

Table of Contents

Invited Papers

Evolutionary Design of Information Systems Architectures	1
<i>Danilo Ardagna, Chiara Francalanci, Vincenzo Piuri, Fabio Scotti</i>	
Clifford Support Vector Machines for Classification	9
<i>Eduardo Bayro-Corrochano, Nancy Arana-Daniel, J. Refugio Vallejo-Gutiérrez</i>	
Uncertain Variables and Systems – New Problems and Results	17
<i>Zdzisław Bubnicki</i>	
Blind Signal Separation and Extraction: Recent Trends, Future Perspectives, and Applications	30
<i>Andrzej Cichocki, Jacek M. Zurada</i>	
Visualization of Hidden Node Activity in Neural Networks:	
I. Visualization Methods	38
<i>Włodzisław Duch</i>	
Visualization of Hidden Node Activity in Neural Networks:	
II. Application to RBF Networks	44
<i>Włodzisław Duch</i>	
Rough Set Approach to Incomplete Data	50
<i>Jerzy W. Grzymala-Busse</i>	
Neural Networks of Positive Systems	56
<i>Tadeusz Kaczorek</i>	
Support of Natural, by Artificial, Intelligence Using Utility as Behavioral Goal	64
<i>Roman Kulikowski</i>	
Top-Down Selective Attention for Robust Perception of Noisy and Confusing Patterns	73
<i>Soo-Young Lee</i>	
On ANN Based Solutions for Real-World Industrial Requirements	79
<i>Kurosh Madani</i>	
ACTIVEMATH: An Intelligent Tutoring System for Mathematics	91
<i>Erica Melis, Jörg Siekmann</i>	

Inference Rules and Decision Rules	102
<i>Zdzisław Pawlak</i>	
Survival of Intelligent Agents in Changing Environments	109
<i>Šarūnas Raudys</i>	
Inducing Robust Decision Rules from Rough Approximations of a Preference Relation	118
<i>Roman Slowinski, Salvatore Greco</i>	
The New Concept in Computer Vision: Automatic Understanding of the Images	133
<i>Ryszard Tadeusiewicz, Marek R. Ogiela</i>	
Neural Networks and Their Applications	
Dynamic High Order Neural Networks: Application for Fault Diagnosis ..	145
<i>Eugen Arinton, Józef Korbcz</i>	
Momentum Modification of the RLS Algorithms	151
<i>Jarosław Bilski</i>	
Parallel Realisation of QR Algorithm for Neural Networks Learning	158
<i>Jarosław Bilski, Sławomir Litwiński, Jacek Smoląg</i>	
Rainfall-Runoff Modelling Using Three Neural Network Methods	166
<i>H. Kerem Cigizoglu, Murat Alp</i>	
Probability Distribution of Solution Time in ANN Training Using Population Learning Algorithm	172
<i>Ireneusz Czarnowski, Piotr Jędrzejowicz</i>	
Parallelization of the SOM-Based Integrated Mapping	178
<i>Gintautas Dzemyda, Olga Kurasova</i>	
Training Radial Basis Functions by Gradient Descent	184
<i>Mercedes Fernández-Redondo, Carlos Hernández-Espinosa, Mamen Ortiz-Gómez, Joaquín Torres-Sospedra</i>	
Generalized Backpropagation through Time for Continuous Time Neural Networks and Discrete Time Measurements	190
<i>Krzysztof Fajarewicz, Adam Galuszka</i>	
Experiments on Ensembles of Radial Basis Functions	197
<i>Carlos Hernández-Espinosa, Mercedes Fernández-Redondo, Joaquín Torres-Sospedra</i>	
Orthodoxy Basis Functions and Convergence Property in Procedure Neural Networks	203
<i>Jiong Jia, Jiuzhen Liang</i>	

