

2013 International Joint Conference on Neural Networks

(IJCNN 2013 – Dallas)

**Dallas, Texas, USA
4-9 August 2013**

Pages 1-787



IEEE Catalog Number: CFP13IJS-POD
ISBN: 978-1-4673-6127-9

TABLE OF CONTENTS

Approximate Dynamic Programming Solutions Of Multi-Agent Graphical Games Using Actor-Critic Network Structures	1
<i>M. Abouheaf, F. Lewis</i>	
Behavioral Economics And Neuroeconomics: Cooperation, Competition, Preference, And Decision Making.....	9
<i>S. Grossberg</i>	
John Gerald Taylor: Comrade, Polymath, And Consummate Neuroscientist—Reminiscences Of Life Together Under The Aegis Of INNS	14
<i>W. Freeman</i>	
John Taylor, Learning, Attention, And Consciousness	17
<i>S. Grossberg</i>	
The Race To New Mathematics Of Brains And Consciousness - A Tribute To John G. Taylor.....	20
<i>R. Kozma</i>	
Cognitive Models Of The Perception-Action Cycle: A View From The Brain	23
<i>V. Cutsuridis</i>	
In Search Of The Brain's Executive.....	31
<i>D. Levine</i>	
Toward A Cooperative Brain: Continuing The Work With John Taylor	36
<i>B. Apolloni</i>	
Cognitive Computation: A Case Study In Cognitive Control Of Autonomous Systems And Some Future Directions.....	41
<i>A. Hussain</i>	
On The Interplay Between "Learning, Memory, Prospection and Abstraction" In Cumulatively Learning Baby Humanoids.....	47
<i>V. Mohan, G. Sandini, P. Morasso</i>	
Bubbles In The Robot.....	57
<i>T. Trappenberg</i>	
Point Cloud Data Filtering And Downsampling Using Growing Neural Gas.....	59
<i>S. Orts-Escalano, V. Morell, J. Garcia-Rodriguez, M. Cazorla</i>	
A Semi-Parametric Approach For Football Video Annotation	67
<i>M. Mentzelopoulos, A. Psarrou, A. Angelopoulou, J. Garcia-Rodriguez</i>	
Alignment-Based Transfer Learning For Robot Models.....	74
<i>B. Bocsi, L. Csato, J. Peters</i>	
Novelty Estimation In Developmental Networks: Acetylcholine And Norepinephrine	81
<i>J. Fish, L. Ossian, J. Weng</i>	
Learning Topological Image Transforms Using Cellular Simultaneous Recurrent Networks	89
<i>J. Anderson, K. Iftekharuddin</i>	
Human Behaviour Recognition Based On Trajectory Analysis Using Neural Networks	98
<i>J. Azorin-Lopez, M. Saval-Calvo, A. Fuster-Guillo, J. Garcia-Rodriguez</i>	
An Incremental Self-Organizing Neural Network Based On Enhanced Competitive Hebbian Learning	105
<i>H. Liu, M. Kurihara, S. Oyama, H. Sato</i>	
Clustering The Self-Organizing Map Through The Identification Of Core Neuron Regions.....	113
<i>L. Silva, J. Costa</i>	
Hierarchical SOM-Based Detection Of Novel Behavior For 3D Human Tracking.....	121
<i>G. Parisi, S. Wermter</i>	
Clustering iOS Executable Using Self-Organizing Maps	129
<i>F. Yu, S. Huang, L. Chiou, R. Tsaih</i>	
Batch Self-Organizing Maps For Mixed Feature-Type Symbolic Data	137
<i>F. Carvalho, G. Barbosa</i>	
Modified Self-Organizing Mixture Network For Probability Density Estimation And Classification.....	145
<i>L. Chang, Y. Chong-Xiu</i>	
Meta-Cognitive q-Gaussian RBF Network For Binary Classification Application To Mild Cognitive Impairment (MCI).....	151
<i>G. Babu, S. Suresh, B. Manhanand</i>	
Classificability-Regulated Self-Organizing Map Using Restricted RBF	159
<i>P. Hartono, T. Trappenberg</i>	

