

R. Tagliaferri, M. Marinaro, University of Salerno, Italy (Eds.)

## Neural Nets WIRN Vietri-01

Proceedings of the 12th Italian Workshop on Neural Nets, Vietri sul Mare, Salerno, Italy, 17-19 May 2001

### Contents

The complete table of contents can be found on the Internet: <http://www.springer.de>

### Features

- Provides a state-of-the-art overview of research

*This book contains the proceedings of the 12th Italian Workshop on Neural Nets which, was held in Salerno, Italy, from 17-19 May 2001. Bringing together the very best research and development from the scientific community, it provides in-depth analyses of topics in the areas of Architectures and Algorithms, Image and Signal Processing, and Applications.*

*Of particular interest are the following: Invited lectures on: Computation in Neuromorphic Analog VLSI Systems; On Connectionism and Rule Extraction; and Beyond Simple Rule Extraction: Acquiring Planning Knowledge from Neural Networks; A review talk on: Neurofuzzy Approximator Based on Mamdani's Model; Papers from a special session on: From Synapses to Rules.*

*This volume provides a state-of-the-art overview of current research and will be of interest to graduate and postgraduate students and researchers in the fields of computer science; engineering; physics and mathematics.*

### Fields of interest

Artificial Intelligence, Pattern Recognition, Image Processing

### Target groups

Graduate and postgraduate students; researchers

### Type of publication

Proceedings

Due October 2001

Perspectives in Neural Computing.  
Ed.: J.G. Taylor

2001. Approx. 350 pp. 110 figs. Hardcover  
DM 169,90; £ 55,-; FF 685,-; Lit. 200.780  
ISBN 1-85233-505-X



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W. Taha, Yale University, New Haven, CT, USA (Ed.)

## Semantics, Applications, and Implementation of Program Generation

Second International Workshop, SAIG 2001, Florence, Italy, September 6, 2001.  
Proceedings

*This book constitutes the refereed proceedings of the Second International Workshop on Semantics, Applications, and Implementation of Program Generation, SAIG 2001, held in Florence, Italy, in September 2001.*

*The seven revised full papers and two position papers presented together with an invited survey paper and two abstracts of invited talks were carefully reviewed and selected for inclusion in the book. Among the topics covered are generative programming, meta-programming, aspect-oriented programming, transition compression, goal-directed evaluation, partial evaluation, functional programming, meta-computation, and program optimization.*

### Fields of interest

Programming Languages, Compilers, Interpreters, Logics and Meanings of Programs, Programming Techniques

### Target groups

Researchers and professionals

### Type of publication

Proceedings

Available

Lecture Notes in Computer Science.  
Eds.: G. Goos, J. Hartmanis,  
J. van Leeuwen. Vol. 2196

2001. X, 219 pp. Softcover  
DM 66,-; £ 24,50; FF 266,-; Lit. 78.000  
ISBN 3-540-42558-6



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C. Teuscher, Swiss Federal Institute of Technology, Lausanne, Switzerland

## Turing's Connectionism

An Investigation of  
Neural Network Architectures

### Contents

Introduction.- Intelligent machinery.- Synthesis of logical functions and digital systems with Turing networks.- Organizing unorganized machines.- Network properties and characteristics.- Epilogue.

### Features

- Contains a Foreword by B. Jack Copeland and D. Proudfoot
- Develops Turing's ideas, by building his machines and training them using evolutionary algorithms
- Goes beyond Turing's ideas, and proposes new machines

*Turing's Connectionism provides a detailed and in-depth analysis of Turing's almost forgotten ideas on connectionist machines. In a little known paper entitled "Intelligent Machinery", Turing already investigated connectionist models as early as 1948. Unfortunately, his work was dismissed by his employer as a "schoolboy essay" and went unpublished until 1968, 14 years after his death. In this book, Christof Teuscher analyzes all aspects of Turing's "unorganized machines". Turing himself also proposed a sort of genetic algorithm to train the networks. This idea has been resumed by the author, and genetic algorithms are used to build and train Turing's unorganized machines. Teuscher's work starts from Turing's initial ideas, but importantly goes beyond them. Many new kinds of machines and new aspects are considered, e.g., hardware implementation, analysis of the complex dynamics of the networks, hyper-computation, and learning algorithms.*

### Fields of interest

Theory of Computation, Computer Hardware

### Target groups

Researchers, undergraduates

### Type of publication

Monograph

Available

Discrete Mathematics and Theoretical Computer Science.  
Eds.: D.S. Bridges, C.S. Calude

2001. XXIV, 200 pp. 129 figs. Softcover  
DM 159,90; £ 49,-; FF 645,-; Lit. 188.960  
ISBN 1-85233-475-4



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