Confidence Estimation of GMDH Neural Networks	210
<i>Józef Korbicz, Mihai F. Metenidis, Marcin Mrugalski, Marcin Witczak</i>	
On Some Factors Influencing MLP Error Surface	217
<i>Miroslaw Kordos, Włodzisław Duch</i>	
Discovery of Linguistic Rules by Means of RBF Network for Fault Detection in Electronic Circuits	223
<i>Jan Koszłaga, Paweł Strumillo</i>	
Combining Space-Filling Curves and Radial Basis Function Networks . . .	229
<i>Adam Krzyżak, Ewa Skubalska-Rafajłowicz</i>	
Chaotic Itinerancy for Patterns Separation	235
<i>Paweł Matykiewicz</i>	
Dynamic Search Trajectory Methods for Neural Network Training	241
<i>Y.G. Petalas, D.K. Tasoulis, M.N. Vrahatis</i>	
Visualizing and Analyzing Multidimensional Output from MLP Networks via Barycentric Projections	247
<i>Filip Piękniewski, Leszek Rybicki</i>	
Optimization of Centers' Positions for RBF Nets with Generalized Kernels	253
<i>E. Rafajłowicz, M. Pawlak</i>	
Fixed Non-linear Combining Rules versus Adaptive Ones	260
<i>Sarunas Raudys, Zidrina Pabarskaite</i>	
Learning and System Modeling via Hamiltonian Neural Networks	266
<i>Wiesław Sienko, Wiesław Cítko, Dariusz Jakóbczak</i>	
Recurrent Network Structure for Computing Quasi-inverses of the Sierpiński Space-Filling Curves	272
<i>Ewa Skubalska-Rafajłowicz</i>	
Fuzzy Systems and Their Applications	
Comparison of Reasoning Methods for Fuzzy Control	278
<i>Bohdan Butkiewicz</i>	
Fuzzy Modelling with a Compromise Fuzzy Reasoning	284
<i>Krzysztof Cpalka, Leszek Rutkowski</i>	
A Self Tuning Fuzzy Inference System for Noise Reduction	290
<i>Nevcihan Duru, Tarik Duru</i>	

Fuzzy-Neural Networks in the Diagnosis of Motor-Car's Current Supply Circuit	296
<i>Stanisław Gad, Mariusz Laskawski, Grzegorz Stoń, Alexander Yastrebov, Andrzej Zawadzki</i>	
Fuzzy Number-Based Hierarchical Fuzzy System	302
<i>Adam E. Gaweda, Rafał Scherer</i>	
Stock Trend Prediction Using Neurofuzzy Predictors Based on Brain Emotional Learning Algorithm	308
<i>Mahdi Jalili-Kharaajoo</i>	
Digital Implementation of Fuzzy Petri Net Based on Asynchronous Fuzzy RS Flip-Flop	314
<i>Jacek Kluska, Zbigniew Hajduk</i>	
Fuzzy Calculator – Useful Tool for Programming with Fuzzy Algebra	320
<i>Roman Koleśnik, Piotr Prokopowicz, Witold Kosiński</i>	
On Defuzzification of Ordered Fuzzy Numbers	326
<i>Witold Kosiński</i>	
Information Criteria Applied to Neuro-Fuzzy Architectures Design	332
<i>Robert Nowicki, Agata Pokropińska</i>	
On Hesitation Degrees in IF-Set Theory	338
<i>Anna Pankowska, Maciej Wygralak</i>	
Fuzzy Cognitive Maps Learning through Swarm Intelligence	344
<i>E.I. Papageorgiou, K.E. Parsopoulos, P.P. Groumpos, M.N. Vrahatis</i>	
Application of the General Gaussian Membership Function for the Fuzzy Model Parameters Tunning	350
<i>Andrzej Pieczyński, Andrzej Obuchowicz</i>	
Are Linguistic Evaluations Used by People of Possibilistic or Probabilistic Nature?	356
<i>Andrzej Piegat</i>	
Fuzzy Linear Programming in Ship Trajectory Optimization in a Restricted Area	364
<i>Zbigniew Pietrzykowski</i>	
Application of Fuzzy Weighted Feature Diagrams to Model Variability in Software Families	370
<i>Silva Robak, Andrzej Pieczyński</i>	
Neuro-Fuzzy Relational Classifiers	376
<i>Rafał Scherer, Leszek Rutkowski</i>	