A Scalable And Dynamic Self-Organizing Map For Clustering Large Volumes Of Text Data	164
<i>S. Matharage, H. Ganegedara, D. Alahakoon</i>	
Improvement Of A Neural-Fuzzy Motion Detection Vision Model For Complex Scenario Conditions	172
<i>M. Chacon-Murguia, G. Ramirez-Alonso, S. Gonzalez-Duarte</i>	
Neuro-Fuzzy Control Strategy For Methane Production In An Anaerobic Process	180
<i>K. Gurubel, E. Sanchez, S. Carlos-Hernandez</i>	
Time Series Prediction Using Ensembles Of Neuro-Fuzzy Models With Interval Type-2 And Type-1 Fuzzy Integrators	188
<i>J. Soto, P. Melin, O. Castillo</i>	
Self-Organizing Retinotopic Maps Applied To Background Modeling For Dynamic Object Segmentation In Video Sequences	194
<i>J. Ramirez-Quintana, M. Chacon-Murguia</i>	
A Class Of Interval Type-2 Fuzzy Neural Networks Illustrated With Application To Non-Linear Identification	202
<i>J. Castro, O. Castillo</i>	
Neuro-Fuzzy Fitness In A Genetic Algorithm For Optimal Fuzzy Controller Design	208
<i>O. Castillo, A. Melendez, P. Melin, L. Astudillo</i>	
Croging (Cross-Validation Aggregation) For Forecasting - A Novel Algorithm Of Neural Network Ensembles On Time Series Subsamples	213
<i>D. Barrow, S. Crone</i>	
Analysis Of A Gaussian Process And Feed-Forward Neural Networks Based Filter For Forecasting Short Rainfall Time Series	221
<i>C. Rivero, J. Pucheta, H. Patino, J. Baumgartner, S. Laboret, V. Sauchelli</i>	
Multivariate k-Nearest Neighbour Regression For Time Series Data - A Novel Algorithm For Forecasting UK Electricity Demand	227
<i>F. Al-Qahtani, S. Crone</i>	
An SVM-Based Approach For Stock Market Trend Prediction	235
<i>Y. Lin, H. Guo, J. Hu</i>	
Volatility Analysis Via Coupled Wishart Process	242
<i>Z. She, C. Wang</i>	
Predictive Modeling For Default Risk Using A Multilayered Feedforward Neural Network With Bayesian Regularization	250
<i>I. Duma, B. Twala, T. Marwala</i>	
Cognitive Computing Systems: Algorithms And Applications For Networks Of Neurosynaptic Cores	260
<i>S. Esser, A. Andreopoulos, R. Appuswamy, P. Datta, D. Barch, A. Amir, J. Arthur, A. Cassidy, M. Flickner, P. Merolla, S. Chandra, N. Basilico, S. Carpin, T. Zimmerman, F. Zee, R. Alvarez-Icaza, J. Kusnitz, T. Wong, W. Risk, E McQuinn, T. Nayak, R. Singh, D. Modha</i>	
Computer-Aided Music Composition With LSTM Neural Network And Chaotic Inspiration	270
<i>A. Coca, D. Correa, L. Zhao</i>	
Unsupervised Multimodal Feature Learning For Semantic Image Segmentation	277
<i>D. Pei, H. Liu, Y. Liu, F. Sun</i>	
Sparse Maximum Entropy Deep Belief Nets	283
<i>H. Jing, Y. Tsao</i>	
A Guided Autowave PCNN For Improved Real Time Path Planning	289
<i>S. Ahmed, U. Malik, M. Iqbal, F. Kunwar</i>	
Evolutionary Extreme Learning Machine Based On Particle Swarm Optimization And Clustering Strategies	296
<i>L. Pacifico, T. Ludermir</i>	
A Perception Evolution Network For Unsupervised Fast Incremental Learning	302
<i>Y. Xing, F. Shen, J. Zhao</i>	
Weighted Entropy Cortical Algorithms For Isolated Arabic Speech Recognition	310
<i>N. Hajj, M. Awad</i>	
Neural Network Based Finite Horizon Stochastic Optimal Controller Design For Nonlinear Networked Control Systems	317
<i>H. Xu, S. Jagannathan</i>	
Solutions To Finite Horizon Cost Problems Using Actor-Critic Reinforcement Learning	324
<i>I. Grondman, H. Xu, S. Jagannathan, R. Babuska</i>	
Learning Population Of Spiking Neural Networks With Perturbation Of Conductances	331
<i>P. Suszynski, P. Wawrzynski</i>	
Unsupervised Feature Selection For Proportional Data Clustering Via Expectation Propagation	337
<i>W. Fan, N. Bouguila</i>	

