

The 2010 International Joint Conference on Neural Networks

(IJCNN 2010)

**Barcelona, Spain
18-23 July 2010**

Pages 1-840



IEEE Catalog Number: CFP10IJS-PRT
ISBN: 978-1-4244-6916-1

TABLE OF CONTENTS

Radial Basis Function Classifier Construction Using Particle Swarm Optimisation Aided Orthogonal Forward Regression.....	1
<i>Sheng Chen, Xia Hong, Chris J. Harris</i>	
Sparse Kernel Density Estimation Technique Based on Zero-Norm Constraint.....	7
<i>Xia Hong, Sheng Chen, Chris J. Harris</i>	
A Robust Wind Turbine Control using a Neural Network Based Wind Speed Estimator	13
<i>Oscar Barambones</i>	
Design of Dynamic Petri Recurrent-Fuzzy-Neural- Network for Robust Path Tracking Control of Mobile Robot	21
<i>Rong-Jong Wai, Chia-Ming Liu</i>	
Testing Adaptive Local Hyperplane for Multi-class Classification by Double Cross-Validation	29
<i>Tao Yang, Vojislav Kecman, Longbing Cao, Chengqi Zhang</i>	
Mandarin Stress Detection Using Hierarchical Model Based Boosting Classification and Regression Tree	34
<i>Chong-Jia Ni, Wen-Ju Liu, Bo Xu</i>	
An Urban Traffic Speed Fusion Method Based on Principle Component Analysis and Neural Network.....	39
<i>Chenyi Qiu, Xingquan Zuo, Chunlu Wang, Jianping Wu, Tianle Zhang</i>	
Curiosity and Pleasure.....	46
<i>Leonid I. Perlovsky, M.-C. Bonniot-Cabanac, M. Cabanac</i>	
Interior Point Based Continuous Methods for Linear Programming.....	49
<i>Li-Zhi Liao</i>	
Ternary Multiway Switch and its Implementation by Neuron-Like Element.....	52
<i>Takako Soma, Takashi Soma</i>	
Electricity Load Forecasting Based on Autocorrelation Analysis	59
<i>Rohen Sood, Irena Koprinska, Vassilios G. Agelidis</i>	
FBWN: An architecture of Fast Beta Wavelet Networks for Image Classification	67
<i>Olfa Jemai, Mourad Zayed, Chokri Ben Amar, Adel M. Alimi</i>	
Finding Association of Impact Factor for Breast Cancer Patient- A Novel Statistical Approach	75
<i>Kwok-Pan PANG, A. B. M. Shawkat ALI</i>	
Modeling the Listeria monocytogenes Survival/death Curves Using Wavelet Neural Networks.....	80
<i>M. Amina, V. S. Kodogiannis, E. Z. Panagou, G.-J. E. Nychas</i>	
Possibilities and Limitations of Decentralised Traffic Control Systems	88
<i>Sven Tomforde, Holger Prothmann, Jurgen Branke, Jorg Hahner, Christian Muller-Schloer, Hartmut Schmeck</i>	
Improving ANN Performance for Imbalanced Data Sets by Means of the NTIL Technique	97
<i>Carlos Vivaracho-Pascual, Arancha Simon-Hurtado</i>	
Creative Problem Solving: A CLARION theory	103
<i>Sebastien Helie, Ron Sun</i>	
Novel Algorithm for Bayesian Network Parameter Learning with Informative Prior Constraints.....	110
<i>Rui Chang, Wei Wang</i>	
Yet Rapid ICA: Applications to Un-Indexed Image-to-Image Retrieval.....	118
<i>Ryota Yokote, Yasuo Matsuyama</i>	
Evolutionary Classifier Ensembles for Semi-supervised Learning	126
<i>Qingjiu Zhang, Shiliang Sun</i>	
Neural Predictor Ensemble for Accurate Forecasting of PM10 Pollution.....	132
<i>K. Siwek, S. Osowski, M. Sowinski</i>	
Intelligent Integral Backstepping Sliding Mode Control Using Recurrent Neural Network for Magnetic Levitation System	139
<i>Faa-Jeng Lin, Syuan-Yi Chen</i>	
Nonlinear Dynamic System Identification Using Legendre Neural Network.....	146
<i>Jagdish C. Patra, Cedric Bornard</i>	
A Columnar Primary Visual Cortex (V1) Model Emulation Using a PS3 Cell-BE Array	153
<i>Michael J. Moore, Richard Linderman, Morgan Bishop, Robinson Pino</i>	
A Spiking Neural Network Alternative for the Analog to Digital Converter	161
<i>Jeffrey J. Lovelace, John T. Rickard, Krzysztof J. Cios</i>	
Combination of Supervised and Unsupervised Algorithms for Communication Systems with Linear Precoding.....	169
<i>Adriana Dapena, Paula M. Castro, Josmary Labrador</i>	
Evolutionary Strategy for Simultaneous Optimization of Parameters, Topology and Reservoir Weights in Echo State Networks	177
<i>Aida A. Ferreira, Teresa B. Ludermir</i>	
Neural-Based Approach to Perceptual Sparse Coding of Audio Signals	184
<i>Ramin Pichevar, Hossein Najaf-Zadeh, Frederic Mustiere</i>	
Recurrent Neural Networks Solving a Real Large Scale Mid-term Scheduling for Power Plants	192
<i>Ronaldo R. B. Aquino, Manoel A. Carvalho Jr., Otoni Nóbrega Neto, Milde M. S. Lira, Givanildo J. de Almeida, Solange N. N. Tiburcio</i>	

Hypoglycaemia Detection for Type 1 Diabetic Patients Based on ECG Parameters Using Fuzzy Support Vector Machine	198
<i>N. Nuryani, S. H. Ling, Hung T. Nguyen</i>	
Locally Linear Support Vector Machines and Other Local Models	205
<i>Vojislav Kecman, J. Paul Brooks</i>	
Application of Rough Set-based Neuro-fuzzy System in NIRS-based BCI for Assessing Numerical Cognition in Classroom.....	211
<i>Kai Keng Ang, Cuntai Guan, Kerry Lee, Jie Qi Lee, Shoko Nioka, Britton Chance</i>	
Semi-Supervised Learning for Weighted LS-SVM	218
<i>Mathias M. Adankon, Mohamed Cheriet</i>	
Binding Sparse Spatiotemporal Patterns in Spiking Computation	226
<i>Steve K. Esser, Anthony Ndirango, Dharmendra S. Modha</i>	
Spacecraft Coordination Control in 6DOF Based on Neural Network	235
<i>Haibo Min, Fuchun Sun, Shicheng Wang, Zhiguo Liu, Jinsheng Zhang</i>	
A New Delayed Projection Neural Network for Solving Quadratic Programming Problems.....	241
<i>Bonan Huang, Huaguang Zhang, Zhanshan Wang, Meng Dong</i>	
Neural-network Based Regression Model with Prior from Ranking Information	246
<i>Yajun Qu, Bo Dai, Baogang Hu</i>	
Learning to Recognize Objects Using Waves of Spikes and Spike Timing-dependent Plasticity	254
<i>Timothee Masquelier, Simon J. Thorpe</i>	
An Online Approach towards Self-generating Fuzzy Neural Networks with Applications.....	262
<i>Fan Liu, Meng Joo Er, Leszek Rutkowski</i>	
Stability Analysis of Self-Organizing Maps and Vector Quantization Algorithms	269
<i>Mauro Tucci, Marco Raugi</i>	
Proactive Reputation-Based Defense for MANETs Using Radial Basis Function Neural Networks	274
<i>Eyosias Y. Imana, Fredric M. Ham, William Allen, Richard Ford</i>	
Inflow Forecasting Models based on Artificial Intelligence.....	280
<i>Ronaldo R. B. Aquino, Milde M. S. Lira, Manoel H. N. Marinho, Isabela A. Tavares, Luiz. F. A. Cordeiro</i>	
A Quantified Sensitivity Measure of Radial Basis Function Neural Networks to Input Variation	286
<i>Xianming Chen, Xiaoqin Zeng, Rong Chu, Shuiming Zhong</i>	
Manifold Regularization for Structured Outputs via the Joint Kernel	292
<i>Chonghai Hu, James T. Kwok</i>	
Is the Connectionist Notion of Subconcepts Flawed?	300
<i>Asim Roy</i>	
Spatio-Temporal Sequence Learning of Visual Place Cells for Robotic Navigation	306
<i>Vu Anh Nguyen, Janusz A. Starzyk, Alex Leng Phuan Tay, Wooi-Boon Goh</i>	
An Adaptive Normalized Gaussian Network and Its Application to Online Category Learning	314
<i>Claudius Gläser, Frank Joublin</i>	
Semantic Description of Multimedia Contents for the Optimization of the Advertising Impact on TV Program Grids.....	322
<i>Teresa Garcia-Valverde, Alberto Caballero, Juan A. Botia, Antonio Gomez-Skarmeta</i>	
Simulating the Effects of Cortical Feedback in the Superior Colliculus with Topographic Maps	329
<i>Athanassios Pavlou, Matthew Casey</i>	
Fast Weight Calculation for Kernel-based Perceptron in Two-class Classification Problems.....	337
<i>M. Fernandez-Delgado, J. Ribeiro, E. Cernadas, S. Barro</i>	
Robust Stability Analysis of Linsker-Type Hebbian Learning Multi-Time Scale Neural Networks under Parametric Uncertainties	343
<i>Anke Meyer-Baese, Sylvain Lespinats, Ingo R. Keck, Elmar Lang</i>	
Unscented Grid Filtering and Elman Recurrent Networks	348
<i>Nikolay Y. Nikolaev, Derrick Mirikitani, Evgeni Smirnov</i>	
A Hybrid Batch SOM-NG Algorithm	355
<i>Ivan Machon-Gonzalez, Hilario Lopez-Garcia, Jose Luis Calvo-Rolle</i>	
Modifying the Learning Rate of FLNG Dealing with Imbalanced Datasets.....	360
<i>Ivan Machon-Gonzalez, Hilario Lopez-Garcia, Jose Luis Calvo-Rolle</i>	
Configuring the Stochastic Helmholtz Machine for Subcortical Emotional Learning.....	365
<i>Chi-Yung Yau, Kevin Burn, Stefan Wermter</i>	
Robust Pattern Recognition Using Chaotic Dynamics in Attractor Recurrent Neural Network	373
<i>M. Azarpour, S. A. Seyyedsalehi, A. Taherkhani</i>	
Accelerating Neuro-Evolution by Compilation to Native Machine Code	379
<i>Nils T Siebel, Andreas Jordt, Gerald Sommer</i>	
Topographic Under-Sampling for Unbalanced Distributions.....	387
<i>Fatma Hamdi, Mustapha Lebbah, Younes Bennani</i>	
Convergence Improvement of Active Set Support Vector Training.....	393
<i>Ryousuke Yabuwaki, Shigeo Abe</i>	
Complexity Measures of Supervised Classifications Tasks: A Case Study for Cancer Gene Expression Data	398
<i>Marcilio C. P. de Souto, Ana C. Lorena, Newton Spolaor, Ivan G. Costa</i>	
Unsupervised and Adaptive Category Classification for a Vision-Based Mobile Robot.....	405
<i>Masahiro Tsukada, Hirokazu Madokoro, Kazuhito Sato</i>	
A Fast Shape Retrieval using Dendrogram	411
<i>Michikazu Kikugawa, Won-Du Chang, Soonwook Hwang, Jungpil Shin</i>	

