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Grammatical Inference

4th International Colloquium, ICGI-98
Ames, Iowa, USA, July 12-14, 1998
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Series Editors
Jaime G. Carbonell, Carnegie Mellon University, Pittsburgh, PA, USA
Jörg Siekmann, University of Saarland, Saarbrücken, Germany

Volume Editors

Vasant Honavar
Giora Slutzki
Iowa State University, Department of Computer Science
226 Atanasoff Hall, Ames, Iowa, 50011-1040, USA
E-mail: {honavar,slutzki}@cs.iastate.edu

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Preface

Grammatical Inference, also referred to as automata induction, grammar induction, and automatic language acquisition, is the process of learning of grammars, automata, and languages from data (examples, queries, etc.). Machine learning of grammars finds a variety of applications in syntactic pattern recognition, adaptive intelligent agents, diagnosis, computational biology, systems modelling, prediction, natural language acquisition, data mining and knowledge discovery.

Historically, grammatical inference has been studied by researchers in several research communities including: Information Theory, Formal Languages, Automata Theory, Language Acquisition, Computational Linguistics, Machine Learning, Pattern Recognition, Computational Learning Theory, Neural Networks, etc. These different communities have been largely isolated.

Perhaps one of the first attempts to bring together researchers working on grammatical inference for an interdisciplinary exchange of research results took place under the aegis of the First Colloquium on Grammatical Inference held at the University of Essex in United Kingdom in April 1993. This was followed by the (second) International Colloquium on Grammatical Inference, held at Alicante in Spain and the Third International Colloquium on Grammatical Inference, held at Montpellier in France. Following the success of these events and the Workshop on Automata Induction, Grammatical Inference, and Language Acquisition, held in conjunction with the International Conference on Machine Learning at Nashville in United States in July 1997, it was deemed appropriate to hold the Fourth International Colloquium on Grammatical Inference (ICGI '98) in United States.

ICGI '98 consisted of both refereed papers as well as two invited papers and an invited tutorial. Approximately 35 papers were received for review from Europe, United States, India, Japan, and Australia. Each submitted paper was reviewed for technical soundness, originality, clarity of presentation, and relevance by at least 2 members of the program committee. A total of 22 papers were accepted for presentation at the conference. The contributed and invited papers cover a wide range of topics in the theory as well as the applications of grammatical inference, automata induction, and language learning.

We are grateful to the members of the Technical Program Committee for reviewing the papers, and the Local Arrangements Committee and Ms. Margie Poorman and Ms. Janet Gardner of the Extended and Continuing Education Division of Iowa State University for their help with the organization of the conference. We would like to thank Professor James Vary (the Director of the Institute for Theoretical and Applied Physics (IITAP)) Professor John Mayfield (the Associate Dean of the Graduate College), and Professor Arthur Oldehoeft (the Chair of Computer Science) at Iowa State University for their support of the conference. We would like to thank Professor Laurent Miclet and Professor Colin de la Higuera for their help with many aspects of the conference. We

are grateful to Professor Jerry Feldman and Professor Alvis Brazma for kindly agreeing to give invited talks. Professor Jack Lutz graciously agreed to give a tutorial on Kolmogorov Complexity and its Applications. We would like to thank the attendees for making ICGI '98 a success. We are grateful to the the editorial staff of Springer-Verlag for putting together the conference proceedings.

July 1998

Vasant Honavar and Giora Slutzki
Program Chairs
ICGI '98.

Organization

ICGI '98 was organized at Iowa State University (ISU) in Ames, Iowa from July 12 through July 14, 1998 by Vasant Honavar and Giora Slutzki with the assistance of the Technical Program Committee, the Local Arrangements Committee, and the staff of ISU Extended and Continuing Education Division.

ICGI '98 was held in cooperation with the American Association for Artificial Intelligence (AAAI), the IEEE Systems, Man and Cybernetics Society, and the Association for Computational Linguistics (ACL) Special Interest Group on Natural Language Learning.

ICGI '98 was cosponsored by the International Institute of Theoretical and Applied Physics (IITAP), the Iowa Computational Biology Laboratory, the Complex Adaptive Systems Group, the Artificial Intelligence Research Laboratory and the Department of Computer Science at Iowa State University.

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