Robust EM Algorithm For Model-Based Curve Clustering	345
<i>F. Chamroukhi</i>	
Autonomous Reinforcement Learning With Hierarchical REPS.....	353
<i>C. Daniel, G. Neumann, J. Peters</i>	
Multilevel Adaptive Neural Network Architecture For Implementing Single-Chip Intelligent Agents On FPGAs	361
<i>R. Finkler, I. Campo, J. Echanobe, F. Doctor</i>	
Model Ensemble For An Effective On-Line Reconstruction Of Missing Data In Sensor Networks	370
<i>C. Alippi, S. Ntalampiras, M. Roveri</i>	
Application Of Dynamic Neural Networks With Exogenous Input To Industrial Conditional Monitoring.....	376
<i>S. Yusuf, D. Brown, A. Mackinnon, R. Papanicolaou</i>	
Aircraft Sensor Estimation For Fault Tolerant Flight Control System Using Fully Connected Cascade Neural Network.....	384
<i>S. Hussain, M. Mokhtar, J. Howe</i>	
WSN-ANN: Parallel And Distributed Neurocomputing With Wireless Sensor Networks.....	392
<i>G. Serpen, J. Li, L. Liu, Z. Gao</i>	
Biologically Inspired Distributed Sensor Networks: Collective Signal Amplification Via Ultra-Low Bandwidth Spike-Based Communication	400
<i>S. Lundquist, D. Paiton, B. Nowers, P. Schultz, S. Brumby, A. Jorgensen, G. Kenyon</i>	
Self-Learning And Neural Network Adaptation By Embedded Collaborative Learning Engine (eCLE) - An Overview	409
<i>F. Maldonado, S. Oonk</i>	
Multi-Pattern Cross Training: An ANN Model Training Method Using WSN Sensor Data	417
<i>Y. Zhao, V. Gies, A. Teles, J. Ginoux</i>	
Concept Drift Detection For Online Class Imbalance Learning.....	423
<i>S. Wang, L. Minku, D. Ghezzi, D. Caltabiano, P. Tino, X. Yao</i>	
Scalable, Incremental Learning With MapReduce Parallelization For Cell Detection In High-Resolution 3D Microscopy Data	433
<i>C. Sung, J. Woo, M. Goodman, T. Huffman, Y. Choe</i>	
Incremental Learning Of New Classes From Unbalanced Data	440
<i>G. Ditzler, G. Rosen, R. Polikar</i>	
A Robust Incremental Principal Component Analysis For Feature Extraction From Stream Data With Missing Values.....	448
<i>D. Aoki, T. Omori, S. Ozawa</i>	
Periodic Activation Functions In Memristor-Based Analog Neural Networks	456
<i>C. Merkel, D. Kudithipudi, N. Sereni</i>	
Memristor SPICE Model And Crossbar Simulation Based On Devices With Nanosecond Switching Time	463
<i>C. Yakopcic, T. Taha, G. Subramanyam, R. Pino</i>	
Cognitive Clustering Algorithm For Efficient Cybersecurity Applications.....	470
<i>R. Kozma, J. Rosa, D. Piazzentini</i>	
Routing Bandwidth Model For Feed Forward Neural Networks On Multicore Neuromorphic Architectures.....	478
<i>R. Hasan, T. Taha</i>	
Memristor-Based Synapse Design And A Case Study In Reconfigurable Systems	486
<i>F. Ji, H. Li, B. Wysocki, C. Thiem, N. McDonald</i>	
Autism Spectrum Disorder Detection Using Projection Based Learning Meta-Cognitive RBF Network.....	492
<i>S. Vigneshwaran, B. Mahanand, S. Suresh, R. Savitha</i>	
Incremental Learning Using Self-Organizing Neural Grove	500
<i>H. Inoue, Y. Umemoto</i>	
An Importance Weighted Projection Method For Incremental Learning Under Unstationary Environments	505
<i>K. Yamauchi</i>	
Incremental Learning From Several Different Microarrays	514
<i>V. Nikulin, N. Rogovschi, N. Grozavu</i>	
Quantum Neural Network Based Surface EMG Signal Filtering For Control Of Robotic Hand.....	521
<i>V. Gandhi, T. McGinnity</i>	
IC Chip Of Pulse-Type Hardware Neural Networks For Hexapod Walking MEMS Micro Robot	528
<i>K. Saito, S. Takahama, S. Yamasaki, M. Takato, Y. Sekine, F. Uchikoba</i>	
How Can A Robot Evaluate Its Own Behavior? A Neural Model For Self Assessment	534
<i>A. Jauffret, C. Grand, N. Cuperlier, P. Gaussier, P. Tarroux</i>	