Kernel Machines for Malware Classification and Similarity Analysis	416
<i>M. Shankarapani, K. Kancherla, S. Ramammoorthy, R. Movva, S. Mukkamala</i>	
A Novel Ensemble Classifier Approach using Weak Classifier Learning on Overlapping Clusters	422
<i>Ashfaqur Rahman, Brijesh Verma</i>	
An Improved Multi-label Classification Based on Label Ranking and Delicate Boundary SVM.....	429
<i>Benhui Chen, Weifeng Gu, Jinglu Hu</i>	
Stock Price Prediction using Generic Self-Evolving Takagi-Sugeno-Kang (GSETSK) Fuzzy Neural Network.....	435
<i>Ngoc Nam Nguyen, Chai Quek</i>	
Neocortical Frame-free Vision Sensing and Processing through Scalable Spiking ConvNet Hardware	443
<i>L. Camunas-Mesa, J. A. Perez-Carrasco, C. Zamarreno-Ramos, T. Serrano-Gotarredona, B. Linares-Barranco</i>	
Global Uniform Asymptotic Stability of Memristor-based Recurrent Neural Networks with Time Delays	451
<i>Jin Hu, Jun Wang</i>	
Incomplete Cholesky Decomposition Based Kernel Principal Component Analysis for Large-scale Data set	459
<i>Weiya Shi, Yue-Fei Guo</i>	
Clustering using SOFM and Genetic Algorithm.....	465
<i>J. C. Palomares Salas, A. Agüera Pérez, J. J. G. de la Rosa, J. G. Ramiro</i>	
Simulating Probability Learning and Probabilistic Reversal Learning Using the Attention-Gated Reinforcement Learning (AGREL) Model	471
<i>Burak Erdeniz, Nart Bedin Atalay</i>	
An Associative Memory System for Incremental Learning and Temporal Sequence.....	477
<i>Furuo Shen, Hui Yu, Wataru Kasai, Osamu Hasegawa</i>	
Quadrivariate Empirical Mode Decomposition	485
<i>Naveed ur Rehman, Danilo P. Mandic</i>	
A Neuronal Multisensory Processing Simulator	492
<i>H. K. Lim, L. P. Keniston, J. H. Shin, C. Nguyen, M. A. Meredith, K. J. Cios</i>	
Off-line Memory Reprocessing Following On-line Unsupervised Learning Strongly Improves Recognition Performance in a Hierarchical Visual Memory	499
<i>Jenia Jitsev, Christoph von der Malsburg</i>	
A Robust Reinforcement based Self Constructing Neural Network.....	507
<i>Andreas Huemer, Mario Gongora, David Elizondo</i>	
Algorithm and Software for Simulation of Spiking Neural Networks on the Multi-Chip SpiNNaker System	514
<i>Xin Jin, Francesco Galluppi, Cameron Patterson, Alexander Rast, Sergio Davies, Steve Temple, Steve Furber</i>	
A Quantum-Inspired Hybrid Methodology for Financial Time Series Prediction	522
<i>Ricardo de A. Araujo, Adriano L. I. de Oliveira, Sergio C. B. Soares</i>	
Choice of Initial Bias in Max-min Fuzzy Neural Networks	530
<i>Jie Yang, Long Li, Liu Yan, Jing Wang, Wei Wu</i>	
Modular Neural Networks for Person Recognition Using Segmentation and the Iris Biometric Measurement with Image Pre-processing	533
<i>Fernando Gaxiola, Patricia Melin, Miguel López</i>	
A New Approach for Fuzzy Feature Extraction based on Pixel's Brightness	540
<i>M. Lopez, P. Melin, O. Castillo</i>	
Time Series Forecasting with Appetitive Reward-based Pseudo-Outer-Product Fuzzy Neural Network	547
<i>Eng Yeow Cheu, Chai Quek, See Kiong Ng</i>	
Micro-scale Smart Grid Optimization	555
<i>Nathan Kowahl, Anthony Kuh</i>	
Evolutionary Neural Network Model of Universal Grammar	563
<i>Motohiro Saiki, Satoshi Matsuda</i>	
Robot Planning by Cooperation of Hopfield Networks – A Case of Warehouse Keeper Puzzle (sokoban) –	568
<i>Kairi Miyazaki, Satoshi Matsuda</i>	
An Efficient ICA Approach Based on Neural Network Framework for Biomedical Applications	574
<i>Yue-Der Lin, Chih-Yu Hsu, Hung-Yun Chen, Kuo-Kun Tseng</i>	
Adaptive Washout Filter Design with Human Visual-Vestibular Based (HVVB) for VR-based Motion Simulator	582
<i>Chin-I Huang</i>	
Correntropy-based Density-preserving Data Sampling As an Alternative to Standard Cross-validation	588
<i>Marcin Budka, Bogdan Gabrys</i>	
DNA Microarray Analysis Using Equalized Orthogonal Mapping	596
<i>Jagdish C. Patra, Nyttie V. George, Pramod K. Meher</i>	
Negative Correlation Learning for Classification Ensembles	604
<i>Shuo Wang, Huanhuan Chen, Xin Yao</i>	
Quaternion-valued Short Term Forecasting of Wind Profile	612
<i>C. Cheong Took, D. P. Mandic, K. Aihara</i>	
Multi-Label Classification by ART-based Neural Networks and Hierarchy Extraction	618
<i>Fernando Benites, Florian Brucker, Elena Sapozhnikova</i>	
Bayesian Estimates from Heterogeneous Population Codes.....	627
<i>Brian J Fischer</i>	
A Clustering Ensemble Method for Clustering Mixed Data	634
<i>Jamil Al-Shaqsi, Wenjia Wang</i>	
Efficient Energy Landscape Transformation in the Problem of Binary Minimization.....	642
<i>Ya. M. Karandashev, B. V. Kryzhanovsky</i>	

Hippocampus As Unitary Coherent Particle Filter	.....	648
<i>Charles Fox, Tony Prescott</i>		
Analysis of Dynamic Linear and Non-linear Memristor Device Models for Emerging Neuromorphic Computing Hardware Design	.....	656
<i>Nathan R. McDonald, Robinson E. Pino, Peter J. Rozwood, Bryant T. Wysocki</i>		
A Unified Framework for Volatile Organic Compound Classification and Regression	.....	661
<i>Mehmet K. Muezzinoglu, Alexander Vergara, Ramon Huerta</i>		
On a Training Scheme Based on Orthogonalization and Thresholding for a Nonparametric Regression Problem	.....	668
<i>Katsuyuki Hagiwara</i>		
Content Aware Image Retrieval with Partition-Based Color Features	.....	676
<i>Cheng-Hisung Hsieh, Fang-Jung Chang, Qiangfu Zhao</i>		
Two Perspectives to Investigate the Intrinsic Organization of the Dynamic and Ongoing Spontaneous Brain Activity in Humans	.....	683
<i>Zhijiang Wang, Jiming Liu, Ning Zhong, Haiyan Zhou, Yulin Qin</i>		
Activity Discovery from Video Employing Soft Computing Relations	.....	687
<i>Luis Patino, Francois Bremond, Monique Thonnat</i>		
SOAR – Sparse Oracle-based Adaptive Rule Extraction: Knowledge Extraction from Large-scale Datasets to Detect Credit Card Fraud	.....	695
<i>Nick F. Ryman-Tubb, Artur d'Avila Garcez</i>		
Semantic Subspace Learning with Conditional Significance Vectors	.....	704
<i>Nandita Tripathi, Stefan Wermter, Chihi Hung, Michael Oakes</i>		
Selective Attention Improves Self-organization of Cortical Maps with Multiple Inputs	.....	712
<i>Thomas Trappenberg, Aya Saito, Pitoyo Hartono</i>		
A Rebuilt Clone Elastic Net Algorithm for Traveling Salesman Problem	.....	716
<i>Gang Yang, Junyan Yi, Xiaofeng Meng</i>		
Negative Emotion Detection Using the Heart Rate Recovery and Time for Twelve-Beats Heart Rate Decay after Exercise Stress Test	.....	723
<i>Chun-Han Yang, Jue-Long Wang, Ko-Long Lin, Yau-Hwang Kuo, Kuo-Sheng Cheng</i>		
Modeling the Beneficial Effects of Incubation in Creative Brainstorming	.....	729
<i>Aydin Farajidavar, Daniel S. Levine, Nicholas W. Kohn, Paul B. Paulus</i>		
Combining Probabilistic Neural Networks and Decision Trees for Maximally Accurate and Efficient Accident Prediction	.....	735
<i>Tatiana Tambouratzis, Dora Souliou, Miltiadis Chalikias, Andreas Gregoriades</i>		
Identification of Improper Processes by Variable Tap-length Complex-valued Adaptive Filters	.....	743
<i>Bukhari Che Ujang, Clive Cheong Took, Danilo P. Mandic</i>		
Density Estimation-Based Document Categorization using von Mises-Fisher Kernels	.....	749
<i>Andrew Skabar, Shahmeer Memon</i>		
Optimal Synaptic Learning in Non-linear Associative Memory	.....	757
<i>Andreas Knoblauch</i>		
Comparison between Different Methods for Developing Neural Network Topology Applied to a Complex Polymerization Process	.....	764
<i>Silvia Curteanu, Florin Leon, Renata Furtuna, Elena Niculina Dragoi, Neculai Curteanu</i>		
Zip Nets: Efficient Associative Computation with Binary Synapses	.....	772
<i>Andreas Knoblauch</i>		
Unsupervised Learning via Iteratively Constructed Clustering Ensemble	.....	780
<i>Yun Yang, Ke Chen</i>		
Mapping the Diffusion Network into a Stochastic System in Very Large Scale Integration	.....	788
<i>Chen-Han Chien, Chih-Chen Lu, Hsin Chen</i>		
Neural Network with Ensembles	.....	795
<i>Ernst Kussul, Oleksandr Makeyev, Tatiana Baidyk, Daniel Calderon Reyes</i>		
Projection Vector Machine: One-Stage Learning Algorithm from High-Dimension Small-Sample Data	.....	802
<i>Wanyu Deng, Qinghua Zheng, Shiguo Lian, Lin Chen, Xin Wang</i>		
Self Organizing Maps with the Correntropy Induced Metric	.....	810
<i>Rakesh Chalasani, Jose C. Principe</i>		
Identifying Fiber Bundles with Regularised k-means Clustering Applied to the Grid-based Data	.....	816
<i>Vladimir Nikulin, Geoffrey J. McLachlan</i>		
Using Multiple Measures to Predict Confidence in Instance Classification	.....	824
<i>Kristine Monteith, Tony Martinez</i>		
Data-Brain Driven Multi-aspect Mining Process Planning	.....	832
<i>Ning Zhong, Jianhui Chen</i>		
A Low-Power, High-Resolution WTA Utilizing Translinear-Loop Pre-Amplifier	.....	836
<i>Hung-Yi Hsieh, Kea-Tiong Tang, Zen-Huan Tsai, Hsin Chen</i>		
Segmentation of Head MR Images Using Hybrid Neural Networks of Unsupervised Learning	.....	841
<i>Toshimitsu Otani, Kazuhito Sato, Hirokazu Madokoro, Atsushi Inugami</i>		
Application of Artificial Neural Networks and Related Techniques to Intrusion Detection	.....	848
<i>Christian Bitter, David A. Elizondo, Tim Watson</i>		
Reaction-Diffusion Based Model to Develop Binocular Simple Cells in Visual Cortex along with Cortical Maps	.....	856
<i>M Sultan, M Siddiqui, Basabi Bhaumik</i>		
Bio-Inspired Model for Robust Motion Detection Under Noisy Conditions	.....	864
<i>Russell S. A. Brinkworth, David C. O'Carroll</i>		

A Hybrid Grey-Fuzzy-Neural Networks Model for Enterprises' Bankruptcy	872
<i>Emil Scarlat, Camelia Delcea</i>	
A Kernel K-means Clustering Method for Symbolic Interval Data	880
<i>Anderson F. B. F. Costa, Bruno A. Pimentel, Renata M. C. R. de Souza</i>	
Integrated Time Series Forecasting Approaches Using Moving Average, Grey Prediction, Support Vector Regression and Bagging for NNGC	886
<i>Chihli Hung, Xin-Yi Huang, Hao-Kai Lin, Yen-Hsu Hou</i>	
Learning and Retrieval of Hierarchically Organized Information in a Simple, One-layered RNN	892
<i>Holk Cruse, Malte Schilling</i>	
A Universally Manipulable Body Model: Application of the MMC Principle to a Dual Quaternion Representation	901
<i>Malte Schilling</i>	
Boot.EXPOS in NNGC Competition	909
<i>Clara Cordeiro, M. Manuela Neves</i>	
The Leaky Integrate-and-Fire Neuron: A Platform for Synaptic Model Exploration on the SpiNNaker Chip	916
<i>A. D. Rast, F. Galluppi, X. Jin, S. B. Furber</i>	
Parallel Implementation of a Spiking Neuronal Network Model of Unsupervised Olfactory Learning on NVidiar CUDA™	924
<i>Thomas Nowotny</i>	
Neural Classifier for Larvae Recognition	932
<i>Tatiana Baidyk, Ernst Kussul, Marco A. Rodriguez Flores, Alejandro Vega</i>	
Identification of Twin-Tanks Dynamics Using Adaptive Wavelet Differential Neural Networks	936
<i>F. Jahangiri, A. Doustmohammadi, M. B. Menhaj</i>	
Asymmetric-margin Support Vector Machines for Lung Tissue Classification	941
<i>Jimison Iavindrasana, Adrien Depewi, Gilles Cohen, Antoine Geissbuhler, Henning Muller</i>	
Human Activity Detection using Spiking Neural Networks Regulated by A Gene Regulatory Network	949
<i>Yan Meng, Yaochu Jin, Jun Yin, Matthew Conforth</i>	
Direct Current Motor Control based on High Order Neural Networks using Stochastic Estimation	955
<i>Carlos E. Castaneda, P. Esquivel</i>	
A High Performance SSVEP-BCI without Gazing.	963
<i>M. A. Lopez-Gordo, F. Pelayo, A. Prieto</i>	
Evolutionary Approach to ICA-R	968
<i>Swathi S. Kavuri, Jacek M Zurada, Jagath C. Rajapakse</i>	
Investigating the Variation of Orientation Tuning in a Computational Model of the Visual Cortex	974
<i>A. Ravishankar Rao, Guillermo A. Cecchi</i>	
Functional Mapping with Complex Higher Order Compensatory Neuron Model	982
<i>B. K. Tripathi, P. K. Kalra</i>	
Unifying Quality Metrics for Reservoir Networks	990
<i>Thomas E. Gibbons</i>	
A Force Field Driven SOM for Boundary Detection	997
<i>Yu He, Songhua Xu, Willard L. Miranker</i>	
Illumination Invariant Lane Color Recognition by using Road Color Reference & Neural Networks	1004
<i>Hyun-Chul Choi, Se-Young Oh</i>	
Visualizing Support Vectors and Topological Data Mapping for Improved Generalization Capabilities	1009
<i>Hirokazu Madokoro, Kazuhito Sato</i>	
A Customer Intention Aware System for Document Analysis	1016
<i>Jie Ji, Kunita Daichi, Qiangfu Zhao</i>	
Development of Comparative Reading System Using 1D SOM for Brain Dock Examinations	1022
<i>Kazuhito SATO, Sakura Kadowaki, Hirokazu Madokoro, Atsushi Inugami</i>	
WIPs Real-time Control Using RIBTC	1029
<i>Chih-Hui Chiu, Ya-Fu Peng, You-Wei Lin</i>	
An Improved SOM-based Visualization Technique for DNA Microarray Data Analysis	1035
<i>Jagdish C. Patra, Jacob Abraham, Pramod K. Meher, Goutam Chakraborty</i>	
Critical Branching Neural Computation	1042
<i>Christopher T. Kello, Marshall R. Mayberry</i>	
A Probabilistic Framework for Joint Approximate Diagonalization	1049
<i>Yoshitatsu Matsuda, Kazunori Yamaguchi</i>	
A Framework for Developing Neural Networks Based Mobile Appliances	1055
<i>Paolo Motto Ros, Eros Pasero</i>	
On the Effectiveness of Discretization on Gene Selection of Microarray Data	1063
<i>V. Bolon-Canedo, N. Sanchez-Marono, A. Alonso-Betanzos</i>	
Collaborative Pedestrian Tracking with Multiple Cameras: Data Fusion and Visualization	1071
<i>Daw-Tung Lin, Kai-Yung Huang</i>	
Augmented Efficient BackProp for Backpropagation Learning in Deep Autoassociative Neural Networks	1079
<i>Mark J. Embrechts, Blake J. Hargis, Jonathan D. Linton</i>	
Comparison of the Bayesian and Neural Network Algorithms in Nonlinear Navigation Estimation Problems	1085
<i>O. A. Stepanov, V. A. Vasiliev</i>	
On Autocorrelation Based on Hermann Weyl's Discrepancy Norm for Time Series Analysis	1092
<i>Jean-Luc Bouchot, Johannes Himmelbauer, Bernhard Moser</i>	
Neuromimetic Encoding/decoding of Spatiotemporal Spiking Signals from an Artificial Touch Sensor	1099
<i>Luca Leonardo Bologna, Romain Brasselet, Marco Maggiali, Angelo Arleo</i>	