What Differs Interval Type-2 FLS from Type-1 FLS?	381
<i>Janusz T. Starczewski</i>	
A Similarity Measure for Intuitionistic Fuzzy Sets and Its Application in Supporting Medical Diagnostic Reasoning	388
<i>Eulalia Szmidt, Janusz Kacprzyk</i>	
Evolutionary Algorithms and Their Applications	
Multi-criterion Evolutionary Algorithm with Model of the Immune System to Handle Constraints for Task Assignments	394
<i>Jerzy Balicki</i>	
Parallel Genetic Algorithm for Minimizing Total Weighted Completion Time	400
<i>Wojciech Bożejko, Mieczysław Wodecki</i>	
Adaptive Evolutionary Computation – Application for Mixed Linear Programming	406
<i>Ewa Dudek-Dyduch, Dominik Jarczyk</i>	
Adaptive Evolutionary Computation of the Parametric Optimization Problem	414
<i>Tadeusz Dyduch</i>	
Concentration of Population in Phenotypic Evolution	420
<i>Iwona Karcz-Dulęba</i>	
An Evolutionary Clustering Algorithm	426
<i>Marcin Korzeń</i>	
An Evolutionary Algorithm for Oblique Decision Tree Induction	432
<i>Marek Kretowski</i>	
Propagation of Building Blocks in SGA and MPGA	438
<i>Grzegorz Kusztełek, Marek Rudnicki, Sławomir Wiak</i>	
Selection Pressure and an Efficiency of Neural Network Architecture Evolving	444
<i>Halina Kwaśnicka, Mariusz Paradowski</i>	
Rule Extraction from Neural Network by Genetic Algorithm with Pareto Optimization	450
<i>Urszula Markowska-Kaczmar, Paweł Wnuk-Lipiński</i>	
Graph Transformations in Evolutionary Design	456
<i>Piotr Nikodem, Barbara Strug</i>	
A Genetic Algorithm for Probabilistic SAT Problem	462
<i>Zoran Ognjanović, Uroš Midić, Jozef Kratica</i>	

Design and Optimization of Combinational Digital Circuits Using Modified Evolutionary Algorithm	468
<i>Adam Słowik, Michał Białko</i>	
Modified Version of Roulette Selection for Evolution Algorithms – The Fan Selection	474
<i>Adam Słowik, Michał Białko</i>	
New Genetic Crossover Operator for the TSP	480
<i>Sang-Moon Soak, Byung-Ha Ahn</i>	
Rough Sets and Their Applications	
Hybridization of Blind Source Separation and Rough Sets for Proteomic Biomarker Identification	486
<i>Grzegorz M. Boratyn, Tomasz G. Smolinski, Jacek M. Zurada, Mariofanna Milanova, Sudeepa Bhattacharyya, Larry J. Swa</i>	
Inducing Jury’s Preferences in Terms of Acoustic Features of Violin Sounds	492
<i>Jacek Jelonek, Ewa Łukasik, Aleksander Naganowski, Roman Słowiński</i>	
Fuzzy Implication Operators in Variable Precision Fuzzy Rough Sets Model	498
<i>Alicja Mieszkowicz-Rolka, Leszek Rolka</i>	
Fuzzyfication of Indiscernibility Relation for Structurizing Lists of Synonyms and Stop-Lists for Search Engines	504
<i>A. Niewiadomski, P. Kryger, P.S. Szczepaniak</i>	
Rough Sets in the Neuro-Fuzzy Architectures Based on Monotonic Fuzzy Implications	510
<i>Robert Nowicki</i>	
Rough Sets in the Neuro-Fuzzy Architectures Based on Non-monotonic Fuzzy Implications	518
<i>Robert Nowicki</i>	
On L–Fuzzy Rough Sets	526
<i>Anna Maria Radzikowska, Etienne E. Kerre</i>	
Application of Rough Sets Techniques to Induction Machine Broken Bar Detection	532
<i>M.R. Rafimanzelat, B.N. Araabi</i>	
Application of Rough Sets and Neural Networks to Forecasting University Facility and Administrative Cost Recovery	538
<i>Tomasz G. Smolinski, Darrel L. Chenoweth, Jacek M. Zurada</i>	