Robot Coverage Control By Evolved Neuromodulation	542
<i>K. Harrington, E. Awa, S. Cussat-Blanc, J. Pollack</i>	
Real-Time Decentralized Inverse Optimal Neural Control For A Shrimp Robot.....	550
<i>M. Lopez-Franco, E. Sanchez, A. Alanis, N. Arana-Daniel</i>	
Discrete Time Neural Control Of A Nonholonomic Mobile Robot Integrating Stereo Vision Feedback.....	557
<i>M. Lopez-Franco, E. Sanchez, A. Alanis, C. Lopez-Franco</i>	
Unified Losses For Multi-Modal Pose Coding And Regression	565
<i>L. Johnson, J. Cooper, D. Ballard</i>	
A Neurocomputing Model For Ganglion Cell's Color Opponency Mechanism And Its Application In Image Analysis.....	573
<i>H. Wei, H. Wu</i>	
Audio-Visual Fuzzy Fusion For Robust Speech Recognition.....	581
<i>M. Malcangi, K. Ouazzane, P. Patel</i>	
A Spiking Thalamus Model For Form And Motion Processing Of Images	589
<i>S. Chelian, N. Srinivasa</i>	
A Biologically Inspired Recurrent Neural Network For Sound Source Recognition Incorporating Auditory Attention	595
<i>M. Boes, D. Oldoni, B. Coensel, D. Botteldooren</i>	
Multi-Sensory Integration Using Sparse Spatio-Temporal Encoding	603
<i>A. Rao, G. Cecchi</i>	
Information Theoretic Analysis Of Energy Efficient Neurons With Biologically Plausible Constraints	611
<i>S. Ghavami, F. Lahouti, L. Schwabe</i>	
Integrated Information For Large Complex Networks	619
<i>X. Arsiwalla, P. Verschueren</i>	
Creation Of Spiking Neuron Models Applied In Pattern Recognition Problems.....	626
<i>J. Espinosa-Ramos, N. Cruz-Cortes, R. Vazquez</i>	
Overcoming The Local-Minimum Problem In Training Multilayer Perceptions By Gradual Deconvexification.....	634
<i>J. Lo, Y. Gui, Y. Peng</i>	
Robust Human Action Recognition Via Long Short-Term Memory	640
<i>A. Grushin, D. Monner, J. Reggia, A. Mishra</i>	
Active Selection Of Training Instances For A Random Forest Meta-Learner	648
<i>A. Sousa, R. Prudencio, C. Soares, T. Ludermir</i>	
Ordinal-Based Metric Learning For Learning Using Privileged Information	655
<i>S. Fouad, P. Tino</i>	
A Pixel-Level, Intensity-Based Nonlinear Autoregressive Classifier (NARX) With Chromatic Exogenous Input For Efficient Image Background Subtraction	663
<i>S. Yusuf, D. Brown, A. Mackinnon, R. Papanicolaou</i>	
Iterative Learing Of Fisher Linear Discriminants For Handwritten Digit Recognition.....	671
<i>Q. Feng, G. Daqi</i>	
Function Learning With Local Linear Regression Models: An Analysis Based On Discrepancy	677
<i>C. Cervellera, D. Maccio, R. Marcialis</i>	
A Hierarchical Method For Traffic Sign Classification With Support Vector Machines	685
<i>G. Wang, G. Ren, Z. Wu, Y. Zhao, L. Jiang</i>	
Heteroscedastic Gaussian Based Correction Term For Fisher Discriminant Analysis And Its Kernel Extension	691
<i>T. Yokota, T. Wakahara, Y. Yamashita</i>	
Training The Feedforward Neural Network Using Unconscious Search	699
<i>M. Amin-Naseri, E. Ardjmand, G. Weckman</i>	
Using Confidence Values In Multi-Label Classification Problems With Semi-Supervised Learning	706
<i>F. Rodrigues, A. Santos, A. Canuto</i>	
Detection Of Traffic Signs In Real-World Images: The German Traffic Sign Detection Benchmark	714
<i>S. Houben, J. Stallkamp, J. Salmen, M. Schlipsing, C. Igel</i>	
A Traffic Sign Detection Pipeline Based On Interest Region Extraction	722
<i>S. Salti, A. Petrelli, F. Tombari, N. Fioraio, L. Di Stefano</i>	
Traffic Sign Detection With VG-RAM Weightless Neural Networks	729
<i>A. De Souza, C. Fontana, F. Mutz, T. Oliveira, M. Berger, A. Forechi, J. Neto, E. Aguiar, C. Badue</i>	
Traffic Sign Detection By ROI Extraction And Histogram Features-Based Recognition	738
<i>M. Liang, M. Yuan, X. Hu, J. Li, H. Liu</i>	
Traffic Sign Detection Based On Convolutional Neural Networks.....	746
<i>Y. Wu, Y. Liu, J. Li, H. Liu, X. Hu</i>	

A Robust, Coarse-To-Fine Traffic Sign Detection Method	753
<i>G. Wang, G. Ren, Z. Wu, Y. Zhao, L. Jiang</i>	
Biologically Plausible Feature Selection Through Relative Correlation	758
<i>P. Connor, T. Trappenberg</i>	
Massively Parallel Learning Of Bayesian Networks With MapReduce For Factor Relationship Analysis	766
<i>W. Chen, T. Wang, D. Yang, K. Lei, Y. Liu</i>	
Active Learning Of Causal Bayesian Networks Using Ontologies: A Case Study	771
<i>M. Messaoud, P. Leray, N. Amor</i>	
SAXO: An Optimized Data-Drive Symbolic Representation Of Time Series	779
<i>A. Bondu, M. Boule, B. Grossin</i>	
Effective Utilization Of Data In Inductive Conformal Prediction Using Ensembles Of Neural Networks	788
<i>T. Lofstrom, U. Johansson, H. Bostrom</i>	
Artificial Immune System For Attribute Weighted Naive Bayes Classification	796
<i>J. Wu, Z. Cai, S. Zeng, X. Zhu</i>	
Artificial Neural Networks For Spatial Perception Towards Visual Object Localisation In Humanoid Robots	804
<i>J. Leitner, S. Harding, M. Frank, A. Forster, J. Schmidhuber</i>	
Application Of The Visuo-Oculomotor Transformation To Ballistic And Visually-Guided Eye Movements	811
<i>M. Antonelli, A. Duran, A. Pobil</i>	
Population Coding For A Reward-Modulated Hebbian Learning Of Vergence Control	819
<i>A. Gibaldi, A. Canessa, M. Chessa, F. Solari, S. Sabatini</i>	
Cluster Oriented Ensemble Classifiers Using Multi-Objective Evolutionary Algorithm	827
<i>A. Rahman, B. Verma</i>	
A New Approach To Three Ensemble Neural Network Rule Extraction Using Recursive-Rule Extraction	833
<i>Y. Hayashi, R. Sato, S. Mitra</i>	
Using Ensembles For Adaptive Learning: A Comparative Approach	840
<i>T. Escovedo, A. Cruz, M. Vellasco, A. Koshyama</i>	
Feature Extraction Based On Hierarchical Growing Neural Gas For Informationally Structured Space	847
<i>Y. Toda, N. Kubota</i>	
Incremental On-Line Learning Of Human Motion Using Gaussian Adaptive Resonance Hidden Markov Model	854
<i>F. Dawood, C. Loo, W. Chin</i>	
Assistance Of Knee Movements Using An Actuated Orthosis Through Subject's Intention Based On MLPNN Approximators	861
<i>S. Mefoued</i>	
Neuromorphic Learning Towards Nano Second Precision	867
<i>T. Pfeil, A. Scherzer, J. Schemmel, K. Meier</i>	
Analogical Mapping And Inference With Binary Spatter Codes And Sparse Distributed Memory	872
<i>B. Emruli, R. Gayler, F. Sandin</i>	
A Fast Analogue K-Winners-Take-All Neural Circuit	880
<i>P. Tymoshchuk</i>	
Gaussian-Bernoulli Deep Boltzmann Machine	888
<i>K. Cho, T. Raiko, A. Ilin</i>	
Convergence Of A Neural Network For Sparse Approximation Using The Nonsmooth Łojasiewicz Inequality	895
<i>A. Balavoine, C. Rozell, J. Romberg</i>	
The Simultaneous Coding Of Heading And Path In Primate MSTd	903
<i>O. Layton, N. Browning</i>	
Neurodynamic Optimization Approaches To Robust Pole Assignment Based On Alternative Robustness Measures	911
<i>X. Le, J. Wang</i>	
Recurrent Neural Networks With Fixed Time Convergence For Linear And Quadratic Programming	919
<i>J. Sanchez-Torres, E. Sanchez, A. Loukianov</i>	
A Prior-Free Encode-Decode Change Detection Test To Inspect Datastreams For Concept Drift	924
<i>C. Alippi, L. Bu, D. Zhao</i>	
Extracting Discriminative Features For Identifying Abnormal Sequences In One-Class Mode	930
<i>Y. Song, L. Cao, J. Yin, C. Wang</i>	