Delay-Induced Order in Pulse-Coupled Bifurcating Neurons	1105
<i>Kozo Hisamatsu, Toshimichi Saito</i>	
Complex-valued Self-organizing Map Clustering Using Complex Inner Product in Active Millimeter-wave Imaging	1111
<i>Takashi Aoyagi, Damri Radenamad, Yukimasa Nakano, Akira Hirose</i>	
Two-Dimensional Neighborhood Discriminant Projection	1117
<i>Shan-Wen Zhang, Ying-Ke Lei, De-Shuang Huang</i>	
Nonlinear Regularization Path for the Modified Huber loss Support Vector Machines	1124
<i>Masayuki Karasuyama, Ichiro Takeuchi</i>	
Temporally Coupled Principal Component Analysis: A Probabilistic Autoregression Method	1132
<i>Jacqueline Christmas, Richard Everson</i>	
Investigation of Generalized Hopfield Model by Statistical Physics Methods	1140
<i>Boris V. Kryzhanovsky, Leonid B. Litinskii</i>	
Multi-task Learning for One-class Classification	1146
<i>Haiqin Yang, Irwin King, Michael R. Lyu</i>	
Adaptive Clustering of Production State based on Kernel Entropy Component Analysis	1154
<i>Fei He, Min Li, Jian-hong Yang, Jin-wu Xu</i>	
Memory in Reservoirs for High Dimensional Input	1162
<i>Michiel Hermans, Benjamin Schrauwen</i>	
Sensitivity Analysis for Time Lag Selection to Forecast Seasonal Time Series using Neural Networks and Support Vector Machines	1169
<i>Paulo Cortez</i>	
Virtual k-fold Cross Validation: An Effective Method for Accuracy Assessment	1177
<i>Cesare Alippi, Manuel Roveri</i>	
Orthogonal Linear Local Spline Discriminant Embedding for Face Recognition	1183
<i>Ying-Ke Lei, Rong-Xiang Hu, Lei Tang, Shan-Wen Zhang, De-Shuang Huang</i>	
A Novel Constraint Satisfaction Problem Solver for Self-Configuring Distributed Systems with Highly Dynamic Behavior	1191
<i>Benjamin Satzger, Faruk Bagci, Theo Ungerer</i>	
High Performance Spike Detection and Sorting using Neural Waveform Phase Information and SOM Clustering	1197
<i>Chenhui Yang, Yuan Yuan, Jennie Si</i>	
A Bayesian Framework for Active Learning	1204
<i>Richard Fredlund, Richard M. Everson, Jonathan E. Fieldsend</i>	
Grounded Symbols in the Brain	1212
<i>Leonid I. Perlovsky, Roman Ilin</i>	
Drive for Creativity	1222
<i>Leonid I. Perlovsky, Daniel S. Levine</i>	
Relational Topological Clustering	1228
<i>Lazhar Labiod, Nistor Grozavu, Younes Bennani</i>	
Neural Network Based Drug Design for Diabetes Mellitus Using QSAR with 2D and 3D Descriptors	1236
<i>Jagdish C. Patra, Kenny H. K. Chua</i>	
A Parallel Perceptron Network for Classification with Direct Calculation of the Weights Optimizing Error and Margin	1244
<i>M. Fernandez-Delgado, J. Ribeiro, E. Cernadas, S. Barro</i>	
Quantum Morphogenetic System in View-Invariant Recognition	1252
<i>G. Resconi, C. K. Loo, N. W. Tay</i>	
Neurobiological Challenge on Visually Attentive Navigation: Who Triggers the Development of Hippocampal Place Fields? Who Responds for the Appearance of Motivational Status to Navigate?	1259
<i>Renan W. F. Vitral</i>	
Forecasting Airborne Pollen Concentration of Poaceae (Grass) and Oleaceae (Olive), using Artificial Neural Networks and Genetic Algorithms, in Thessaloniki, Greece	1265
<i>Dimitris Voukantsis, Kostas D. Karatzas, Athanasios Damialis, Despoina Vokou</i>	
Alpha-EM Gives Fast Hidden Markov Model Estimation: Derivation and Evaluation of Alpha-HMM	1271
<i>Yasuo Matsuyama, Ryunosuke Hayashi</i>	
An ANN Based Automatic Hyperspectral Image Processing System with Adaptive Dimensionality Reduction	1279
<i>Abraham Prieto, D. Souto, R. J. Duro, F. López-Peña</i>	
Performance Evaluation of a Community Structure Finding Algorithm Using Modularity and C-rand Measures	1287
<i>Harun Pirim, Dilip Gautam, Tanmay Bhownik, Andy D. Perkins, Burak Eksioglu</i>	
Automatic Concept Type Identification from Learning Resources	1295
<i>Sahar Changuel, Nicolas Labroche, Bernadette Bouchon-Meunier</i>	
Context-dependent Environmental Sound Monitoring Using SOM Coupled with LEGION	1301
<i>Damiano Oldoni, Bert De Coensel, Michael Rademaker, Bernard De Baets, Dick Botteldooren</i>	
An Insect Brain Computational Model Inspired by <i>Drosophila melanogaster</i>: Architecture Description	1309
<i>P. Arena, C. Berg, L. Patane, R. Strauss, P. S. Termini</i>	
An Increasing Hybrid Morphological-Linear Perceptron with Pseudo-Gradient-Based Learning and Phase Adjustment for Financial Time Series Prediction	1316
<i>Ricardo de A. Araujo, Peter Sussner</i>	
Robust Relevance Vector Machine with Noise Variance Coefficient	1324
<i>Min Han, Yao Zhao</i>	

Hybrid System for Cardiac Arrhythmia Classification with Fuzzy K-Nearest Neighbors and Multi Layer Perceptrons Combined by a Fuzzy Inference System	1330
<i>Eduardo Ramírez, Oscar Castillo, José Soria</i>	
Investigation of Mel Frequency Cepstrum Coefficients Parameters for Classification of Infant Cries with Hypothyroidism using MLP Classifier	1336
<i>A. Zabidi, W. Mansor, Lee Yoot Khuan, I. M. Yassin, R. Sahak</i>	
Impulsive Hybrid Synchronization of Chaotic Discrete-time Delayed Neural Networks	1340
<i>Eva Kaslik, S. Sivasundaram</i>	
Gesture Recognition on Few Training Data using Slow Feature Analysis and Parametric Bootstrap	1348
<i>Patrick Koch, Wolfgang Konen, Kristine Hein</i>	
Maximizing Pattern Separation in Discretizing Continuous Features for Classification Purposes	1356
<i>Enrico Ferrari, Marco Muselli</i>	
A Classifier with Clustered Sub Classes for the Classification of Suspicious Areas in Digital Mammograms	1364
<i>Peter Mc Leod, Brijesh Verma</i>	
Uncertainty with the Gamma Test for Model Input Data Selection	1372
<i>Dawei Han, Weizhong Yan, Alireza Moghaddam Nia</i>	
Empirical Mode Decomposition - An Introduction	1377
<i>A. Zeiler, R. Faltermeier, I. R. Keck, A. M. Tome, C. G. Puntonet, E. W. Lang</i>	
Insect Inspired Unsupervised Learning for Tactic and Phobic Behavior Enhancement in a Hybrid Robot	1385
<i>Paolo Arena, Sébastien De Fiore, Luca Patane, Massimo Pollino, Cristina Ventura</i>	
Sliding Empirical Mode Decomposition	1393
<i>R. Faltermeier, A. Zeiler, I. R. Keck, A. M. Tome, A. Brawanski, E. W. Lang</i>	
Brain Status Data Analyzed by Empirical Mode Decomposition	1401
<i>A. Zeiler, R. Faltermeier, I. R. Keck, A. M. Tome, A. Brawanski, C. G. Puntonet, E. W. Lang</i>	
Sliding Mode Online Learning for Flight Control Applications in Unmanned Aerial Systems	1409
<i>Thomas Krüger, Michael Mößner, Andreas Kuhn, Joachim Axmann, Peter Vörsmann</i>	
Cerebellar Spiking Engine: Towards Object Model Abstraction in Manipulation	1417
<i>N. R. Luque, J. A. Garrido, R. R. Carrillo, E. Ros</i>	
A Privacy Attack that Removes the Majority of the Noise From Perturbed Data	1425
<i>Michał Sramka</i>	
Batch-Learning Self-Organizing Map with Weighted Connections Avoiding False-Neighbor Effects	1433
<i>Haruna Matsushita, Yoshifumi Nishio</i>	
Training a Spiking Neural Network to Control a 4-DoF Robotic Arm based on Spike Timing-Dependent Plasticity	1439
<i>Alexandros Bouganis, Murray Shanahan</i>	
Power System Controller Design: A Comparison between Breeder Genetic Algorithm and Population Based Incremental Learning	1447
<i>S. P. Sheetekela, K. A. Folly</i>	
Improved Learning in Grid-to-Grid Neural Network via Clustering	1455
<i>W. White, K. Iftekharuddin, A. Bouzerdoum</i>	
A Neural Model Approach for Regularization in the Mean Estimation Case	1462
<i>Sergio Decherchi, Mauro Parodi, Sandro Ridella</i>	
Multi-Resolution State-Space Discretization for Q-Learning with Pseudo-Randomized Discretization	1469
<i>Amanda Lampert, John Valasek, Mrinal Kumar</i>	
An Insect Brain Computational Model Inspired by <i>Drosophila melanogaster</i>: Simulation Results	1477
<i>Paolo Arena, Luca Patane, Pietro Savio Termini</i>	
Learning Nonlinearly Separable mod k Addition Problem Using a Single Multi-Valued Neuron with a Periodic Activation Function	1485
<i>Igor Aizenberg, Matthew Caudill, Jacob Jackson, Shane Alexander</i>	
Design and Analysis of the WCCI 2010 Active Learning Challenge	1493
<i>Isabelle Guyon, Gavin Cawley, Gideon Dror, Vincent Lemaire</i>	
Dynamic System Eigenvalue Extraction using a Linear Echo State Network for Small-Signal Stability Analysis – A Novel Application	1501
<i>Jiaqi Liang, Jing Dai, Ganesh K. Venayagamoorthy, Ronald G. Harley</i>	
Application of NNT in Wind Speed Forecasting	1509
<i>J. C. Palomares Salas, J. J. G. de la Rosa, J. G. Ramiro, A. Agüera Pérez</i>	
Biologically Plausible Connectionist Prediction of Natural Language Thematic Relations	1515
<i>João Luís Garcia Rosa</i>	
Fusing Bottom-up and Top-down Pathways in Neural Networks for Visual Object Recognition	1523
<i>Yuhua Zheng, Yan Meng, Yaochu Jin</i>	
Adaptive Dynamic Programming for a Class of Discrete-Time Non-Affine Nonlinear Systems with Time-Delays	1531
<i>Derong Liu, Qinglai Wei</i>	
Optimization of Type-2 Fuzzy Systems Based on the Level of Uncertainty, Applied to Response Integration in Modular Neural Networks with Multimodal Biometry	1537
<i>D. Hidalgo, P. Melin, O. Castillo, G. Licea</i>	
First-order Logic Learning in Artificial Neural Networks	1543
<i>Mathieu Guillame-Bert, Krysia Broda, Artur d'Avila Garcez</i>	
Feature Selection for Support Vector Regression via Kernel Penalization	1551
<i>Sebastian Maldonado, Richard Weber</i>	
Direct Torque Adaptive Vector Neural Control of a Three-Phase Induction Motor	1558
<i>Ieroham S. Baruch, Carlos R. Mariaca-Gaspar, Irving Pavel de la Cruz, A. Castillo, Oscar Castillo</i>	