Soft Computing in Classification

Selection of the Linearly Separable Feature Subsets.....	544
<i>Leon Bobrowski, Tomasz Lukaszuk</i>	
Short-Time Signal Analysis Using Pattern Recognition Methods	550
<i>Piotr Boguś, Katarzyna D. Lewandowska</i>	
Application of Genetic Algorithms and Kohonen Networks to Cluster Analysis	556
<i>Marian B. Gorzalczany, Filip Rudziński</i>	
Modified Kohonen Networks for Complex Cluster-Analysis Problems	562
<i>Marian B. Gorzalczany, Filip Rudziński</i>	
Reducing the Computational Demands for Nearest Centroid Neighborhood Classifiers	568
<i>Szymon Grabowski</i>	
SSV Criterion Based Discretization for Naive Bayes Classifiers	574
<i>Krzysztof Grąbczewski</i>	
Comparison of Instance Selection Algorithms II. Results and Comments	580
<i>Marek Grochowski, Norbert Jankowski</i>	
SBL-PM-M: A System for Partial Memory Learning	586
<i>Karol Grudziński</i>	
Relevance LVQ versus SVM	592
<i>Barbara Hammer, Marc Strickert, Thomas Villmann</i>	
Comparison of Instances Seletion Algorithms I. Algorithms Survey	598
<i>Norbert Jankowski, Marek Grochowski</i>	
Towards Grammatical Inferencing of GDPLL(k) Grammars for Applications in Syntactic Pattern Recognition-Based Expert Systems	604
<i>Janusz Jurek</i>	
Intelligent Layer of Two-Way Voice Communication of the Technological Device with the Operator	610
<i>Wojciech Kacalak, Maciej Majewski</i>	
A Neural Network Based Method for Classification of Meteorological Data	616
<i>K. Kaminski, W. Kaminski, P. Strumillo</i>	

An Empirical Test Suite for Message Authentication Evaluation
in Communications Based on Support Vector Machines 622
D.A. Karras

Efficient Digital Fingerprint Production and Evaluation
for Secure Communication Systems Based on Genetic Algorithms 628
D.A. Karras

On Chinese Web Page Classification 634
Jiuzhen Liang

A New Fuzzy Clustering Method with Constraints in Time Domain 640
Jacek Leski, Aleksander Owczarek

Special Cluster Analysis and Basic Feature Estimation
with a Modification of Self-Organizing Map 646
Janusz Morajda

An Unsupervised Cluster Analysis and Information
about the Modelling System 652
Izabela Rejer

Cursive-Character Script Recognition Using Toeplitz Model
and Neural Networks 658
Khalid Saeed, Marek Tabedzki

Learning with an Embedded Reject Option 664
Ramasubramanian Sundararajan, Asim K. Pal

Image Processing

Impulsive Noise Suppression from Highly Corrupted Images by Using
Resilient Neural Networks 670
Erkan Beşdok, Pınar Çivicioğlu, Mustafa Alçı

A New Methodology for Synthetic Aperture Radar (SAR) Raw Data
Compression Based on Wavelet Transform and Neural Networks 676
*Giacomo Capizzi, Salvatore Coco, Antonio Laudani,
Giuseppe Pappalardo*

Fuzzy Processing Technique for Content-Based Image Retrieval 682
Ryszard S. Choraś

Human Ear Identification Based on Image Analysis 688
Michał Choraś

Automatic Change Detection Based on Codelength Differences
in Multi-temporal and Multi-spectral Images 694
Joselito J. Chua, Peter E. Tischer

