from Germany and Austria, but an international conference that is of interest to researchers from all over the world. This was reflected in 79 submissions from a total of 22 countries: Algeria, Australia, Austria, China, Cyprus, Finland, France, Germany, Greece, Iran, Israel, Japan, Lithuania, Romania, Slovakia, Spain, Sweden, Switzerland, Taiwan, The Netherlands, UK, and the USA. Of these submissions, 15 were submitted as application papers and 64 as papers on foundations of AI. Of the 29 accepted papers, 3 were quite outstanding in the sense that they clearly obtained the best grades by the reviewers. These papers are grouped under the heading "Selected Papers" in the proceedings and they were presented in a special session (without parallel sessions) at the conference. From these three papers, the program committee selected the paper

> "Approximating Most Specific Concepts in Description Logics with Existential Restrictions" by Ralf Küsters and Ralf Molitor

for the Springer Best Paper Award. Congratulations to the authors for this excellent piece of work!

A large number of people helped to make this conference a success. Our thanks go to the workshop chair (Jürgen Dorn), the industrial chairs (Gerhard Friedrich and Kurt Sundermeyer), the local arrangements chair (Uwe Egly), and all the other people involved in the local organization in Vienna. Special thanks go to Elfriede Nedoma, the conference secretary, whose continuous efforts were vital to the whole enterprise, and to Wolfgang Faber, who maintained the marvelous web-site of the conference and designed posters, folders, and other important items. Thanks Wolfgang, you would be a fabulous artist!

As for the technical program, first and foremost we thank all the authors for submitting their papers to our conference. Secondly, we thank the members of the program committee as well as the additional reviewers who did a tremendous job in writing reviews and participating in the electronic PC meeting. Their effort made it possible to select the best papers from the large number of submissions in a relatively short period of time.

Next, we would like to thank our distinguished invited speakers Hans Kamp (University of Stuttgart), Michael Kearns (Syntek Capital), Raymond Reiter (University of Toronto), and V.S. Subrahmanian (University of Maryland) for kindly accepting our invitation to give a talk at our conference. Furthermore, we thank our tutorialists, Thom Frühwirth (University of Munich) and Stefan Wrobel (University of Magdeburg), for their lectures that made attendants familiar with developments in the areas of constraint handling rules and data mining.

In order to obtain funding for invited speakers and other important events without having to take outrageous conferences fees from the participants, it is vital to obtain support from industrial and other sponsors. Our thanks in this respect go to the following companies: Microsoft, Siemens, Springer-Verlag, and Sysis, and the following institutions and organizations: the European Commission, the Austrian Computer Society (OCG), the Austrian Economic Chamber,

the Austrian Ministry of Transport, Innovation & Technology, the Austrian Ministry of Education, Science and Culture, and the City of Vienna.

Finally, we would like to thank Carsten Lutz (RWTH Aachen) for installing and managing the electronic system (ConfMan) that allowed us to get all submissions via the Internet, and to have a virtual PC meeting. You did a great job! Carsten Lutz together with Ulrike Sattler helped to produce the camera-ready copy of these proceedings.

September 2001

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