Cost-Sensitive Learning Methods for Imbalanced Data	1566
<i>Nguyen Thai-Nghe, Zeno Ganter, Lars Schmidt-Thieme</i>	
An Ensemble Classifier for Offline Cursive Character Recognition Using Multiple Feature Extraction Techniques	1574
<i>Rafael M. O. Cruz, George D. C. Cavalcanti, Tsang Ing Ren</i>	
Eigenposes: Using Principal Components to Describe Body Configuration for Analysis of Postural Control Dynamics	1582
<i>Joseph D. Skufca, Erik M. Boltt, Rakesh Pilkar, Charles J. Robinson</i>	
A Comparative Study of Urban Traffic Signal Control with Reinforcement Learning and Adaptive Dynamic Programming	1585
<i>Yujie Dai, Dongbin Zhao, Jianqiang Yi</i>	
Dimensionality Reduction using Compressed Sensing and its Application to a Large-Scale Visual Recognition Task.....	1592
<i>Jie Yang, Abdesselam Bouzerdoum, Fok Hing Chi Tivive, Son Lam Phung</i>	
Image Compression with Hardware Self-Organizing Map	1600
<i>Hiroomi Hikawa, Kenji Doumoto, Seiji Miyoshi, Yutaka Maeda</i>	
Classification of Musical Styles Using Liquid State Machines.....	1608
<i>Han Ju, Jian-Xin Xu, Antonius M. J. VanDongen</i>	
Self-Organizing Neural Networks for Behavior Modeling in Games	1615
<i>Shu Feng, Ah-Hwee Tan</i>	
Deep Auto-Encoder Neural Networks in Reinforcement Learning.....	1623
<i>Sascha Lange, Martin Riedmiller</i>	
EEG Frequency Analysis for Dozing Detection System.....	1631
<i>Yohei Tomita, Yasue Mitsukura, Toshihisa Tanaka, Jianting Cao</i>	
The Central Control of Oriented Locomotion in Insects - Towards a Neurobiological Model	1635
<i>Roland Strauss, Christian Berg</i>	
Use of Artificial Neural Networks for Improving Fiber Optic Microbend Sensor Performance.....	1643
<i>H. S. Efendioglu, T. Yildirim, K. Fidanboylu</i>	
Correlation Detection with Firing Rate Estimation Based on Temporal Coincidence Coding.....	1649
<i>Xu Wang, Zhi-Qiang Cao, Zeng-Guang Hou, Long Cheng, Min Tan</i>	
Central England Temperatures and Solar Activity: A Computational Intelligence Approach.....	1655
<i>Julio J. Valdes, Antonio Pou</i>	
Learning Artificial Neural Networks Multiclassifiers by Evolutionary Multiobjective Differential Evolution Guided by Statistical Distributions.....	1663
<i>M. Cruz-Ramirez, C. Hervas-Martinez, J. C. Fernandez, J. Sanchez-Monedero</i>	
Complex ICA-R	1671
<i>Jagath C. Rajapakse, Wenda Chen</i>	
Model Selection for Support Vector Machines: Advantages and Disadvantages of the Machine Learning Theory	1679
<i>Davide Anguita, Alessandro Ghio, Noemi Greco, Luca Oneto, Sandro Ridella</i>	
A Method to Build a Representation Using a Classifier and Its Use in a K Nearest Neighbors-based Deployment.....	1687
<i>Vincent Lemaire, Marc Boullé, Fabrice Clérot, Pascal Gouzien</i>	
Heterogeneous Bayesian Ensembles for Classifying Spam Emails.....	1695
<i>Wenjia Wang</i>	
Ethical and Legal Issues of the Use of Computational Intelligence Techniques in Computer Security and Computer Forensics	1703
<i>Bernd Stahl, David Elizondo, Moria Carroll-Mayer, Yingquin Zheng, Kutoma Wakunma</i>	
Classifying Means of Transportation Using Mobile Sensor Data	1711
<i>Theresa Nick, Edmund Coersmeier, Jan Geldmacher, Juergen Goetze</i>	
Testing Olfactory Models with an Artificial Experimental Platform.....	1717
<i>E. Martinelli, D. Polese, F. Dini, R. Paolesse, D. Filippini, A. D'Amico, D. Schild, I. Lundstrom, C. Di Natale</i>	
Creating Health Typologies with Random Forest Clustering	1723
<i>Ping Sun, Irena Begaj, Iris Fermin, Jim McManus</i>	
Digital Spike Maps and Learning of Spike Signals.....	1730
<i>Takashi Ogawa, Toshimichi Saito</i>	
Learning Objects on the Fly – Object Recognition for the Here and Now	1736
<i>Christian Faubel, Gregor Schoner</i>	
Robust Mixture Modeling using the Pearson Type VII Distribution	1744
<i>Jianyong Sun, Ata Kabani, Jonathan M. Garibaldi</i>	
Dynamic Segmentation using Fuzzy Oscillatory Networks	1751
<i>Lester Lehn Solbakken</i>	
Comparison of Range Check Classifier and Hybrid Network Classifier for Hand Sign Recognition System	1759
<i>Hiroomi Hikawa, Seito Yamazaki, Tatsuya Ando, Seiji Miyoshi, Yutaka Maeda</i>	
Multiclass Classifiers Vs Multiple Binary Classifiers Using Filters for Feature Selection	1767
<i>N. Sanchez-Marono, A. Alonso-Betanzos, P. Garcia-Gonzalez, V. Bolon-Canedo</i>	
Content-Based Spam Filtering.....	1775
<i>Tiago A. Almeida, Akebo Yamakami</i>	
Multiple Kernel Learning with ICA: Local Discriminative Image Descriptors for Recognition.....	1782
<i>Si-Yao Fu, Guo-Sheng Yang, Zeng-Guang Hou</i>	
Non-destructive Classification of Watermelon Ripeness using Mel-frequency Cepstrum Coefficients and Multilayer Perceptrons	1788
<i>Shah Rizam M. Shah Baki, Mohd Z. M. Annar, Ihsan M. Yassin, Hasliza A. Hassan, Azlee Zabidi</i>	

Affordable Emerging Computer Hardware for Neuromorphic Computing Applications	1794
<i>Morgan Bishop, Michael J. Moore, Daniel J. Burns, Robinson E. Pino, Richard Linderman</i>	
Extending Self-Organizing Maps with Uncertainty Information of Probabilistic PCA	1799
<i>Dusan Sovilj, Tapani Raiko, Erkki Oja</i>	
State-Space Control of Nonlinear Systems Identified by ANARX and Neural Network based SANARX Models	1806
<i>K. Vassiljeva, E. Petlenkov, J. Belikov</i>	
Fuzzy Predictive Models to Help Teachers in e-Learning Courses	1814
<i>Angela Nebot, Francisco Mugica, Félix Castro</i>	
Gene Ontology Fuzzy-Enrichment Analysis to Investigate Drug Mode-of-Action	1821
<i>Francesco Iorio, Loredana Murino, Diego di Bernardo, Giancarlo Raiconi, Roberto Tagliaferri</i>	
Automatic Extraction of Face Contours	1828
<i>Chih-Yu Hsu, Hao-Feng Wang, Hui-Ching Wang, Kuo-Kun Tseng, Yih-Jing Tang</i>	
Rolling Element Bearing Diagnosis Using Convex Hull	1836
<i>Sara Lioba Volpi, Marco Cococcioni, Beatrice Lazzerini, Dan Stefanescu</i>	
Neuronet's Method of Weighted Residuals for Computer Simulation of Hydrodynamics Problems	1844
<i>A. V. Kretinin, Yu. A. Bulygin, M. I. Kirpichev, T. I. Darneva</i>	
Incremental Learning for Visual Classification Using Neural Gas	1850
<i>Ignazio Aleo, Paolo Arena, Luca Patane</i>	
Fixed Point Method of Step-size Estimation for On-line Neural Network Training	1856
<i>Paweł Wawrzynski</i>	
Artificial Immune Systems for Artificial Olfaction Data Analysis: Comparison between AIRS and ANN models	1862
<i>S. De Vito, E. Martinelli, R. Di Fuccio, F. Tortorella, G. Di Francia, A. D' Amico, C. Di Natale</i>	
Factors Affecting Boosting Ensemble Performance on DNA Microarray data	1869
<i>Geoffrey R. Guile, Wenjia Wang</i>	
A Generic Approach for Learning Performance Assessment Functions	1876
<i>Toni Palau, Simon Sigl, Andreas Kuhn, Helmut A. Mayer</i>	
Feature Extraction from Spectro-temporal Signals using Dynamic Synapses, Recurrency, and Lateral Inhibition	1882
<i>Cornelius Glackin, Liam Maguire, Liam McDaid</i>	
Advances in Structural Modeling Robust to Outliers in Explanatory and Response Variables	1888
<i>Vladyslav Shaposhnyk, Alessandro E. P. Villa, Tetyana Aksenova</i>	
Exploration Vs. Exploitation in Active Learning : A Bayesian Approach	1896
<i>A. Bondi, V. Lemaire, M. Boule</i>	
Region Enhanced Neural Q-learning for Solving Model-based POMDPs	1903
<i>Marco A. Wiering, Thijis Kooi</i>	
Hardware Implementation of Stochastic-Based Neural Networks	1911
<i>Josep L. Rosselló, Vincent Canals, Antoni Morro</i>	
SARSA-based Reinforcement Learning for Motion Planning in Serial Manipulators	1915
<i>Ignazio Aleo, Paolo Arena, Luca Patane</i>	
Emotion Recognition Based on a Novel Triangular Facial Feature Extraction Method	1921
<i>Kuan-Chieh Huang, Sheng-Yu Huang, Yau-Hwang Kuo</i>	
Making Use of Damped Noisy Gradient in Training Neural Network	1927
<i>Md. Asaduzzaman, Sultan Uddin Ahmed, Fazle Elahi Khan, Md. Shahjahan, Kazuyuki Murase</i>	
A Complexity Based Silent Pruning Algorithm	1932
<i>Sultan Uddin Ahmed, Md. Fazle Elahi Khan, Md. Shahjahan, Kazuyuki Murase</i>	
Flexible Parametric Modelling of the Hazard Function in Breast Cancer Studies	1939
<i>Ilaria Ardoino, Federico Ambrogi, Chris Bajdik, Paulo J. Lisboa, Elia M. Biganzoli, Patrizia Boracchi</i>	
Exploring and Optimizing Dynamic Neural Fields Parameters Using Genetic Algorithms	1944
<i>Jean-Charles Quinton</i>	
MK-means - Modified K-means clustering algorithm	1951
<i>Hesam T. Dashti, Tiago Simas, Rita A. Ribeiro, Amir Assadi, Andre Moitinho</i>	
Reinforcement Learning with a Gaussian Mixture Model	1957
<i>Alejandro Agostini, Enric Celaya</i>	
Effect of Pre-processing Methods on Microarray-based SVM Classifiers in Affymetrix Genechips	1965
<i>J. P. Florido, H. Pomares, I. Rojas, J. M. Urquiza, L. J. Herrera, M. G. Claro</i>	
e-Learning System to Support Teacher's Awareness for Misunderstandings in Quiz	1971
<i>Taisuke Nakamura, Takuma Imai, Haruhiko Takase, Naoki Morita, Hiroharu Kawanaka, Shinji Tsuruoka</i>	
Use of a FIS for Low Cost Student Presence Detector in e-Learning 2.0	1976
<i>V. Di Lecce, A. Giove, A. Quarto</i>	
Improving Boosting Performance with a Local Combination of Learners	1983
<i>Efrain Mayhua-Lopez, Vanessa Gomez-Verdejo, Anibal R. Figueiras-Vidal</i>	
Region of Interest Based Image Classification Using Time Series Analysis	1990
<i>A. Elsayed, F. Coenen, M. Garcia-Finana, V. Sluming</i>	
Retinal Image Classification using a Histogram Based Approach	1996
<i>Mohd Hanafi Ahmad Hijazi, Frans Coenen, Yalin Zheng</i>	
Unconstrained Offline Handwriting Recognition using Connectionist Character N-grams	2003
<i>F. Zamora-Martinez, M. J. Castro-Bleda, S. Espana-Boquera, J. Gorbe-Moya</i>	
Complementary Use of Cluster Analysis and Biplots to Discover and Validate Patterns of Gene Expression in Microarray Data	2010
<i>Niccolo Bassani, Federico Ambrogi, Danila Coradini, Patrizia Boracchi, Elia Biganzoli</i>	

An Incremental Learning Method for Neural Networks in Adaptive Environments	2017
<i>Beatriz Perez-Sanchez, Oscar Fontenla-Romero, Bertha Guijarro-Berdinas</i>	
A Probabilistic Method for Hierarchical 2D-3D Tracking.....	2025
<i>Chen Zhang, Julian Eggert</i>	
L-SLAM: Reduced Dimensionality FastSLAM Algorithms.....	2033
<i>V. Petridis, N. Zikos</i>	
Towards Autonomous Bootstrapping for Life-long Learning Categorization Tasks	2040
<i>Stephan Kirstein, Heiko Wersing, Edgar Körner</i>	
A Fuzzy Associative Memory Based on Kosko's Subsethood Measure	2048
<i>Estevao Laureano Esmi, Peter Sussner</i>	
Dimensionality Reduction by Rank Preservation	2056
<i>Victor Onclinix, John A. Lee, Vincent Wertz, Michel Verleysen</i>	
An Information Theoretic Approach for In-Situ Underwater Target Classification	2064
<i>Mahmood R. Azimi-Sadjadi, Neil Wachowski</i>	
Naive Bayes Texture Classification Applied to Whisker Data from a Moving Robot.....	2072
<i>Nathan F. Lepora, Mat Evans, Charles W. Fox, Mathew E. Diamond, Kevin Gurney, Tony J. Prescott</i>	
Information Theoretic Learning Applied to Wind Power Modeling.....	2080
<i>Ricardo J. Bessa, V. Miranda, Jose C. Principe, A. Botterud, J. Wang</i>	
Self-Organizing Agents for Reinforcement Learning in Virtual Worlds.....	2088
<i>Yilin Kang, Ah-Hwee Tan</i>	
The Controlled Conjugate Gradient Type Trajectory-following Neural Net for Minimization of Nonconvex Functions	2096
<i>Amit Bhaya, Fernando Pazos, Eugenius Kaszkurewicz</i>	
Dynamic Binary Neural Networks and Evolutionary Learning	2104
<i>Ryo Ito, Toshimichi Saito</i>	
Building "invertible" Fractals: Introduction to Context-Dependant Iterated Function Systems.....	2109
<i>Timothee G. Leleu</i>	
Biological Neural Network Based Chemotaxis Behaviors Modeling of <i>C. elegans</i>	2117
<i>Jian-Xin Xu, Xin Deng</i>	
EEG Signal Separation for Multi-Class Motor Imagery using Common Spatial Patterns Based on Joint Approximate Diagonalization	2125
<i>S. R. Liyanage, J. -X. Xu, C. T. Guan, K. K. Ang, T. H. Lee</i>	
Extraction of Thin Color Pattern from Images for Histology Investigation.....	2131
<i>A. Nedved, V. Starovoitov</i>	
SVM with Entropy Regularization and Particle Swarm Optimization for Identifying Children's Health and Socioeconomic Determinants of Education Attainments Using Linked Datasets	2138
<i>Shang-Ming Zhou, Ronan A. Lyons, Owen Bodger, Joanne C. Demmler, Mark D. Atkinson</i>	
Reasoning with Spatial Relations Over High-content Images.....	2146
<i>Nicolas Lomenie</i>	
Hardware System for Biologically Realistic, Plastic, and Real-time Spiking Neural Network Simulations.....	2153
<i>S. Saïghi, T. Levi, B. Belhadj, O. Malot, J. Tomas</i>	
Nonlinear Adaptive Neuro-PID Controller Design for Greenhouse Environment Based on RBF Network	2160
<i>Haigen Hu, Lihong Xu, Ruihua Wei</i>	
Development of Chebyshev Neural Network-based Smart Sensors for Noisy Harsh Environment.....	2167
<i>Jagdish C. Patra, Cedric Bornand</i>	
Algorithm of Partition based Network Boosting for Imbalanced Data Classification	2175
<i>Shuiping Gou, Hui Yang, Licheng Jiao, Xiong Zhuang</i>	
Classifying Motor Imagery in Presence of Speech.....	2181
<i>Hayrettin Gurkok, Manne Poel, Job Zwiers</i>	
Gene Regulatory Networks with Variable-Order Dynamic Bayesian Networks	2189
<i>Jagath C. Rajapakse, Iti Chaturvedi</i>	
Robust Predictive Controller Based on an Uncertain Neural Networks Model.....	2194
<i>A. Mnasser, F. Bouani, M. Ksouri</i>	
The Creativity Effect: Consciousness Versus Attention	2200
<i>John G Taylor</i>	
A Roadmap for Autonomous Adaptive Systems: The Brain-Guided Attention (BGA) System	2208
<i>John G Taylor</i>	
Modified Support Vector Regression in Outlier Detection.....	2216
<i>Junya Nishiguchi, Chosei Kaseda, Hirotaka Nakayama, Masao Arakawa, Yeboon Yun</i>	
An Anomaly Detection System using a GHSOM-1.....	2221
<i>E. J. Palomo, J. M. Ortiz-de-Lazcano-Lobato, E. Dominguez, R. M. Luque</i>	
A Recurrent S_CMAC_GBF Based Estimation for Global Solar Radiation from Environmental Information.....	2228
<i>Chih-Wei Lin, Chia-Yen Hsieh, Ching-Tsan Chiang</i>	
Dimensionality Reduction Based on Minimax Risk Criterion for Face Recognition	2233
<i>Lei Tang, Ying-Ke Lei, Lin Zhu, De-Shuang Huang</i>	
Self-Organized Executive Control Functions	2239
<i>Michail Maniadakis, Panos Trahanias, Jun Tani</i>	
Implementing Spike-Timing-Dependent Plasticity on SpiNNaker Neuromorphic Hardware	2247
<i>Xin Jin, Alexander Rast, Francesco Galluppi, Sergio Davies, Steve Furber</i>	