Estimating Face Direction via Facial Triangle	700
<i>Min Gyo Chung, Jisook Park, Jiyoun Dong</i>	
An Image Compression Algorithm Based on Neural Networks	706
<i>Robert Cierniak</i>	
Fuzzy Nonparametric Measures for Image Matching	712
<i>Boguslaw Cyganek, Jan Borgosz</i>	
Neural Computation of the Fundamental Matrix	718
<i>Boguslaw Cyganek</i>	
Face Detection Using CMAC Neural Network	724
<i>H. Fashandi, M.S. Moin</i>	
A Biologically Inspired Active Stereo Vision System Using a Bottom-Up Saliency Map Model	730
<i>Bum-Soo Jung, Sang-Bok Choi, Sang-Woo Ban, Minho Lee</i>	
Problems Connected with Application of Neural Networks in Automatic Face Recognition	736
<i>Rafal Komanski, Bohdan Macukow</i>	
Czestochowa-Faces and Biometrics of Asymmetrical Face	742
<i>Leonid Kompanets, Mariusz Kubanek, Szymon Rydzek</i>	
Wafer Die Position Detection Using Hierarchical Gray Level Corner Detector	748
<i>Jae Hyung Na, Hae Seok Oh</i>	
On Fuzzy Labelled Image Segmentation Based on Perceptual Features	754
<i>Pilar Sobrevilla, Eduard Montseny</i>	
Generalized Multi-layer Kohonen Network and Its Application to Texture Recognition	760
<i>A. Tomczyk, P.S. Szczepaniak, B. Lis</i>	
Robotics	
Translation STRIPS Planning in Multi-robot Environment to Linear Programming	768
<i>Adam Galuszka, Andrzej Swierniak</i>	
Fuzzy Combiner of Behaviors for Reactive Control of Wheeled Mobile Robot	774
<i>Zenon Hendzel</i>	
Artificial Intelligence of the Decision Unit of a Mobile Robot	780
<i>Jan Kazimierczak</i>	

Finding Location Using a Particle Filter and Histogram Matching 786
Bogdan Kwolek

Calculation of Model of the Robot by Neural Network
with Robot Joint Distinction 792
J. Możaryn, J.E. Kurek

Multi-robot Coordination Based on Cooperative Game 798
Krzysztof Skrzypczyk

Model Based Predictive Robotic Manipulator Control
with Sinusoidal Trajectory and Random Disturbances 804
Hasan Temurtas, Fevzullah Temurtas, Nejat Yumusak

Multiagent Systems

Performance Evaluation of Multiagent Personalized
Information System 810
Tomasz Babczyński, Zofia Kruczkiewicz, Jan Magott

A Neural-Based Agent for IP Traffic Scanning and Worm Detection 816
Andrzej Bielecki, Paweł Hajto

Evolutionary Neural Networks in Collective Intelligent
Predicting System 823
Aleksander Byrski, Jerzy Balamut

Development of a Personalized Digital Library System Based on the
New Mobile Multi Agent Platform 829
Young Im Cho

FOOD: An Agent-Oriented Dataflow Model 835
Nicolas Juillerat, Béat Hirsbrunner

Flock-Based Architecture for Distributed Evolutionary Algorithms 841
Marek Kisiel-Dorohinicki

Quickprop Neural Network Short-Term Forecasting Framework
for a Database Intrusion Prediction System 847
P. Ramasubramanian, A. Kannan

Various Problems of Artificial Intelligence

The New Concepts in Parallel Simulated Annealing Method 853
Wojciech Bożejko, Mieczysław Wodecki

Simulated Annealing with Restart to Job Shop Scheduling Problem
Using Upper Bounds 860
Marco Antonio Cruz-Chavez, Juan Frausto-Solis

Requirements and Solutions for Web-Based Expert System	866
<i>Maciej Grzenda, Marcin Niemczak</i>	
Information Structuring in Natural Language Communication: Syntax versus Semantic	872
<i>Wladyslaw Homenda</i>	
Strategic Planning through Model Checking of ATL Formulae	879
<i>Wojciech Jamroga</i>	
On a Special Class of Dempster-Shafer Theories	885
<i>Mieczysław Alojzy Kłopotek</i>	
A Computer Based System Supporting Analysis of Cooperative Strategies	891
<i>Lech Kruś</i>	
Application of Soft Computing Techniques to Rescue Operation Planning	897
<i>Jiří Kubalík, Jiří Kléma, Miroslav Kulich</i>	
Reduction of Tabular Systems	903
<i>Antoni Ligeza, Marcin Szpyrka</i>	
Temporal Difference Approach to Playing Give-Away Checkers	909
<i>Jacek Mańdziuk, Daniel Osman</i>	
Artificial Neural Networks for Solving Double Dummy Bridge Problems..	915
<i>Krzysztof Mossakowski, Jacek Mańdziuk</i>	
On Application of Ant Algorithms to Non-bifurcated Multicommodity Flow Problem	922
<i>Krzysztof Walkowiak</i>	
A Parallel Clustering Algorithm for Categorical Data Set	928
<i>Yong-Xian Wang, Zheng-Hua Wang, Xiao-Mei Li</i>	
Intensive versus Non-intensive Actor-Critic Reinforcement Learning Algorithms	934
<i>Paweł Wawrzynski, Andrzej Pacut</i>	
Virtual Modeling and Optimal Design of Intelligent Micro-accelerometers	942
<i>Slawomir Wiak, Andrzej Cader, Paweł Drzymala, Henryk Welfle</i>	
Control, Modelling, and System Identification	
Local Pattern-Based Interval Models	948
<i>Wojciech Cholewa</i>	

