

- "Grammar inference, automata induction, and language acquisition" by Rajesh G. Parekh and Vasant Honavar
- "The symbolic approach to ANN-based natural language processing" by Michael Witbrock
- "The subsymbolic approach to ANN-based natural language processing" by Georg Dorffner
- "The hybrid approach to ANN-based natural language processing" by Stefan Wermter
- "Character recognition with syntactic neural networks" by Simon Lucas
- "Compressing texts with neural nets" by Jürgen Schmidhuber and Stefan Heil
- "Neural architectures for information retrieval and database query" by Chun-Hsien Chen and Vasant Honavar
- "Text data mining" by Dieter Merkl
- "Text and discourse understanding: The DISCERN system" by Risto Miikkulainen

Where Mathematics, Computer Science, Linguistics, and Biology Meet: Essays in Honour of Gheorghe Păun

Carlos Martín-Vide and Victor Mitran (editors)

(Rovira i Virgili University and University of Bucharest)

Dordrecht: Kluwer Academic Publishers, 2001, xv+446 pp; hardbound, ISBN 0-7923-6693-X, \$176.00, £112.00, Dfl 360.00

"There are not many scientific fields as interdisciplinary as formal language theory. In this volume, it is presented as the very intersection point of Mathematics, Computer Science, Linguistics, and Biology. This book is a collection of papers which closely examines classical topics in computer science inspired by formal languages, as well as showing new concepts and problems motivated in linguistics and biology. The papers are organized into four sections: Grammars and Grammar Systems, Automata, Languages and Combinatorics, and Models of Molecular Computing. They clearly prove the power, wealth, and vitality of the theory nowadays and sketch some trends for its future development. The volume is intended for an audience of computer scientists, computational linguists, theoretical biologists, and any other people interested in dealing with the problems and challenges of interdisciplinarity."—*From the publisher's announcement, with minor corrections*

"Our volume has two goals. One is to present some recent results in active areas of the three domains that converge in the new field. The other one is to celebrate the 50th birthday of Gheorghe Păun, who, from formal language theory, promoted the new research area and made seminal contributions to it... All the papers are contributed by Gheorghe Păun's collaborators, colleagues, friends, and students in the five continents, who wanted to show in this way their recognition to him for his tremendous work. We have collected 38 papers by 75 authors here. (Another set of 38 papers by 65 authors will be published soon in the future.)"—*From the editors' preface*

Recent Advances in Natural Language Processing II: Selected Papers from RANLP '97

Nicolas Nicolov and Ruslan Mitkov (editors)

(University of Sussex and University of Wolverhampton)

Amsterdam: John Benjamins (Current issues in linguistic theory, volume 189), 2000, xi+422 pp; hardbound, ISBN 1-55619-966-X and 90-272-3695-X, \$84.00

"This volume brings together [31] revised versions of a selection of papers presented at the Second International Conference on 'Recent Advances in Natural Language Processing' (RANLP'97) held in Tzigov Chark, Bulgaria, 11–13 September 1997."—*From the editors' foreword*

Intelligent Help Systems for UNIX

Stephen J. Hegner, Paul McKeivitt, Peter Norvig, and Robert Wilensky (editors)

(Umeå University, University of Ulster, NASA Ames Research Center, and University of California, Berkeley)

Reprinted from *Artificial Intelligence Review*, 14(1–5), 2000.

Dordrecht: Kluwer Academic Publishers, 2001, xii+420 pp (no index); hardbound, ISBN 0-7923-6641-7, \$190.00, £135.00, €220.00

This collection of papers concerns artificial-intelligence (AI) and cognitive-science techniques applied to the problem of providing help systems for the UNIX operating sys-

tem. The research described here involves the representation of technical computer concepts, but also the representation of how users conceptualize such concepts. These systems range from menu-based to natural language interfaces, some providing active help, intervening when they believe the user to have misconceptions, and some based on empirical studies of what users actually do while using UNIX. Further papers investigate planning and knowledge representation where the focus is on discovering what the user wants to do, and figuring out a way to do it as well as representing the knowledge needed to do so. There is a focus on natural language dialogue where consultation systems can become active, incorporating user modeling, natural language generation, and plan recognition, modeling metaphors and users' mistaken beliefs.

The articles are derived from papers originally presented at a workshop entitled "Knowledge Representation in the UNIX Help Domain," organized by Peter Norvig, Wolfgang Wahlster, and Robert Wilensky at the University of California, Berkeley, USA, in December 1987. The area of intelligent help systems for UNIX provides such a fruitful example domain of application for many AI techniques that this work is still timely, more widely and particularly now where we have many spoken dialogue systems applied to such fixed domains. Each article here has been reviewed by the editors and has been subsequently revised; furthermore, all authors have been asked to include a section on recent developments in their work.—*Adapted from the publisher's announcement and the editors' introduction*