Combining Pattern Sequence Similarity With Neural Networks For Forecasting Electricity Demand Time Series.....	938
<i>I. Koprinska, M. Rana, A. Troncoso, F. Martinez-Alvarez</i>	
Prediction Intervals For Electricity Load Forecasting Using Neural Networks.....	946
<i>M. Rana, I. Koprinska, A. Khosravi, V. Agelidis</i>	
Forecasting Models Of Wind Power In Northeastern Of Brazil.....	954
<i>R. Aquino, T. Ludermir, O. Neto, A. Ferreira, M. Lira, M. Carvalho</i>	
Hiddgp Markov Models With Graph Densities For Action Recognition	962
<i>M. Glodek, E. Trentin, F. Schwenker, G. Palm</i>	
A Modified Error-Correction Learning Rule For Multilayer Neural Network With Multi-Valued Neurons.....	968
<i>I. Aizenberg</i>	
Self-Organizing Maps With A Single Neuron	976
<i>G. Georgiou, K. Voigt</i>	
Complex-Valued Bidirectional Auto-Associative Memory	982
<i>Y. Suzuki, M. Kobayashi</i>	
Chaotic Complex-Valued Multidirectional Associative Memory With Adaptive Scaling Factor	989
<i>T. Chino, Y. Osana</i>	
Investigation Of Complex Dynamics In A Recurrent Neural Network With Network Community Structure And Asymmetric Weight Matrix.....	997
<i>F. Sousa, L. Zhao</i>	
Capacity Limits In Oscillatory Networks: Implications For Sensory Coding.....	1004
<i>A. Rao, G. Cecchi</i>	
Stereo Where-What Networks: Unsupervised Binocular Feature Learning	1012
<i>M. Solgi, J. Weng</i>	
A Topographical Nonnegative Matrix Factorization Algorithm	1020
<i>N. Rogovschi, L. Labiod, M. Nadif</i>	
Soft Kernel Spectral Clustering.....	1026
<i>R. Langone, R. Mall, J. Suykens</i>	
Brain-Inspired Self-Organizing Model For Incremental Learning.....	1034
<i>K. Gunawardana, J. Rajapakse, D. Alahakoon</i>	
Interval Data Clustering Using Self-Organizing Maps Based On Adaptive Mahalanobis Distances	1042
<i>C. Hajjar, H. Hamdan</i>	
Coupled Term-Term Relation Analysis For Document Clustering.....	1048
<i>X. Cheng, D. Miao, C. Wang, L. Cao</i>	
A Fast Proximal Method For Convolutional Sparse Coding	1056
<i>R. Chalasani, J. Principe, N. Ramakrishnan</i>	
A New Bi-Clustering Approach Using Topological Maps	1061
<i>A. Chaibi, M. Lebbah, H. Azzag</i>	
Non-Negative Sparse Coding For Motion Extraction.....	1068
<i>T. Guthier, V. Willert, A. Schnall, K. Kreuter, J. Eggert</i>	
Vigilance Adaptation In Adaptive Resonance Theory.....	1076
<i>L. Meng, A. Tan, D. Wunsch</i>	
Kernel Spectral Clustering For Dynamic Data Using Multiple Kernel Learning.....	1083
<i>D. Peluffo-Ordonez, S. Garcia-Vega, R. Langone, J. Suykens, G. Castellanos-Dominguez</i>	
Robust Non-Negative Matrix Factorization Via Joint Sparse And Graph Regularization	1089
<i>S. Yang, C. Hou, C. Zhang, Y. Wu, S. Weng</i>	
Multidimensional Splines With Infinite Number Of Knots As SVM Kernels	1094
<i>R. Izmailov, V. Vapnik, A. Vashist</i>	
Improving Multi-Label Classification Performance By Label Constraints.....	1101
<i>B. Chen, X. Hong, L. Duan, J. Hu</i>	
Kernel-Based Distance Metric Learning In The Output Space	1106
<i>C. Li, M. Georgopoulos, G. Anagnostopoulos</i>	
Speaker Recognition Based On SOINN And Incremental Learning Gaussian Mixture Model.....	1114
<i>Z. Tang, F. Shen, J. Zhao</i>	
Fixed-Size Pegasos For Hinge And Pinball Loss SVM	1120
<i>V. Jumutc, X. Huang, J. Suykens</i>	
Analysis On Extended Kernel Recursive Least Squares Algorithm.....	1127
<i>P. Zhu, J. Principe</i>	
Survival Kernel With Application To Kernel Adaptive Filtering	1131
<i>B. Chen, N. Zheng, J. Principe</i>	

