

# Contents

## Preface

### Part I - Artificial Neural Networks

A Recurrent Self-Organizing Map for Temporal Sequence Processing <i>T. McQueen, A. Hopgood, J. Tepper and T. Allen</i>	3
Optimisation of Neural Network Topology and Input Parameters for Prosody Modelling of Synthetic Speech <i>V. Sebesta and J. Tuckova</i>	9
Using ART1 Neural Networks to Determine Clustering Tendency <i>L. Massey</i>	17
High Performance Associative Memories and Structured Weight Dilution <i>S.P. Turvey, S. P. Hunt, N. Davey and R.J. Frank</i>	23
Neural Network Analysis of Estimation of Data <i>E. Triastuti, R. Crockett, P. Picton and A. Crockett</i>	31
A Compiler and Simulator for Partial Recursive Functions over Neural Networks <i>J. Neto, J. F. Costa, P. Carreira and M. Rosa</i>	39
Multistage Neural Networks: Adaptive Combination of Ensemble Results <i>S. Yang, A. Browne and P. Picton</i>	47
On the Fuzzy Spatio-temporal Specification of Multimedia Synchronisation Scenarios <i>A. L. V. Coelho and I. L. M. Ricarte</i>	53
<b>Part II - Evolutionary Computing</b>	
An Approach to On-line Design of Fuzzy Controllers with Evolving Structure <i>P. Angelov</i>	63
Can a Parallel Agent Approach to Genetic Algorithms Reduce Search Times <i>M. Lefley and I. D. McKew</i>	69

Comparison of Domination Approaches for Diploid Binary Genetic Algorithms <i>S. Uyar and A. E. Harmanci</i>	75
New Heuristics for Flowshop Scheduling <i>U. K. Chakraborty</i>	81
Temporal Rule Discovery using Genetic Programming and Specialized Hardware <i>M. L. Hetland and P. Saetrom</i>	87
Genetic Programming with Guaranteed Constraints <i>C. Johnson</i>	95
<b>Part III - Fuzzy Systems</b>	
Precisiated Natural Language and Protoforms for Human Consistent Data Mining <i>J. Kacprzyk and S. Zadrozny</i>	103
Design and Synthesis of Piecewise-Linear Fuzzy Systems <i>I. del Campo, J. Echanobe, and J. M. Tarela</i>	111
A New Ranking Method For Fuzzy FMEA <i>M. S. Hitam, S. Gobee and K. Subari</i>	119
Representing Reliability and Hesitation in Possibility Theory: A General Framework <i>C. Cornelis, M. De Cock and E. Kerre</i>	127
Noise Clustering with a Fixed Fraction of Noise <i>F. Klawonn</i>	133
Selective Sampling for Combined Learning from Labelled and Unlabelled Data <i>L. Petrakieva and B. Gabrys</i>	139
<b>Part IV - Hybrid and Intelligent Systems</b>	
New Results for a Hybrid Decision Tree/Genetic Algorithm for Data Mining <i>D. R. Carvalho and A. A. Freitas</i>	149
Embedding Support Vector Machines into Localised Mixtures of Experts <i>C. A. M. Lima, A. L. V. Coelho and F. J. Von Zuben</i>	155

Gaussian Function Approximation in Neuro-Fuzzy Systems <i>K. Basterretxea, J. M. Tarela and I. del Campo</i>	163
Automated Configuration of Multi-Spindle Drilling Gear Machines by Sub-Domain Knowledge Processing and Adaptive Algorithms <i>G. Klene, A. Grauel, J. J. Convey and A. J. Hartley</i>	171
Construction of Shape-preserving First-order Takagi-Sugeno Systems via Linear-rational Spline Fuzzy Partitions <i>F. Fernandez, J. Gutierrez, J. C. Crespo and G. Trivino</i>	179
Identification of Dynamic Cause-Effect Relations for Systems Performance Evaluation <i>G. Vachkov, Y. Kiyota and K. Komatsu</i>	187
A Multi-layered Immune Inspired Machine Learning Algorithm <i>T. Knight and J. Timmis</i>	195
Using Plausible Reasoning for Developing Intelligent Systems <i>B. Khandzad, E. Ashoori, F. Oroumchian and B. N. Araabi</i>	203
Towards Model-Independent Mode Detection and Characterisation of Very Long Biomedical Time Series <i>K. Pauwels, T. Gautama, D. P. Mandic and M. M. Van Hulle</i>	213
Analysis of Rules Discovered by the Data Mining Process <i>K. McGarry and J. Malone</i>	219
A Study of Query Generation Strategies for Interactive Constraint Acquisition <i>Sarah O'Connell, Barry O'Sullivan, Eugene C. Freuder</i>	225
A Multi-agent System as Framework for Learning Algorithms Benchmarking <i>L. M. Hercog and T. C. Fogarty</i>	233
Soft Learning: A Conceptual Bridge between Data Mining and Machine Learning <i>F. A. Marginean</i>	241
Heuristics for Kernels Adaptation in Support Vector Machines <i>E. Saavedra, I. Renners, A. Grauel, D. Morton and H.J. Convey</i>	249

A Study of the Effectiveness of Detailed Balance in Avoiding Premature Convergence in PBIL <i>E.S. Correa and J.L. Shapiro</i>	255
---	-----

#### **Part V - Soft Computing Applications**

Application of Computational Intelligence Methods for Intelligent Modelling of Buildings <i>A. Gegov</i>	263
An Adaptive Multi Embedded-Agent Architecture for Intelligent Inhabited Environments <i>E. Tawil and H. Hagra</i>	271
Constraint Neuro-Model based Predictive Control <i>M. Soufian, A. A. Rahman, M. Soufian, and A. A. Mokbel</i>	279
An Efficient Hybrid Method of Regression Tree and Fuzzy Inference for Short-term Load Forecasting in Electric Power Systems <i>H. Mori, Y. Sakatani, T. Fujino and K. Numa</i>	287
An Iterative Learning Control Method for a Level Control Problem <i>M.H. Schwarz and C.S. Cox</i>	295
Face Verification Using SVM: Influence of Illumination <i>C. Conde, A. Ruiz and E. Cabello</i>	301
A Neuro-Fuzzy Technique for Scene Cut Detection from MPEG-1 Video <i>A. M. Dawood, A. S. Al-Hammadi</i>	309
Fuzzy Audio-Visual Feature Maps for Speaker Identification <i>C. C. Chibelushi</i>	317
Adaptive User Agents for Intelligent Biometric Applications <i>N.J. Mavity, F. Deravi and M.C. Fairhurst</i>	323
Gait Recognition by Moment Based Descriptors <i>J. P. Foster, M. S. Nixon and A Prugel-Benett</i>	331
On a Large Sequence-Based Human Gait Database <i>J. D. Shutler, M. G. Grant, M. S. Nixon and J. N. Carter</i>	339



<http://www.springer.com/978-3-540-40856-7>

Applications and Science in Soft Computing

Lotfi, A.; Garibaldi, J.M. (Eds.)

2004, X, 346 p. 105 illus., Softcover

ISBN: 978-3-540-40856-7