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Preface

This volume contains papers which were selected for presentation at the Seventh International Symposium on Methodologies for Intelligent Systems - ISMIS'93, held in Trondheim, Norway, June 15-18, 1993. The symposium was hosted by the Norwegian Institute of Technology and sponsored by The University of Trondheim, NFR/NTNF – The Norwegian Research Council, UNC-Charlotte, Office of Naval Research, Oak Ridge National Laboratory and ESPRIT BRA Compulog Network of Excellence.

ISMIS is a conference series that was started in 1986 in Knoxville, Tennessee. It has since then been held in Charlotte, North Carolina, once in Knoxville, and once in Torino, Italy.

The Organizing Committee has decided to select the following major areas for ISMIS'93:

- Approximate Reasoning
- Constraint Programming
- Expert Systems
- Intelligent Databases
- Knowledge Representation
- Learning and Adaptive Systems
- Manufacturing
- Methodologies

The contributed papers were selected from more than 120 full draft papers by the following Program Committee: Jens Balchen (NTH, Norway), Alan W. Biermann (Duke, USA), Alan Bundy (Edinburgh, Scotland), Jacques Calmet (Karlsruhe, Germany), Jaime Carbonell (Carnegie-Mellon, USA), David Hislop (US Army Research Office), Eero Hyvonen (VTT, Finland), Marek Karpinski (Bonn, Germany), Yves Kodratoff (Paris VI, France), Jan Komorowski (NTH, Norway), Kurt Konolige (SRI International, USA), Catherine Lassez (Yorktown Heights, USA), Lennart Ljung (Linköping, Sweden), Ramon Lopez de Mantaras (CSIC, Spain), Alberto Martelli (Torino, Italy), Ryszard Michalski (George Mason, USA), Jack Minker (Maryland, USA), Rohit Parikh (CUNY, USA), Judea Pearl (UCLA, USA), Don Perlis (Maryland, USA), Francois G. Pinn (ORNL, USA), Henri Prade (Toulouse, France), Zbigniew W. Raś (UNC, USA), Barry Richards (Imperial College, UK), Colette Rolland (Paris I, France), Lorenza Saitta (Trento, Italy), Erik Sandewall (Linköping, Sweden), Richmond Thomason (Pittsburgh, USA), Enn Tyugu (KTH, Sweden), Ralph Wachter (ONR, USA), S.K. Michael Wong (Regina, Canada), Erling Woods (SINTEF, Norway), Maria Zemankova (NSF, USA) and Jan Zytkow (Wichita State, USA). Additionally, we acknowledge the help in reviewing the papers from: M. Beckerman, Sanjiv Bhatia, Jianhua Chen, Stephen Chenoweth, Bill Chu, Bipin Desai, Keith Downing, Doug Fisher, Melvin Fitting, Theresa Gaasterland, Atillio Giordana, Charles Glover, Diana Gordon, Jerzy Grzymala-Busse, Cezary Janikow, Kien-Chung Kuo, Rei-Chi Lee, Charles Ling, Anthony Maida, Stan Matwin,

Neil Murray, David Mutchler, Jan Plaza, Helena Rasiowa, Steven Salzberg, P.F. Spelt, David Reed, Michael Sobolewski, Stan Szpakowicz, Zbigniew Stachniak, K. Thirunarayan, Marianne Winslett, Agata Wrzos-Kamińska, Jacek Wrzos-Kamiński, Jing Xiao, Wlodek Zadrozny and Wojtek Ziarko.

The Symposium was organized by the Knowledge Systems Group of the Department of Computer Systems and Telematics, The Norwegian Institute of Technology. The Congress Department of the Institute provided the secretariat of the Symposium. The Organizing Committee consisted of Jan Komorowski, Zbigniew W. Raś and Jacek Wrzos-Kamiński.

We wish to express our thanks to François Bry, Lennart Ljung, Michael Lowry, Jack Minker, Luc De Raedt and Erik Sandewall who presented the invited addresses at the symposium. We would also like to express our appreciation to the sponsors of the symposium and to all who submitted papers for presentation and publication in the proceedings. Special thanks are due to Alfred Hofmann of Springer Verlag for his help and support.

Finally, we would like to thank Jacek Wrzos-Kamiński whose contribution to organizing this symposium was essential to its becoming a success.

March 1993

J. Komorowski, Z.W. Raś

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