Mixture Kernel Least Mean Square.....	1137
<i>R. Pokharel, S. Seth, J. Principe</i>	
A Support Vector Machine Classifier From A Bit-Constrained, Sparse And Localized Hypothesis Space	1144
<i>D. Anguita, A. Ghio, L. Oneto, S. Ridella</i>	
SVM Classification Of Epileptic EEG Recordings Through Multiscale Permutation Entropy.....	1154
<i>D. Labate, I. Palamara, N. Mamnone, G. Morabito, F. Foresta, F. Morabito</i>	
Rejection Based Support Vector Machines For Financial Time Series Forecasting.....	1159
<i>Y. Rosowsky, R. Smith</i>	
Closed-Form Projection Operator Wavelet Kernels In Support Vector Learning For Nonlinear Dynamical Systems Identification	1166
<i>Z. Lu, W. Yan</i>	
A Spatial Selective Visual Attention Pattern Recognition Method Based On Joint Short SSVEP	1174
<i>S. Xie, F. Zhu, K. Obermayer, P. Ritter, L. Wang</i>	
A Study On Visual Attention Modeling--A Linear Regression Method Based On EEG	1181
<i>Q. Dong, B. Hu, J. Zhang, X. Li, M. Ratcliffe</i>	
Olfaction Recognition By EEG Analysis Using Differential Evolution Induced Hopfield Neural Net	1187
<i>A. Saha, A. Konar, P. Rakshit, A. Ralescu, A. Nagar</i>	
Spatial Alignment Of Scalp EEG Activity During Cognitive Tasks.....	1195
<i>M. Myers, C. Joure, C. Johnston, A. Canales, A. Padmanabha, R. Kozma</i>	
A Multi-Resolution-Concentration Based Feature Construction Approach For Spam Filtering.....	1203
<i>G. Mi, P. Zhang, Y. Tan</i>	
Autonomous Reinforcement Of Behavioral Sequences In Neural Dynamics	1211
<i>S. Kazeroonian, M. Luciw, M. Richter, Y. Sandamirskaya</i>	
A New Hybrid Swarm Optimization Algorithm For Power System Vulnerability Analysis And Sensor Network Deployment.....	1219
<i>H. Zhang, Q. Hui</i>	
Tactical Task Allocation And Resource Management In Non-Stationary Swarm Dynamics	1227
<i>J. Roach, R. Marks, B. Thompson</i>	
An Application Of Quantum-Inspired Particle Swarm Optimization To Function Optimization Problems.....	1232
<i>K. Tazuke, N. Muramoto, N. Matsui, T. Isokawa</i>	
Achieving CO₂ Emission Targets For Energy Consumption At Canadian Manufacturing And Beyond; Using Hybrid Optimization Model.....	1238
<i>A. Marzi, E. Marzi, H. Marzi</i>	
A Spiking Network For Spatial Memory Formation: Towards A Fly-Inspired Ellipsoid Body Model.....	1243
<i>P. Arena, S. Maceo, L. Patane, R. Strauss</i>	
A Spiking Network For Body Size Learning Inspired By The Fruit Fly	1249
<i>P. Arena, G. Di Mauro, T. Krause, L. Patane, R. Strauss</i>	
A Study Of Transformation-Invariances Of Deep Belief Networks.....	1256
<i>Z. Shou, Y. Zhang, H. Cai</i>	
Neural Architecture For Complex Scene Recognition Based On Rank-Order Features Of IT Neurons	1264
<i>S. Tarasenko, N. Efremova</i>	
Neural And Statistical Processing Of Spatial Cues For Sound Source Localisation.....	1272
<i>J. Davila-Chacon, S. Magg, J. Liu, S. Wermter</i>	
A Location-Independent Direct Link Neuromorphic Interface.....	1280
<i>A. Rast, J. Partzsch, C. Mayr, J. Schemmel, S. Hartmann, L. Plana, S. Temple, D. Lester, R. Schuffny, S. Furber</i>	
Detection Of Spatiotemporal Phase Patterns In ECoG Using Adaptive Mixture Models.....	1288
<i>R. Ilin, R. Kozman</i>	
A General Aggregate Model For Improving Multi-Class Brain-Computer Interface Systems' Performance	1295
<i>T. Hoang, D. Tran, X. Huang, W. Ma</i>	
The Effect Of Methods Addressing The Class Imbalance Problem On P300 Detection.....	1300
<i>G. Xu, F. Shen, J. Zhao</i>	
A Hierarchical Organized Memory Model Using Spiking Neurons	1305
<i>J. Hu, H. Tang, K. Tan</i>	
The Use Of Optical And Sonar Images In The Human And Dolphin Brain For Image Classification	1311
<i>S. Jalali, P. Seekings, C. Tan, A. Ratheesh, J. Lim, E. Taylor</i>	
Integrating Developmental And Conventional Markov Decision Processes: An Application To Robotic Navigation	1319
<i>S. Zeng, Y. Chen</i>	