Bio-inspired Computer Visual System using GPU and Visual Pattern Assessment Language (ViPAL): Application on Breast Cancer Prognosis.....	2255
<i>Chao-Hui HUANG, Daniel RACOCEANU, Ludovic ROUX, Thomas C. PUTTI</i>	
A Robotic Eye Controller Based on Cooperative Neural Agents.....	2263
<i>Oscar Chang, Pascual Campoy, Carol Martinez, Miguel A. Olivares-Mendez</i>	
Pruning Population Size in XCS for Complex Problems.....	2269
<i>Barbara Rakitsch, Andreas Bernauer, Oliver Bringmann, Wolfgang Rosenstiel</i>	
A Computational Model of Adults' Performance in Naming Objects Using Cross-situational Learning	2277
<i>José F. Fontanari, Leonid I. Perlovsky</i>	
An MDM Solver for the Nearest Point Problem in Scaled Convex Hulls.....	2285
<i>Jorge Lopez, Alvaro Barbero, Jose' R. Dorronsoro</i>	
Fuzzy-GIST for 4-Emotion Recognition in Natural Scene Images	2293
<i>Qing Zhang, Minho Lee</i>	
GNG Based Surveillance System	2301
<i>J. García-Rodríguez, A. Angelopoulou, J. M. García-Chamizo, A. Psarrou</i>	
LMI Formulation for Multiobjective Learning in Radial Basis Function Neural Networks	2309
<i>Gladston J. P. Moreira, Elizabeth F. Wanner, Frederico G. Guimarães, Luiz H. Duzczmal, Ricardo H. C. Takahashi</i>	
Credit Default Swap Pricing using Artificial Neural Networks.....	2316
<i>Khaled Shaban, Abdunnaser Younes, Robert Lam, Michael Allison, Shajeehan Kathirgamanathan</i>	
Encoding Real Values into Polychronous Spiking Networks	2324
<i>Cameron Johnson, G. K. Venayagamoorthy</i>	
A Synergistic View of Autonomous Cognitive Systems.....	2331
<i>Ali A. Minai, Mithun Perdoor, Kiran V. Byadarhaly, Suresh Vasa, Laxmi R. Iyer</i>	
A Hybrid Method for Novelty Detection in Time Series Based on States Transitions and Swarm Intelligence	2339
<i>George G. Cabral, Adriano L. I. Oliveira</i>	
Recurrent Snap-Drift Neural Network for Phrase Recognition	2347
<i>Dominic Palmer-Brown, Chrisina Draganova</i>	
Self-sustained Activity in Attractor Networks using Neuromorphic VLSI	2352
<i>Patrick Camilleri, Massimiliano Giulioni, Maurizio Mattia, Jochen Braun, Paolo Del Giudice</i>	
Discriminative Feature Extraction with Deep Neural Networks	2358
<i>Andre Stuhlsatz, Jens Lippel, Thomas Zielke</i>	
Self-organization of Two Interacting Winner-take-all Systems.....	2366
<i>Junmei Zhu</i>	
SVM - Neighbor Based Candidate Working Set Selection Applied on Text-categorization.....	2371
<i>Eduardo Akira Kinto, Emilio Del-Moral-Hernandez</i>	
Neural Network Architecture Selection Analysis with Application to Cryptography Location	2378
<i>Jason L. Wright, Milos Manic</i>	
On Gaussian Random Neuronal Field Model: Moment Neuronal Network Approach.....	2384
<i>Wenlian Lu, Jianfeng Feng</i>	
Find Synaptic Topology from Spike Trains	2392
<i>Tian Ge, Wenlian Lu, Jianfeng Feng</i>	
Binary Classification Based on SVDD Projection and Nearest Neighbors	2398
<i>Daesung Kang, Jooyoung Park, Jose C. Principe</i>	
Hand Gesture Modelling and Tracking using a Self-Organising Network.....	2404
<i>Anastassia Angelopoulou, Jose Garcia-Rodriguez, Alexandra Psarrou, Gaurav Gupta</i>	
A Bidirectional Associative Memory Based on Cortical Spiking Neurons Using Temporal Coding.....	2411
<i>M. Zaman, A. Sadeghian, S. Chartier</i>	
Label Propagation Through Neuronal Synchrony	2419
<i>Marcos G. Quiles, Liang Zhao, Fabricio A. Breve, Anderson Rocha</i>	
FPGA Implementation of a Support Vector Machine for Classification and Regression.....	2427
<i>Maria Ruiz-Llata, Guillermo Guarino, Mar Yébenes-Calvino</i>	
Machine Learning Approach for Crude Oil Price Prediction with Artificial Neural Networks-Quantitative (ANN-Q) Model.....	2432
<i>S. N. Abdullah, X. Zeng</i>	
New Top-Down Methods Using SVMs for Hierarchical Multilabel Classification Problems	2440
<i>Ricardo Cerri, Andre Carlos P. L. F de Carvalho</i>	
Optimizing Subclass Discriminant Error Correcting Output Codes using Particle Swarm Optimization	2448
<i>Dimitrios Bouzas, Nikolaos Arvanitopoulos, Anastasios Tefas</i>	
A Cost Function Based Single Network Adaptive Critic Architecture for Optimal Control Synthesis for a Class of Nonlinear Systems	2455
<i>Jie Ding, S. N. Balakrishnan, Frank L. Lewis</i>	
Development of a Virtual Agent Based Social Tutor for Children with Autism Spectrum Disorders	2463
<i>Marissa Milne, Martin H. Luerssen, Trent W. Lewis, Richard E. Leibbrandt, David M. W. Powers</i>	
Over-Segmentation and Neural Binary Validation for Cursive Handwriting Recognition.....	2472
<i>Hong Lee, Brijesh Verma</i>	
Classification of LIBS Protein Spectra Using Support Vector Machines and Adaptive Local Hyperplanes	2477
<i>Tia Vance, Natasa Reljin, Aleksandar Lazarevic, Dragoljub Pokrajac, Vojislav Kezman, Noureddine Melikechi, Aristides Marcano, Yuri Markushin, Samantha McDaniel</i>	
A Geometric Radial Basis Function Network for Tracking Variant 3D Transformations.....	2484
<i>Eduardo Bayro-Corrochano, Eduardo Vazquez-Santacruz</i>	

Feature Selection and Fast Training of Subspace Based Support Vector Machines	2490
<i>Takuya Kitamura, Syogo Takeuchi, Shigeo Abe</i>	
Occurrence of False Memories: A Neural Module Considering Context for Memorization of Words Lists	2496
<i>Aluizio F. R. Araujo, Hansenclever F. Bassani, Renato F. Pacheco</i>	
Period Detection in Light Curves from Astronomical Objects Using Correntropy	2504
<i>Pablo A. Estevez, Pablo Huijse, Pablo Zegers, Jose C. Principe, Pavlos Protopapas</i>	
SMART: Simultaneous Indoor Localization and Map Construction Using Smartphones	2511
<i>Peng Zhuang, Dan Wang, Yi Shang</i>	
Analyzing the Dynamics of the Simultaneous Feature and Parameter Optimization of an Evolving Spiking Neural Network	2519
<i>Stefan Schliebs, Michael Defoin-Platel, Nikola Kasabov</i>	
Emotional Quality Level Recognition Based on HRV	2527
<i>Minbg-Han Wu, Chih-Jen Wang, Yen-Kuang Yang, Jeen-Shing Wang, Pau-Choo Chung</i>	
Vehicle Detection using Bayesian Network Enhanced Cascades Classification (BNECC)	2533
<i>Shen Xu, Yi L. Murphrey</i>	
An Optimal Sphere and Two Large Margins Approach for Novelty Detection	2539
<i>Trung Le, Dat Tran, Wanli Ma, Dharmendra Sharma</i>	
A Neural Network Method for Prediction of 2006 World Cup Football Game	2545
<i>Kou-Yuan Huang, Wen-Lung Chang</i>	
Detecting Differentially Aberrant Genomic Regions in Multi-Sample Array CGH Experiments Using Nearest-Neighbor Multivariate Test	2553
<i>Yuta Ishikawa, Ichiro Takeuchi</i>	
Spatio-Spectral Sufficient Statistic for Mental Imagery EEG Signals	2561
<i>Mohammad Shahin Mahanta, Amirhossein S. Aghaei, Konstantinos N. Plataniotis, Subbarayan Pasupathy</i>	
A Novel Frequency Band Selection Method for Common Spatial Pattern in Motor Imagery Based Brain Computer Interface	2568
<i>Gufei SUN, Jinglu HU, Gengfeng WU</i>	
Rhythmic Component Extraction Considering Phase Alignment and the Application to Motor Imagery-Based Brain Computer Interfacing	2574
<i>Hiroshi Higashi, Toshihisa Tanaka, Yasue Mitsukura</i>	
Acquisition of Adaptive Walking Behaviors Using Machine Learning with Central Pattern Generator	2580
<i>T. Sato, K. Watanabe, H. Igarashi</i>	
A Loss Function for Classification Based on a Robust Similarity Metric	2588
<i>Abhishek Singh, Jose C. Principe</i>	
Memory versus Non-Linearity in Reservoirs	2594
<i>David Verstraeten, Joni Dambre, Xavier Dutoit, Benjamin Schrauwen</i>	
Automated Texture Classification of Marble Shades with Real-Time PLC Neural Network Implementation	2602
<i>I. Topalova, A. Tzokev</i>	
Opposition-Based Particle Swarm Optimization for the Design of Beta Basis Function Neural Network	2610
<i>Habib Dahri, Adel. M. Alimi</i>	
Hybrid World Object Tracking for a Virtual Teaching Agent	2618
<i>William Newman, David Franzel, Takeshi Matsumoto, Richard Leibbrandt, Trent W. Lewis, Martin H. Luerssen, David M. W. Powers</i>	
Space-Varying Cellular Neural Networks Designed by Hopfield Neural Network	2627
<i>Yasuhiro Ueda, Masakazu Kawahara, Takashi Inoue, Yoko Uwate, Yoshifumi Nishio</i>	
Topological Chaos and Chaotic Iterations Application to Hash Functions	2633
<i>Christophe Guyeux, Jacques M. Bahi</i>	
Enhanced Two-Phase Method in Fast Learning Algorithms	2640
<i>Chi-Chung Cheung, Sin-Chun Ng, Andrew K Lui, Sean Shensheng Xu</i>	
Model Predictive Control by Differential Neural Networks Approach	2647
<i>Isaac Chairez, Alejandro García, Alexander Poznyak, Tatyana Poznyak</i>	
Euclidean Distance and Second Derivative Based Widths Optimization of Radial Basis Function Neural Networks	2655
<i>Wen Yao, Xiaoqian Chen, Michel van Tooren, Yuexing Wei</i>	
Improved Kohonen Feature Map Probabilistic Associative Memory based on Weights Distribution	2663
<i>Shingo Noguchi, Yuko Osana</i>	
Change Detection Tests Using the ICI Rule	2671
<i>Cesare Alippi, Giacomo Boracchi, Manuel Roveri</i>	
A Mixed-Type Self-Organizing Map with a Dynamic Structure	2678
<i>Wei-Shen Tai, Chung-Chian Hsu, Jong-Chen Chen</i>	
Probabilistic Dynamic Logic of Phenomena and Cognition	2686
<i>Evgenii Vityaev, Boris Kovalerchuk, Leonid Perlovsky, Stanislav Smerdov</i>	
A Component Based Approach Improves Classification of Discrete Facial Expressions Over a Holistic Approach	2692
<i>Kenny Hong, Stephan K. Chalup, Robert A. R. King</i>	
Building Blocks for Spikes Signals Processing	2700
<i>A. Jimenez-Fernandez, A. Linares-Barranco, R. Paz-Vicente, G. Jiménez, A. Civit</i>	
Possibility of Synchronization in Hopfield like Chaotic Neural Networks with Just Adding a Single Neuron	2708
<i>Nariman Mahdavi, Mohammad B. Menhaj, Ahmad Afshar</i>	
DNA Base-Calling Using Polynomial Classifiers	2713
<i>Omniyah G. Mohammed, Khaled T. Assaleh, Ghaleb A. Husseini, Amin F. Majdalawieh, Scott R. Woodward</i>	

