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Preface

AII'92 is the third workshop in the AII series started in 1986. The proceedings of the first and second conferences have been published as Lecture Notes in Computer Science 265 and Lecture Notes in Artificial Intelligence 397.

Learning is obviously an important phenomenon of natural intelligence. Therefore, despite restricted specifications of the area of artificial intelligence, learning is a central issue of artificial intelligence research. There is abundant evidence of the human ability to learn from possibly incomplete information. In human communication one usually provides only incomplete information with respect to some target phenomenon to be described or specified. Inductive inference originating from Gold's seminal paper (E.M. Gold, Language Identification in the Limit, Information and Control 10 (1967), 447-474) offers a firm mathematical basis for investigating the crucial problems of learning from possibly incomplete information. Similarly to learning from possibly incomplete information, human communication exhibits an amazing ability to draw analogical conclusions or to perform analogical constructions. This works although there is not much agreement about the gist of analogy. B. Indurkhya's paper in the present volume points to crucial problems.

The AII workshops are focused on all formal approaches to algorithmic learning particularly emphasising analogical reasoning and inductive inference. Both areas are currently attracting a considerable interest in particular settings. Analogical reasoning plays a crucial role in the currently booming field of case-based reasoning. In the field of inductive logic programming, a couple of new techniques have been developed for inductive inference.

The AII events are always intended to bridge the gap between several research communities. The basic areas of concern are theoretical computer science, artificial intelligence, and cognitive sciences.

The program committee of AII'92 consisted of S. Arikawa, J.M. Barzdins, B. Buchanan, R.P. Daley, L. De Raedt, U. Furbach, D.R. Hofstadter, B. Indurkhya, K.P. Jantke, C.H. Smith, M. Warmuth, and S. Wrobel. The program committee invited a number of distinguished scientists to deliver invited talks at AII'92. The second part contains 16 selected papers from a larger number of submissions. I am grateful to all members of the program committee and to all referees for their work. I particularly acknowledge the assistance provided by my research group, the Algorithmic Learning Group at Leipzig University of Technology. Steffen Lange did an especially important job behind the scene as the organising secretary of AII'92. Last but not least, the excellent conditions of the International Conference and Research Center for Computer Science at Dagstuhl Castle provided a firm basis for preparing AII'92.

Leipzig, July 1992 Klaus P. Jantke

List of Referees for AII'92

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