Neural Hopfield-Ensemble For Multi-Class Head Pose Detection	1325
<i>N. Meins, S. Magg, S. Wermter</i>	
The Added Value Of Gating In Evolved Neurocontrollers	1333
<i>T. Chabuk, J. Reggia</i>	
Dynamic Learning Algorithm Of Multi-Layer Perceptrons For Letter Recognition	1341
<i>Q. Feng, G. Daqi</i>	
A Computational Model For Motor Learning In Insects	1347
<i>P. Arena, S. Caccamo, L. Patane, R. Strauss</i>	
Exogenous Control And Dynamical Reduction Of Echo State Networks	1355
<i>P. Stinson, K. Bush</i>	
The Spectral Radius Remains A Valid Indicator Of The Echo State Property For Large Reservoirs.....	1362
<i>K. Caluwaerts, F. Wyffels, S. Dieleman, B. Schrauwen</i>	
Dynamics Of Hodgkin And Huxley Model With Conductance Based Synaptic Input	1368
<i>P. Bajaj, A. Garg</i>	
A Computational Model Of Perirhinal Cortex: Gating And Repair Of Input To The Hippocampus	1375
<i>A. Lester, M. Howard, J. Fellous, R. Bhattacharyya</i>	
A Hierarchical Model Of Synergistic Motor Control	1384
<i>K. Byadarhaly, A. Minai</i>	
Is Cognitive Dissonance Compatible With Human Evolution?	1392
<i>L. Perlovsky, N. Masataka, M. Cabanac</i>	
Neuromodulation Based Control Of An Autonomouse Robot.....	1395
<i>A. Prince, B. Samanta</i>	
Modeling The Effects Of Neuromodulation On Internal Brain Areas: Serotonin And Dopamine.....	1402
<i>Z. Zheng, K. Qian, J. Weng, Z. Zhang</i>	
Active Learning In Nonstationary Environments.....	1410
<i>R. Capo, K. Dyer, R. Polikar</i>	
Incremental Decision Tree Based On Order Statistics	1418
<i>C. Salperwyck, V. Lemaire</i>	
Active Learning In The Real-World Design And Analysis Of The Nomao Challenge.....	1426
<i>L. Candillier, V. Lemaire</i>	
Improving Drug Discovery Using A Neural Networks Based Parallel Scoring Function.....	1434
<i>H. Perez-Sanchez, G. Guerrero, J. Garcia, J. Pena, J. Cecilia, G. Cano, S. Orts-Escalano, J. Garcia-Rodriguez</i>	
Active Testing For SVM Parameter Selection.....	1439
<i>P. Miranda, R. Prudencio</i>	
Unsupervised Collaborative Boosting Of Clustering: An Unifying Framework For Multi-View Clustering, Multiple Consensus Clusterings and Alternative Clustering	1447
<i>J. Sublemontier</i>	
On The Role Of Shape Prototypes In Hierarchical Models Of Vision	1455
<i>M. Thomure, M. Mitchell, G. Kenyon</i>	
Solving The Local Minimum And Flat-Spot Problem By Modifying Wrong Outputs For Feed-Forward Neural Networks	1461
<i>C. Cheung, S. Ng, A. Lui, S. Xu</i>	
Partially Affine Invariant Training Using Dense Transform Matrices.....	1468
<i>M. Robinson, M. Manry</i>	
Neural Decision Directed Segmentation Of Silicon Defects	1474
<i>A. Godbole, K. Tyagi, M. Manry</i>	
Déjà Vu Object Localization Using IRF Neural Networks Properties.....	1482
<i>P. Smagghe, J. Buesler, J. Urban</i>	
Continuous Neural Identifier For Uncertain Nonlinear Systems With Time Delays In The Input Signal	1490
<i>M. Alfaro-Ponce, A. Arguelles, I. Chairez</i>	
Restricted Boltzmann Machines For Pre-Training Deep Gaussian Networks	1498
<i>M. Eastwood, C. Jayne</i>	
Minimizing Validation Error With Respect To Network Size And Number Of Training Epochs	1506
<i>R. Rawat, J. Patel, M. Manry</i>	
Multi-Scale Pyramidal Pooling Network For Generic Steel Defect Classification	1513
<i>J. Masci, U. Meier, G. Fricout, J. Schmidhuber</i>	
Investigation Of Four-Layer Multi-Layer Perception With Glia Connections Of Hidden-Layer Neurons.....	1521
<i>C. Ikuta, Y. Uwate, Y. Nishio</i>	