A Study of the Switching Function of the Subthalamic Nucleus in Saccade Generation using a Computational Model of Basal Ganglia.....	2718
<i>Maithreye Rengaswamy, V. Srinivasa Chakravarthy</i>	
Adaptive On-line Prediction Soft Sensing without Historical Data.....	2724
<i>Petr Kadlec, Bogdan Gabrys</i>	
Short Term Load Forecasting Using Echo State Networks.....	2732
<i>Hemen Showkati, Amir H. Hejazi, Sajad Elyasi</i>	
An Image Recognition Based on Neural Oscillator Network.....	2737
<i>Kenta Hoshino, Hajime Igarashi</i>	
A Distributed Model of Memory for the McGurk Effect.....	2743
<i>Ioana Sporea, André Grüning</i>	
A Surface Reconstruction Method Based on Self-organizing Maps and Intrinsic Delaunay Triangulation	2747
<i>Renata L. M. E. do Rego, Aluizio F. R. Araujo</i>	
Learning Methods of Recurrent Spiking Neural Networks Based on Adjoint Equations Approach.....	2755
<i>Yasuaki Kuroe, Tomokazu Ueyama</i>	
Improving Financial Time Series Prediction Using Exogenous Series and Neural Networks Committees	2763
<i>Manoel C. Amorim Neto, Gustavo Tavares, Victor M. O. Alves, George D. C. Cavalcanti, Tsang Ing Ren</i>	
Dual-Network Memory Model Using a Chaotic Neural Network.....	2771
<i>Motonobu Hattori</i>	
Application of Artificial Neural Networks to the Geochemical Study of an Impacted Fluvial System.....	2776
<i>J. P. Lacassie, J. Ruiz-Del-Solar</i>	
Based on Support Vector Regression for Emotion Recognition using Physiological Signals.....	2784
<i>Chuan-Yu Chang, Jun-Ying Zheng, Chi-Jane Wang</i>	
N2Cloud: Cloud Based Neural Network Simulation Application.....	2791
<i>Altaf Ahmad Huqqaani, Xin Li, Peter Paul Beran, Erich Schikuta</i>	
Analyzing Effect of Distraction Caused by Dual-Tasks on Sharing of Brain Resources Using SOM	2796
<i>Yu-Kai Wang, Nikhil R. Pal, Chin-Teng Lin, Shi-An Chen</i>	
Studying the Economy of Energy Expenditure in a Large Balanced Spiking Neuron Network.....	2802
<i>H. Ando, K. Karthik, V. S. Chakravarthy</i>	
A Nonexclusive Task Decomposition Method for Modular Neural Networks	2807
<i>Victor M. O. Alves, George D. C. Cavalcanti</i>	
Parallel Tempering is Efficient for Learning Restricted Boltzmann Machines	2813
<i>KyungHyun Cho, Tapami Raiko, Alexander Ilin</i>	
Neural Behaviors and Nonlinear Dynamics of a Rotate-and-Fire Digital Spiking Neuron	2821
<i>Tetsuya Hishiki, Hiroyuki Torikai</i>	
Nonlinear Adaptive Control using a Fuzzy Switching Mechanism Based on Improved Quasi-ARX Neural Network	2829
<i>Lan WANG, Yu CHENG, Jinglu HU</i>	
Top-down Visual Selective Attention Model Combined with Bottom-up Saliency Map for Incremental Object Perception.....	2836
<i>Sang-Woo Ban, Bumhwi Kim, Minho Lee</i>	
Integrate-and-Fire-Type Digital Spiking Neuron and its Learning for Spike-Pattern-Division Multiplex Communication.....	2844
<i>Tetsuro Iguchi, Akira Hirata, Hiroyuki Torikai</i>	
Probabilistic Robust Hyperbola Mixture Model for Interpreting Ground Penetrating Radar Data.....	2852
<i>Huanhuan Chen, Anthony G. Cohn</i>	
Intelligent Trading Using Support Vector Regression and Multilayer Perceptrons Optimized with Genetic Algorithms	2860
<i>Ming Zhu, Lipo Wang</i>	
Personalized Facial Expression Recognition in Indoor Environments	2865
<i>Chuan-Yu Chang, Yan-Chiang Huang</i>	
An Evolutionary Robotics 3D Model for Autonomous MAVs Navigation, Target Tracking and Group Coordination	2873
<i>Fabio Ruini, Angelo Cangelosi</i>	
GPU-Based Simulation of Spiking Neural Networks with Real-Time Performance & High Accuracy	2881
<i>Dmitri Yudanov, Muhammad Shaaban, Roy Melton Leon Reznik</i>	
An Integrated Incremental Self-organizing Map and Hierarchical Neural Network Approach for Cognitive Radio Learning	2889
<i>Qiao Cai, Sheng Chen, Xiaochen Li, Nansai Hu, Haibo He, Yu-Dong Yao, Joseph Mitola</i>	
Fuzzy Neural Network Based RFID Indoor Location Sensing Technique	2895
<i>Y. J. Huang, C. Y. Chen, B. W. Hong, T. C. Kuo, H. H. Yu</i>	
Learning Process of Affordable Neural Network for Backpropagation Algorithm	2900
<i>Yoko Uwate, Yoshifumi Nishio</i>	
Prediction and Identification Using Recurrent Wavelet-based Cerebellar Model Articulation Controller Neural Networks.....	2907
<i>Yu-Lin Liao, Che-Cheng Kuo, Ya-Fu Peng</i>	
Identifying Causal Relationships in an Urban Information Modeling Framework	2913
<i>Xiang Liu, Shaohua Tan</i>	
Early Detection of Diseases in Tomato Crops: An Electronic Nose and Intelligent Systems Approach	2918
<i>Reza Ghaffari, Fu Zhang, Daciana Iliescu, Evor Hines, Mark Leeson, Richard Napier, John Clarkson</i>	

MuSeRA: Multiple Selectively Recursive Approach towards Imbalanced Stream Data Mining	2924
<i>Sheng Chen, Haibo He, Kang Li, Sachi Desai</i>	
A Neurodynamic Optimization Approach to Constrained Sparsity Maximization Based on Alternative Objective Functions	2932
<i>Zhishan Guo, Jun Wang</i>	
Context-aware Knowledge Modeling for Decision Support in E-health	2940
<i>Obinna Anya, Hissam Tawfik, Saad Amin, Atulya Nagar, Khaled Shaalan</i>	
Classification of Micro-array Gene Expression Data using Neural Networks	2947
<i>David Tian, Keith Burley</i>	
Exploit of Online Social Networks with Semi-Supervised Learning	2955
<i>Mingzhen Mo, Dingyan Wang, Baichuan Li, Dan Hong, Irwin King</i>	
Agents based Approach for Smart Eco-home Environments	2963
<i>Runhe Huang, Masahiro Itou, Toshihiro Tamura, Jianhua Ma</i>	
Forecasting Electricity Prices Using a RBF Neural Network with GARCH Errors	2971
<i>Andre Alves Portela Santos, Leandro dos Santos Coelho, Carlos Eduardo Klein</i>	
Building the Knowledge Base of a Buyer Agent Using Reinforcement Learning Techniques	2979
<i>George Boulougaris, Kostas Kolomvatsos, Stathis Hadjiefthymiadis</i>	
Person Identification using VEP Signals and SVM Classifiers	2987
<i>António Ferreira, Carlos Almeida, Pétia Georgieva, Ana Tomé</i>	
Improvement in Service Robot's Interaction through Case Based Reasoning	2995
<i>Catalina Roncancio, Jose L. Rodriguez, Eduardo Zalama, Jaime Gomez Garcia-Bermejo</i>	
Learning Long-Term Dependencies Using Layered Graph Neural Networks	3002
<i>Niccolo Bandinelli, Monica Bianchini, Franco Scarselli</i>	
Frequency Independent Automatic Input Variable Selection for Neural Networks for Forecasting	3010
<i>Nikolaos Kourentzes, Sven F. Crone</i>	
Multiobjective Multiclass Support Vector Machine Based on the One-against-all Method	3018
<i>Keiji Tatsumi, Masato Tai, Tetsuzo Tanino</i>	
An Improved Online quasi-Newton Method for Robust Training and its Application to Microwave Neural Network Models	3025
<i>Hiroshi Ninomiya</i>	
Incremental Learning and Model Selection under Virtual Concept Drifting Environments	3033
<i>Koichiro Yamauchi</i>	
Accelerated Simulation of Spiking Neural Networks Using GPUs	3041
<i>Andreas K. Fidjeland, Murray P. Shanahan</i>	
Rule Extraction from Neural Networks for Medical Domains	3049
<i>Darren Dancey, Zuhair A. Bandar, David McLean</i>	
An Open-Source Real-Time System for Remote Robotic Control using Neuroblastoma Cultures	3057
<i>J. M. Ferrández, V. Lorente, G. Díaz, F. delaPaz, E. Fernández</i>	
High-Performance Bankruptcy Prediction Model using Graphics Processing Units	3065
<i>Bernardete Ribeiro, Noel Lopes, Catarina Silva</i>	
A Competitive Network for Multi-object Selection	3072
<i>Dražen Domjan</i>	
Financial Distress Model Prediction using SVM+	3078
<i>Bernardete Ribeiro, Catarina Silva, Armando Vieira, A. Gaspar-Cunha, Joao C. das Neves</i>	
An Intelligent System for Diagnosing Sleep Stages Using Wavelet Coefficients	3085
<i>Maryam Vatankhah, Mohammad-R. Akbarzadeh-T., Ali Moghimi</i>	
Multi-Facet Exploration of Image Collections with an Adaptive Multi-Focus Zoomable Interface	3090
<i>Sebastian Stofer, Christian Hentschel, Andreas Nurnberger</i>	
A Strategy for Dealing with Missing Values by Using Selective Activation Neurons in a Multi-Topology Framework	3098
<i>Noel Lopes, Bernardete Ribeiro</i>	
Predictive-spectral-spatial Preprocessing for a Multiclass Brain-Computer Interface	3103
<i>Damien Coyle, Abdul Satti, T. M. McGinnity</i>	
A Cognitive Developmental Robotics Architecture for Lifelong Learning by Evolution in Real Robots	3111
<i>F. Bellas, A. Faiña, G. Varela, R. J. Duro</i>	
Latent Learning in Deep Neural Networks	3119
<i>Steven Gutstein, Olac Fuentes, Eric Freudenthal</i>	
A New Approach for History Matching of Oil and Gas Reservoir	3125
<i>S. C. Miyoshi, D. M. Szwarcman, M. M. B. R. Vellasco</i>	
A Biologically Inspired Associative Memory for Artificial Olfaction	3133
<i>Miquel Tarzan-Lorente, Agustin Gutierrez-Galvez, Dominique Martinez, Santiago Marco</i>	
Artificial Neural Networks for Non-invasive Chromosomal Abnormality Screening of Fetuses	3139
<i>C. K. Neokleous, K. H. Nicolaides, K. C. Neokleous, C. N. Schizas</i>	
Support Feature Machines: Support Vectors Are Not Enough	3143
<i>Tomasz Maszczyk, Wodzislaw Duch</i>	
A Preliminary Study on Mutation Operators in Cooperative Competitive Algorithms for RBFN Design	3151
<i>Maria Dolores Perez-Godoy, Antonio J. Rivera, Cristobal J. Carmona, Maria Jose del Jesus</i>	
Effect of Different Detrending Approaches on Computational Intelligence Models of Time Series	3158
<i>Federico Montesino Pouzols, Amaury Lendasse</i>	