Implementation of Two-Stage Hopfield Model and Its Application in Nonlinear Systems	954
<i>Ivan Nunes da Silva, Jose Alfredo C. Ulson, Andre Nunes de Souza</i>	
Genetic Algorithm Based Fuzzy Sliding Mode with Application to Building Structures	960
<i>Kambiz Falsafian, Mahdi Jalili-Kharaajoo</i>	
Influence of the Training Set Selection on the Performance of the Neural Network State Variables Estimators in the Induction Motor	966
<i>Jerzy Jelonekiewicz, Andrzej Przybył</i>	
LMI-Based Design of Optimal Controllers for Takagi-Sugeno Fuzzy Systems	972
<i>J. Park, Y. Park, K. Kwak, J.H. Hong</i>	
Design of Multi-objective Evolutionary Technique Based Intelligent Controller for Multivariable Nonlinear Systems	978
<i>Farzan Rashidi, Mehran Rashidi</i>	
Design of a Robust Sliding Mode Fuzzy Controller for Nonlinear HVAC Systems	984
<i>Farzan Rashidi, Behzad Moshiri</i>	
Global Identification of Complex Systems with Cascade Structure	990
<i>Jerzy Swiatek</i>	
Medical Applications	
Diagnosis of Melanoma Using IRIM, a Data Mining System	996
<i>Jerzy W. Grzymala-Busse, Jay Hamilton, Zdzislaw S. Hippe</i>	
Detection of Spiculated Masses in Mammograms Based on Fuzzy Image Processing	1002
<i>Aboul Ella Hassanien, Jafar M. Ali, Hajime Nobuhara</i>	
Artificial Neural Networks in Identifying Areas with Homogeneous Survival Time	1008
<i>Małgorzata Krętowska, Leon Bobrowski</i>	
Multistage Diagnosis of Myocardial Infraction Using a Fuzzy Relation ...	1014
<i>Marek Kurzynski</i>	
Application of SVM to Ovarian Cancer Classification Problem	1020
<i>Maciej Kusy</i>	
ROC Analysis for Fetal Hypoxia Problem by Artificial Neural Networks..	1026
<i>Lale Özyılmaz, Tülay Yıldırım</i>	

The Challenge of Soft Computing Techniques for Tumor Characterization	1031
<i>E.I. Papageorgiou, P.P. Spyridonos, C.D. Stylios, P. Ravazoula, G.C. Nikiforidis, P.P. Groumpos</i>	
A Multi-stage Classification Method in Application to Diagnosis of Larynx Cancer	1037
<i>Danuta Rutkowska, Jacek K. Klimala</i>	
Multi-neural Network Approach for Classification of Brainstem Evoked Response Auditory	1043
<i>Mariusz Rybniak, Saliou Diouf, Abdennasser Chebira, Veronique Amarger, Kurosh Madani</i>	
The Study of Hierarchy Importance of Descriptive Attributes in Computer Assisted Classification of Melanocytic Skin Lesions	1050
<i>Aleksander Sokolowski, Alicja Dereń</i>	
Medical Knowledge Representation in Terms of IF-THEN Rules and the Dempster-Shafer Theory	1056
<i>Ewa Straszecka</i>	
Online Neural Network Training for Automatic Ischemia Episode Detection	1062
<i>D.K. Tasoulis, L. Vladutu, V.P. Plagianakos, A. Bezerianos, M.N. Vrahatis</i>	
Mechanical Applications	
Sequential and Distributed Evolutionary Computations in Structural Optimization	1069
<i>Tadeusz Burczyński, Wacław Kuś, Adam Długosz, Arkadiusz Poteralski, Mirosław Szczepaniak</i>	
Neural Analysis of Concrete Fatigue Durability by the Neuro-fuzzy FWNN	1075
<i>Magdalena Jakubek, Zenon Waszczyszyn</i>	
Neural and Finite Element Analysis of a Plane Steel Frame Reliability by the Classical Monte Carlo Method	1081
<i>Ewa Pabisek, Joanna Kaliszuk, Zenon Waszczyszyn</i>	
The Solution of an Inverse Problem in Plates by Means of Artificial Neural Networks	1087
<i>Grzegorz Piątkowski, Leonard Ziemiański</i>	
Filtering of Thermomagnetic Data Curve Using Artificial Neural Network and Wavelet Analysis	1093
<i>Łukasz Rauch, Jolanta Talar, Tomáš Žák, Jan Kusiak</i>	