Evolving Granular Neural Network for Semi-supervised Data Stream Classification	3166
<i>Daniel Leite, Pyramo Costa Jr., Fernando Gomide</i>	
Topology Optimization for Artificial Neural Networks using Differential Evolution	3174
<i>Nicole L. Mineu, Teresa B. Ludermir, Leandro M. Almeida</i>	
Potential Support Vector Machines and Self-Organizing Maps for Phytoplankton Discrimination.....	3181
<i>Ismael F. Aymerich, Jaume Piera, Aureli Soria-Frisch</i>	
Identical Fits of Nonnegative Matrix/Tensor Factorization May Correspond to Different Extracted Event-related Potentials	3186
<i>F. Cong, A. H. Phan, A. Cichocki, H. Lyytinen, T. Ristaniemi</i>	
Driver's Cognitive State Classification toward Brain Computer Interface via using a Generalized and Supervised Technology	3191
<i>Chun-Hsiang Chuang, Pei-Chen Lai, Li-Wei Ko, Bor-Chen Kuo, Chin-Teng Lin</i>	
Tracking Gestures using a Probabilistic Self-Organising Network.....	3198
<i>Anastassia Angelopoulou, Alexandra Psarrou, Jose Garcia-Rodriguez, Gaurav Gupta</i>	
On Utilizing Self-organizing Fuzzy Neural Networks for Financial Forecasts in the NN5 Forecasting Competition	3205
<i>Damien Coyle, Girijesh Prasad, T. Martin McGinnity</i>	
Atrial Activity Estimation using Periodic Component Analysis	3213
<i>Raul Llinares, Jorge Igual, Julio Miro-Borras, Andres Camacho</i>	
Robust Neural Network RISE Observer Based Fault Diagnostics and Prediction.....	3220
<i>James W. Fonda, S. Jagannathan, Steve E. Watkins</i>	
An Island-model Framework for Evolving Neuro-controllers for Planetary Rover Control.....	3228
<i>Martin Peniak, Barry Bentley, Davide Marocco, Angelo Cangelosi, Christos Ampatzis, Dario Izzo, Francesco Biscani</i>	
Multiagent Reinforcement Learning in the Iterated Prisoner's Dilemma: Fast Cooperation through Evolved Payoffs.....	3236
<i>Vassilis Vassiliades, Chris Christodoulou</i>	
Concatenated Trial based Hilbert-Huang Transformation on Event-Related Potentials.....	3244
<i>F. Cong, T. Sipola, X. Xu, T. Huttunen-Scott, H. Lyytinen, T. Ristaniemi</i>	
Evidence-based Mixture of MLP-experts	3249
<i>Saeed Masoudnia, Mohammad Rostami, Mahdi Tabassian, Atena Sajedin, Reza Ebrahimpour</i>	
Visual Spike-based Convolution Processing with a Cellular Automata Architecture.....	3256
<i>M. Rivas-Perez, A. Linares-Barranco, J. Cerdá, N. Ferrando, G. Jimenez, A. Civit</i>	
The Neuronal Substrate Underlying Order and Interval Representations in Sequential Tasks: A Biologically Based Robot Study.....	3263
<i>Encarni Marcos, Armin Duff, Martí Sanchez-Fibla, Paul F. M. J. Verschure</i>	
Ensemble Particle Swarm Model Selection	3271
<i>Hugo Jair Escalante, Manuel Montes, Enrique Sucar</i>	
Robust Recurrent Wavelet-based CMAC Control for Uncertain Nonlinear Systems with H^∞ Tracking Performance	3279
<i>Ya-Fu Peng, Hsiang-Wei Lai, Chih-Hui Chiu, Rong-Jong Wai</i>	
Opposition Based Computing – A Survey	3287
<i>Fares S. Al-Qunaieer, Hamid R. Tizhoosh, Shahryar Rahnamayan</i>	
Time Series Forecasting by Evolving Artificial Neural Networks Using Genetic Algorithms and Differential Evolution.....	3294
<i>Juan Peralta, Xiaodong Li, German Gutierrez, Araceli Sanchis</i>	
The Real-world Localization and Classification of Multiple Odours Using a Biologically Based Neurorobotics Approach	3302
<i>Jose Maria Blanco Calvo, Sergi Bermudez i Badia, Hector Tapia Simo, Paul F. M. J. Verschure</i>	
Time Series Forecasting by Evolving Artificial Neural Networks Using Genetic Algorithms and Estimation of Distribution Algorithms	3309
<i>Juan Peralta, German Gutierrez, Araceli Sanchis</i>	
The Effect of Finite Sample Size on the Holdout Error Probability Estimator of Homoscedastic Multi-class Gaussian Classification Problems.....	3317
<i>Moataz El Ayadi, Konstantinos N. Plataniotis</i>	
Discrete Time Recurrent Neural Network Sliding Mode Observer	3325
<i>I. Salgado, I. Chairez, A. Garcia</i>	
Neural Expert Weighing	3331
<i>Rafael de O. Valle dos Santos, Marley M. B. R. Vellasco</i>	
An Integrated Computational Model of the Two Phase Theory of Classical Conditioning.....	3339
<i>Martin Inderbitzin, Ivan Herreros-Alonso, Paul F. M. J. Verschure</i>	
Stochastic Weight Update in The Backpropagation Algorithm on Feed-Forward Neural Networks	3347
<i>Juraj Koscak, Rudolf Jakska, Peter Sinacak</i>	
Comparison of MLP Cost Functions to Dodge Mislabeled Training Data	3351
<i>Paavo Nieminen, Tommi Karkkainen</i>	
Fully Automatic Bayesian Neural Forecaster – NN GC1	3358
<i>Vitor Hugo Ferreira, Alexandre P. Alves da Silva</i>	
EEG-based Absence Seizure Detection Methods.....	3364
<i>Sheng-Fu Liang, Wan-Lin Chang, Herming Chiueh</i>	
ANN-based Representation of Parametric and Residual Uncertainty of Models	3368
<i>Francesca Pianosi, Durga Lal Shrestha, Dimitri P. Solomatine</i>	

Game Theory & Data Mining Model for Price Dynamics in Financial Institutions	3374
<i>Cristian Bravo, Nicolas Figueroa, Richard Weber</i>	
An Iterative Approach to Local-PCA	3382
<i>Samuel John, Heiko Wersing, Helge Ritter</i>	
Fault Detection, Identification, and Reconstruction of Faulty Chemical Gas Sensors Under Drift Conditions, Using Principal Component Analysis and Multiscale-PCA	3388
<i>M. Padilla, A. Perera, I. Montoliu, A. Chaudry, K. Persaud, S. Marco</i>	
Time-series Temporal Classification using Feature Ensemble Learning	3395
<i>Ruoqian Liu, Yi L. Murphy</i>	
Modified Neural Network Aided EKF based SLAM for Improving an Accuracy of the Feature Map	3400
<i>Jeong-Gwan Kang, Su-Yong An, Se-Young Oh</i>	
An Genetic Approach to Support Vector Machines in Classification Problems	3407
<i>Carlos Alberto de A. Padilha, Naiyan Hari C. Lima, Adrião Duarte Dória Neto, Jorge Dantas de Melo</i>	
Semi-Supervised Learning from Imperfect Data through Particle Cooperation and Competition	3411
<i>Fabricio A. Breve, Liang Zhao, Marcos G. Quiles</i>	
Predicting Drug Absorption Rates Through Human Skin	3419
<i>Yi Sun, Lun Tak Lam, Gary Moss, Maria Papopoulou, Rod Adams, Neil Davey, David Gray, Mark Brown</i>	
An Instruction Language for the Explicit Programming of Axonal Growth Patterns	3424
<i>Frederic Zubler, Rodney Douglas</i>	
Active Learning Support Vector Machines to Classify Imbalanced Reservoir Simulation Data	3428
<i>Tina Yu</i>	
Incremental Knowledge Acquisition and Self Learning from Text	3436
<i>Daswin De Silva, Damminda Alahakoon</i>	
Quadratic Neural Unit and its Network in Validation of Process Data of Steam Turbine Loop and Energetic Boiler	3444
<i>Ivo Bukovsky, Martin Lepold, Jiri Bila</i>	
Transferred Correlation Learning: An Incremental Scheme for Neural Network Ensembles	3451
<i>Lei Jiang, Jian Zhang, Gabrielle Allen</i>	
Towards Estimating Selective Auditory Attention from EEG Using a Novel Time-Frequency-Synchronisation Framework	3459
<i>David Looney, Cheolsoo Park, Yili Xia, Preben Kidmose, Michael Ungstrup, Danilo P. Mandic</i>	
Spectral Clustering with Reverse Soft K-Nearest Neighbor Density Estimation	3464
<i>Olcay Kursun</i>	
Improving Recall Values in Breast Cancer Diagnosis with Incremental Background Knowledge	3472
<i>Catarina Silva, Bernadete Ribeiro, Noel Lopes</i>	
Evolving Spiking Neural Networks for Predicting Transcription Factor Binding Sites	3478
<i>Heike Sichtig, J. David Schaffer, Alberto Riva</i>	
Neural Network-based Taxonomic Clustering for Metagenomics	3486
<i>Steven D. Essinger, Robi Polikar, Gail L. Rosen</i>	
Modelling of Temperature in the Aluminium Smelting Process using Neural Networks	3493
<i>Fábio M. Soares, Roberto C. L. Oliveira</i>	
Thalamocortical Circuitry and Alpha Rhythm Slowing: An Empirical Study based on a Classic Computational Model	3500
<i>Basababhatta Sen Bhattacharya, Damien Coyle, Liam Maguire</i>	
A New Domain Decomposition for B-spline Neural Networks	3507
<i>Cristiano L. Cabrita, António E. B. Ruano, László T. Kóczy</i>	
Software Defect Prediction Using Static Code Metrics Underestimates Defect-Proneness	3515
<i>David Gray, David Bowes, Neil Davey, Yi Sun, Bruce Christianson</i>	
A Comprehensive Comparison of ML Algorithms for Gene Expression Data Classification	3522
<i>Bruno Feres de Souza, Andre C. P. L. F. de Carvalho, Carlos Soares</i>	
A T-S Fuzzy Logic Controller for Biped Robot Walking based on Adaptive Network Fuzzy Inference System	3530
<i>Selene L. Cardenas-Maciel, Oscar Castillo, Luis T. Aguilar, Juan R. Castro</i>	
Reinforcement Learning using Associative Memory Networks	3538
<i>Ricardo Salmon, Alireza Sadeghian, Sylvain Chartier</i>	
Reinforcement Learning Based Adaptive Rate Control for Delay-Constrained Communications over Fading Channels	3545
<i>Xiaochen Li, Haibo He, Yu-Dong Yao</i>	
Compressing a Neural Network Classifier using a Volterra-Neural Network Model	3552
<i>M. Rubiolo, G. Stegmayer, D. Milone</i>	
An Intelligent Perturbative Approach for the Time Series Forecasting Problem	3559
<i>Paulo S. G. de Mattos Neto, Aranildo R. Lima Jr, Tiago A. E. Ferreira, George D. C. Cavalcanti</i>	
DCPE Co-Training: Co-Training Based on Diversity of Class Probability Estimation	3567
<i>Jin Xu, Haibo He, Hong Man</i>	
A Hierarchical Predictive Scheme for Incremental Time-Series Classification	3574
<i>Vassilis Syrris, Vassilios Petridis</i>	
Decentralized Nearly Optimal Control of a Class of Interconnected Nonlinear Discrete-time Systems by Using Online Hamilton-Bellman-Jacobi Formulation	3582
<i>S. Mehraeen, S. Jagannathan</i>	
A High Order Neural Network to Solve N-Queens Problem	3590
<i>Yuxin Ding, Ye Li, Min Xiao, Qing Wang, Li Dong</i>	

Autonomous Cognition and Reinforcement Learning for Mobile Robots	3596
<i>Rodrigo Calvo, Mauricio Figueiredo, Roseli Ap. Francelin Romero</i>	
A Generalized Markov Chain Modeling Approach for On Board Applications	3604
<i>Dimitar P. Filev, Ilya Kolmanovsky</i>	
The Knowledge Instinct of Autonomous Adaptation	3612
<i>Leonid I. Perlovsky</i>	
Neural Assembly Generation by Selective Connection Weight Updating	3620
<i>Yoshitsugu Kakemoto, Shinichi Nakasuka</i>	
An Autonomous Incremental Learning Algorithm of Resource Allocating Network for Online Pattern Recognition	3626
<i>Seiichi Ozawa, Sho Nakasaka, Asim Roy</i>	
Toward a Smart Grid: Integration of Computational Intelligence into Power Grid	3634
<i>Haibo He</i>	
Intelligent Vehicle Power Management through Neural Learning	3640
<i>Jungme Park, ZhiHang Chen, Yi L. Murphrey</i>	
Incremental and Decremental LDA Learning with Applications	3647
<i>Shaoning Pang, Tao Ban, Youki Kadobayashi, Nikola Kasabov</i>	
Automatic Optimization of Pruning in Evolving Fuzzy Neural Networks Using an Entropy Measure	3655
<i>Brendon J. Woodford</i>	
Optimal Method for Growth in Dynamic Self Organizing Learning Systems	3662
<i>Sampath Yerramalla, Edgar Fuller, Bojan Cukic</i>	
A Projection Transform for Non-Euclidean Relational Clustering	3669
<i>Isaac J. Sledge</i>	
Kernel Based Principal Component for Recognizing Handwritten Numbers	3677
<i>Xiaoxiao Song, Songhua Xu, Willard L. Miranker</i>	
A Self-Organizing Approach to Episodic Memory Modeling	3685
<i>Wenwen Wang, Budhitama Subagja, Ah-Hwee Tan, Janusz A. Starzyk</i>	
Commutative Quaternion and Multistate Hopfield Neural Networks	3693
<i>Teijiro Isokawa, Haruhiko Nishimura, Nobuyuki Matsui</i>	
An Experimental Comparison of Linear Non-gaussian Causal Discovery Methods and Their Variants	3699
<i>Yasuhiro Sogawa, Shohei Shimizu, Yoshinobu Kawahara, Takashi Washio</i>	
An EEG-based Classification System of Passenger's Motion Sickness Level by using Feature Extraction/Selection Technologies	3707
<i>Yi-Hsin Yu, Pei-Chen Lai, Li-Wei Ko, Chun-Hsiang Chuang, Bor-Chen Kuo, Chin-Teng Lin</i>	
A 5-Chunk Developmental Brain-Mind Network Model for Multiple Events in Complex Backgrounds	3713
<i>Juyang Weng</i>	
Natural Language Processing Neural Network for Analogical Inference	3721
<i>Masahiro Saito, Masafumi Hagiwara</i>	
Signaling Pathways Coupling Phenomena	3728
<i>Michele Donato, Sorin Draghici</i>	
Efficient SVM Training with Reduced Weighted Samples	3734
<i>Giang Hoang Nguyen, Son Lam Phung, Abdesselam Bouzerdoum</i>	
Adaptive Normalization: A Novel Data Normalization Approach for Non-Stationary Time Series	3739
<i>Eduardo Ogasawara, Leonardo C. Martinez, Daniel de Oliveira, Geraldo Zimbrão, Gisele L. Pappa, Marta Mattoso</i>	
Testing Potentials of Dynamic Quadratic Neural Unit for Prediction of Lung Motion during Respiration for Tracking Radiation Therapy	3747
<i>Ivo Bukovsky, Kei Ichiji, Noriyasu Homma, Makoto Yoshizawa, Ricardo Rodriguez</i>	
The Role of Neural Synchrony and Rate in High-dimensional Input Systems. The Antennal Lobe: A Case Study	3753
<i>Miguel Lechon, Dominique Martinez, Paul F. M. J. Verschure, Sergi Bermudez i Badia</i>	
Neuromorphic Algorithms on Clusters of PlayStation 3s	3758
<i>Tarek M. Taha, Pavan Yamamchili, Mohammad Bhuiyan, Rommel Jalasutram, Chong Chen, Richard Linderman</i>	
Discrete Synapse Recurrent Neural Network for Nonlinear System Modeling and Its Application on Seismic Signal Classification	3768
<i>Hyung O. Park, Alireza A. Dibazar, Theodore W. Berger</i>	
Adaptive Dynamic Programming Algorithm for Finding Online the Equilibrium Solution of the Two-Player Zero-Sum Differential Game	3775
<i>Draguna Vrabie, Frank Lewis</i>	
Fabrication and Testing of Memristive Devices	3783
<i>Chris Yakopcic, Eunsung Shin, Tarek M. Taha, Guru Subramanyam, P. Terrence Murray, Stanley Rogers</i>	
An Emergent Attractors Model for Idea Generation Process	3787
<i>Simona Doboli, Vincent R. Brown</i>	
A Hierarchical GMDH-Based Polynomial Neural Network for Handwritten Numeral Recognition Using Topological Features	3795
<i>El-Sayed M. El-Alfy</i>	
Computational Model for Estimation of Refractory Wear and Skull Deposition in Blast Furnace Hearth Wall	3802
<i>Abhinav Mithal, Toma Hentea</i>	
Zero-sum Two-player Game Theoretic Formulation of Affine Nonlinear Discrete-time Systems Using Neural Networks	3807
<i>S. Mehraeen, T. Dierks, S. Jagannathan, M. L. Crow</i>	
Comparing Methods for Generating Diverse Ensembles of Artificial Neural Networks	3815
<i>T. Löfström, U. Johansson, H. Boström</i>	

An Ensemble Based Incremental Learning Framework for Concept Drift and Class Imbalance.....	3821
<i>Gregory Ditzler, Robi Polikar</i>	
Development of Neural Network Convection Parameterizations for Numerical Climate and Weather Prediction Models using Cloud Resolving Model Simulations.....	3829
<i>Vladimir M. Krasnopolksy, Michael S. Fox-Rabinovitz, Alexei A. Belochitski</i>	
Topological Features in Locally Connected RBMs.....	3837
<i>Andreas Muller, Hannes Schulz, Sven Behnke</i>	
On NSF “open questions,” Some External Properties of the Brain as a Learning System and an Architecture for Autonomous Learning	3843
<i>Asim Roy</i>	
Complex Situation Modeling in Distributed Sensor Networks	3851
<i>Sandeep Chandana, Henry Leung</i>	
Intelligent Sensor Design in Network based Automatic Control	3859
<i>Donglin Wang, Sandeep Chandana, Renlun He, Jiuqiang Han, Xiangyu Zhu, Ke Zou, Yong He</i>	
Statistical Spiking Model for Real World Pattern Recognition Applications	3865
<i>Alireza A Dibazar, Sageev George, Theodore W. Berger</i>	
Silver Chalcogenide Based Memristor Devices	3869
<i>Antonio S. Oblea, Achyut Timilsina, David Moore, Kristy A. Campbell</i>	
Study of Active Learning in the Challenge	3872
<i>Yukun Chen, Subramani Mani</i>	
WWN-2: A Biologically Inspired Neural Network for Concurrent Visual Attention and Recognition	3879
<i>Zhengping Ji, Juyang Weng</i>	
pRAM n-Tuple Classifier – A New Architecture of Probabilistic RAM Neurons for Classification Problems	3887
<i>Paulo J. L. Adeodato, Rosaldo F. Oliveira Neto</i>	
A Self-Regulated Learning in Fully Complex-valued Radial Basis Function Networks.....	3894
<i>R. Savitha, S. Suresh, N. Sundararajan</i>	
Photovoltaic Plants Predictive Model by Means of ANN trained by a Hybrid Evolutionary Algorithm.....	3902
<i>Davide Caputo, Francesco Grimaccia, Marco Mussetta, Riccardo E. Zich</i>	
Robot Visual Homing using Conjugate Gradient Temporal Difference Learning, Radial Basis Features and a Whole Image Measure	3908
<i>Abdulrahman Altahhan</i>	
Neuro Sliding Mode Based Chatter Free Control for an Artificial Muscles Robot Arm.....	3918
<i>S. Boudoua, F. Hamerlain, M. Hamerlain</i>	
Efficient Resampling Methods for Training Support Vector Machines with Imbalanced Datasets.....	3925
<i>Rukshan Batuwita, Vasile Palade</i>	
Where-What Network 3: Developmental Top-Down Attention for Multiple Foregrounds and Complex Backgrounds.....	3933
<i>Matthew Luciw, Juyang Weng</i>	
Damage Detection in Wind Turbine Blades Using Time-Frequency Analysis of Vibration Signals	3941
<i>Breiffni Fitzgerald, John Arrigan, Biswajit Basu</i>	
Multi-model Ensemble Forecasting in High Dimensional Chaotic System.....	3946
<i>Michael Siek, Dimitri Słomiński</i>	
Neural Networks Recognition Rate As Index to Compare the Performance of Fuzzy Edge Detectors.....	3954
<i>O. Mendoza, P. Melin, O. Castillo</i>	
Neural Networks to Improve Mathematical Model Adaptation in the Flat Steel Cold Rolling Process	3960
<i>Antonio Luiz dos Santos Filho, Francisco Javier Ramirez-Fernandez</i>	
Graph Echo State Networks.....	3967
<i>Claudio Gallicchio, Alessio Micheli</i>	
Time Series Forecasting: Automatic Determination of Lags and Radial Basis Neural Networks for a Changing Horizon Environment	3975
<i>E. Parras-Gutiérrez, V. M. Rivas</i>	
A Neurocontrol for Automatic Reconstruction of Facial Displays	3982
<i>Max H. Garzon, Buvaneshwari Sivakumar</i>	
Neurocognitive Spotlights: Configuring Domains for Ideation.....	3988
<i>Laxmi R. Iyer, Vaidehi Venkatesan, Ali A. Minai</i>	
Terrain Identification in Grayscale Images with Recurrent Neural Networks	3996
<i>M. A. Abou-Nasr</i>	
Neuromorphic Models on a GPGPU Cluster	4001
<i>Bing Han, Tarek M. Taha</i>	
Compositional Generative Mapping of Structured Data	4009
<i>Davide Bacci, Alessio Micheli, Alessandro Sperduti</i>	
A Scalable Reference-Point Based Algorithm to Efficiently Search Large Chemical Databases.....	4017
<i>Francesco Napolitano, Roberto Tagliaferri, Pierre Baldi</i>	
Application of Biologically Inspired Neural Oscillators to Colour Image Segmentation	4023
<i>A. Belatreche, L. P. Maguire, T. M. McGinnity, A. Ghani, L. J. McDaid</i>	
Towards Optical Flow-based Robotic Homing	4031
<i>Sotirios Ch. Diamantaris, Anastasios Oikonomidis, Richard M. Crowder</i>	
Gradient-based SOM Clustering and Visualisation Methods	4040
<i>José Alfredo F. Costa, Hujun Yin</i>	

On HR Calculus, Quaternion Valued Stochastic Gradient, and Adaptive Three Dimensional Wind Forecasting	4048
<i>Cyrus Jahanchahi, Clive Cheong Took, Danilo P. Mandic</i>	
Multi-scale Support Vector Regression	4053
<i>Stefano Ferrari, Francesco Bellocchio, Vincenzo Piuri, N. Alberto Borghese</i>	
Recurrent Wavelets Neural Networks Learning via Dead Zone Kalman Filter	4060
<i>Juan Jose Cordova, Wen Yu</i>	
Modular Neural Network Integrator for Human Recognition from Ear Images	4067
<i>Lizette Gutierrez, Patricia Melin, Miguel Lopez</i>	
Ambient Living Activity Recognition based on Feature-set Ranking Using Intelligent Systems.....	4072
<i>Oresti Baños, Héctor Pomares, Ignacio Rojas</i>	
Naïve Support Vector Regression and Multilayer Perceptron Benchmarks for the 2010 Neural Network Grand Competition (NNGC) on Time Series Prediction.....	4076
<i>Sven F. Crone, Nikolaos Kourentes</i>	
Time Receiver Operating Characteristic (tROC) Curves: A New Tool for Evaluating the Performance of Diagnostic Systems	4084
<i>Ya Xue, Neil H. W. Eklund, Xiao Hu, Weizhong Yan</i>	
A Spiking Neural Network Based on Temporal Encoding for Electricity Price Time Series Forecasting in Deregulated Markets.....	4091
<i>V. Sharma, D. Srinivasan</i>	
A Comparative Study of Machine Learning Techniques in Blog Comments Spam Filtering.....	4099
<i>C. Romero, M. Garcia Valdez, A. Alanis</i>	
Cohort-based Kernel Visualisation with Scatter Matrices	4106
<i>Enrique Romero, Ana Sofia Fernandes, Tingting Mu, Paulo J.G. Lisboa</i>	
Learning Mixtures of Experts with a Hybrid Generative-Discriminative Algorithm.....	4114
<i>Ya Xue, Xiao Hu, Weizhong Yan, Hai Qiu</i>	
Evolutionary Optimization of Growing Neural Gas Parameters for Object Categorization and Recognition.....	4122
<i>Guillermo S. Donatti, Oliver Lomp, Rolf P. Wurtz</i>	
Polynomial Componentwise LS-SVM: Fast Variable Selection Using Low Rank Updates.....	4130
<i>Fabian Ojeda, Tillmann Falck, Bart De Moor, Johan A. K. Suykens</i>	
Monitoring of Distributed Parameter Systems Based on a Sensor Network and ANFIS	4137
<i>Constantin Volosencu, Daniel Ioan Curiac</i>	
Predicting Marital Dissolutions Using Radial Basis Function Neural Networks	4145
<i>A. Guillen, C. Tovar, L. J. Herrera, H. Pomares, J. Gonzalez, J. F. Guillen, I. Rojas</i>	
Feature Selection Using ROC Curves on Classification Problems	4149
<i>Antonio J. Serrano, Emilio Soria, Jose D. Martin, Rafael Magdalena, Juan Gomez</i>	
Neural-based Quality Measurement of Fingerprint Images in Contactless Biometric Systems	4155
<i>Ruggero Donida Labati, Vincenzo Piuri, Fabio Scotti</i>	
Robot Guiding with Obstacle Avoidance Algorithm for Uncertain Environments based on DTCNN.....	4163
<i>J. Albo-Canals, Jose A. Villasante-Bembibre, S. Consul-Pacareu, Jordi Riera-Babures, X. Vilasis-Cardona</i>	
Applying Support Vector Machines and Mutual Information to Book Losses Prediction	4169
<i>A. M. Mora, L. J. Herrera, J. Urquiza, I. Rojas, J. J. Merelo</i>	
Learning in Polynomial Cellular Neural Networks using Quadratic Programming.....	4176
<i>E. Gomez-Ramirez, A. Rubi-Velez, G. E. Pazienza</i>	
An Evaluation of Neural Network Ensembles and Model Selection for Time Series Prediction	4181
<i>Devon K. Barrow, Sven F. Crone, Nikolaos Kourentes</i>	
Controlling a Robot with a Brain-Computer Interface based on Steady State Visual Evoked Potentials.....	4189
<i>Robert Prueckl, Christoph Guger</i>	
Assessment of Benefit Vs. Risk of Drug Therapy: The Potential for Outcome Analysis with Flexible Models	4194
<i>Paulo J. G. Lisboa, Ana S. Fernandes, José M. Fonseca, Chris Bajdik, Elia Biganzoli</i>	
Rule-Based Classification Approach for Railway Wagon Health Monitoring.....	4202
<i>G. M. Shafiqullah, A. B. M. Shawkat Ali, Adam Thompson, Peter J. Wolfs</i>	
How Best to Restore Operations of a Damaged ANN?	4209
<i>Goutam Chakraborty, Hideyuki Kurokawa, Basabi Chakraborty, Masafumi Matsuhara, Hiroshi Mabuchi, Yasuo Terayama</i>	
Virtual Organization for Computational Intelligence (VOCI): Architecture and Realization	4216
<i>Wajeeha Khalil, Juergen Mangler, Erich Schikuta</i>	
A Variable-MDAV-Based Partitioning Strategy to Continuous Multivariate Microaggregation with Genetic Algorithms	4223
<i>Agusti Solanas, Ursula Gonzalez-Nicolas, Antoni Martinez-Balleste</i>	
Metric Representations of Data via the Kernel-based Sammon Mapping.....	4230
<i>Mingbo Ma, Ryan Gonet, RuiZhi Yu, Georgios C. Anagnostopoulos</i>	
Time Series Analysis of Inertial-body Signals for the Extraction of Dynamic Properties from Human Gait.....	4237
<i>Albert Sama, Diego E. Pardo-Ayala, Joan Cabestany, Alejandro Rodriguez-Molinero</i>	
Genome-Wide Germline Single Nucleotide Polymorphisms for Cancer Classification in the Framingham Heart Study	4242
<i>Leif Peterson, Jaya Paraniham, Jiaqiong Xu, Federico Monzon</i>	
Efficient Clustering Approach using Incremental and Hierarchical Clustering Methods	4249
<i>M. Srinivas, C. Krishna Mohan</i>	
Chaotic Behavior in Probabilistic Cellular Neural Networks	4256
<i>Robert Kozma, Marko Puljic</i>	

Mental Development and Representation Building through Motivated Learning	4263
<i>Janusz A. Starzyk, Paweł Raïf, Ah-Hwee Tan</i>	
Unsupervised Dimensionality Reduction: Overview and Recent Advances	4271
<i>John A. Lee, Michel Verleysen</i>	
Active Learning Strategies Using SVMs	4279
<i>Ming-Hen Tsai, Chia-Hua Ho, Chih-Jen Lin</i>	

Author Index