Various Applications

Evolutionary Negotiation Strategies in Emerging Electricity Markets	1099
<i>Salem Al-Agtash</i>	
Evolutionary Algorithm for Scheduling of CHP Plant with Urban Heat Distribution Network	1105
<i>Krzysztof Dziedzicki, Andrzej Augusiak, Roman Śmierchalski</i>	
Semi-mechanistic Models for State-Estimation – Soft Sensor for Polymer Melt Index Prediction	1111
<i>Balazs Feil, Janos Abonyi, Peter Pach, Sandor Nemeth, Peter Arva, Miklos Nemeth, Gabor Nagy</i>	
Neural Approach to Time-Frequency Signal Decomposition	1118
<i>Dariusz Grabowski, Janusz Walczak</i>	
ANN Based Modelling and Correction in Dynamic Temperature Measurements	1124
<i>Lidia Jackowska-Strumillo</i>	
One Day Prediction of NIKKEI Index Considering Information from Other Stock Markets	1130
<i>Marcin Jaruszewicz, Jacek Mańdziuk</i>	
Application of Neural Network Topologies in the Intelligent Heat Use Prediction System	1136
<i>Leszek Kiełtyka, Robert Kucęba, Adam Sokółowski</i>	
Genetic Algorithm for Database Indexing	1142
<i>Marcin Korytkowski, Marcin Gabryel, Robert Nowicki, Rafał Scherer</i>	
Application of Neural Networks and Two Representations of Color Components for Recognition of Wheat Grains Infected by <i>Fusarium</i> <i>Culmorum Fungi</i>	1148
<i>Aleksander Kubiak, Zbigniew Mikrut</i>	
Hybrid Neural Model of the Sea Bottom Surface	1154
<i>Jacek Lubczonek</i>	
Fuzzy Economic Analysis of Simulated Discrete Transport System	1161
<i>Jacek Mazurkiewicz, Tomasz Walkowiak</i>	
A Survey on US Economic Sanction Effects on Iranian High Tech Industries: Fuzzy Logic Approach	1168
<i>Mohammad R. Mehregan, Hossein Safari, Parviz Naseri, Farshid Hosseini, Kumars Sharifi</i>	
Modeling of Optoelectronic Devices through Neuro-Fuzzy Architectures . .	1175
<i>Antonio Vanderlei Ortega, Ivan Nunes da Silva</i>	

Neural Network Based Simulation of the Sieve Plate Absorption Column in Nitric Acid Industry	1181
<i>Edward Rój, Marcin Wilk</i>	
Artificial Neural Networks for Comparative Navigation	1187
<i>Andrzej Stateczny</i>	
Predicting Women's Apparel Sales by Soft Computing	1193
<i>Les M. Sztandera, Celia Frank, Balaji Vemulapali</i>	
Model Improvement by the Statistical Decomposition	1199
<i>Ryszard Szupiluk, Piotr Wojewnik, Tomasz Zabkowski</i>	
Author Index	1205

<http://www.springer.com/978-3-540-22123-4>

Artificial Intelligence and Soft Computing — ICAISC 2004
7th International Conference Zakopane, Poland, June
7-11, 2004 Proceedings

Rutkowski, L.; Siekmann, J.; Tadeusiewicz, R.; Zadeh,
L.A. (Eds.)

2004, L, 1210 p. 596 illus. In 2 volumes, not available
separately., Softcover

ISBN: 978-3-540-22123-4