Fast Parking Control Of Mobile Robot Based On Multi-Layer Neural Network On Homogeneous Architecture	1527
<i>H. Chenini, J. Derutin, T. Tixier</i>	
A Computationally Efficient Associative Memory Model Of Hippocampus CA3 By Spiking Neurons	1537
<i>C. Tan, H. Tang, E. Cheu, J. Hu</i>	
Strong Attractors Of Hopfield Neural Networks To Model Attachemnt Types And Behavioural Patterns	1545
<i>A. Edalat, F. Mancinelli</i>	
Fully-Digital Oscillatory Associative Memories Enabled By Non-Volatile Logic	1555
<i>V. Calayir, L. Pileggi</i>	
A Novel Reservoir Network Of Asynchronous Cellular Automation Based Neurons For MIMO Neural System Reproduction	1561
<i>T. Matsubara, H. Torikai</i>	
Power Analysis Of Large-Scale, Real-Time Neural Networks On SpiNNaker	1568
<i>E. Stromatias, F. Galluppi, C. Patterson, S. Furber</i>	
Morphological Learning: Increased Memory Capacity Of Neuromorphic Systems With Binary Synapses Exploiting AER Based Reconfiguration	1576
<i>S. Hussain, R. Gopalakrishnan, A. Basu, S. Liu</i>	
A Spiking Neural Network For Illuminant-Invariant Colour Discrimination	1583
<i>S. Ratnasingam, A. Robles-Kelly</i>	
A New Spiking Neuron Model	1591
<i>B. Chandra, K. Babu</i>	
Modeling Populations Of Spiking Neurons For Fine Timing Sound Localization	1596
<i>Q. Liu, C. Patterson, S. Furber, Z. Huang, Y. Hou, H. Zhang</i>	
Thinking In Prose And Poetry: A Semantic Neural Model	1604
<i>S. Doumit, N. Marupaka, A. Minai</i>	
Toward A Neural Network Theory Of Emotional Influences On Creativity	1612
<i>D. Levine, M. Nadin</i>	
Towards A Unified Neurobiological Theory Of Creative Problem Solving	1619
<i>S. Helie</i>	
Modeling The Effect Of Hint Timing On The Idea Generation Process	1627
<i>S. Doboli, M. Jacques, A. Minai, P. Paulus, R. Korde, A. Doboli</i>	
Dual-Process Architecture For Reasoning In Design Innovation Problems	1635
<i>A. Doboli, S. Doboli</i>	
Dissimilarity Space Embedding Of Labeled Graphs By A Clustering-Based Compression Procedure	1643
<i>L. Livi, F. Bianchi, A. Rizzi, A. Sadeghian</i>	
Generic Object Recognition With Local Features: From Bags To Subspaces	1651
<i>B. Raytchev, Y. Kikutsugi, R. Shigenaka, T. Tamaki, K. Kaneda</i>	
Matching Of Time-Varying Labeled Graphs	1657
<i>F. Bianchi, L. Livi, A. Rizzi</i>	
Maximal Margin Learning Vector Quantisation	1665
<i>T. Le, D. Tran, V. Nguyen, W. Ma</i>	
Toward A Casual Topic Model For Video Scene Analysis	1671
<i>J. McCaffery, A. Maida</i>	
Extraction Of 2D-Pattern Signatures For Protein Folds	1679
<i>S. Vani, D. Bhavani</i>	
Some Results About The Vapnik-Chervonenkis Entropy And The Rademacher Complexity	1687
<i>D. Anguita, A. Ghio, L. Oneto, S. Ridella</i>	
A Dynamical Model For Community Detection In Complex Networks	1695
<i>M. Quiles, E. Zorzan, E. Macau</i>	
Learning In Deep Architectures With Folding Transformations	1703
<i>L. Szymanski, B. McCane</i>	
Transfer Learning Based Compressive Tracking	1711
<i>S. Tian, X. Yin, X. Xu, H. Hao</i>	
Preprocessing Unbalanced Data Using Weighted Support Vector Machines For Prediction Of Heart Disease In Children	1718
<i>T. Tavares, A. Oliveira, G. Cabra, S. Mattos, R. Grigorio</i>	
Detecting And Labeling Representative Nodes For Network-Based Semi-Supervised Learning	1726
<i>B. Araujo, L. Zhao</i>	
Active Semi-Supervised Learning Using Particle Competition And Cooperation In Networks	1734
<i>F. Breve</i>	

A Root Location Training Method For Polynomial Cellular Neural Networks That Implements Totalistic Cellular Automata	1740
<i>A. Arista-Jalife, E. Gomez-Ramirez</i>	
Analysis Of Various Transient Phenomena And Co-Existing Periodic Spike-Trains In Simple Digital Spike Maps.....	1748
<i>N. Horimoto, T. Saito</i>	
Neural Spiking Dynamics In Asynchronous Digital Circuits.....	1756
<i>N. Imam, K. Wecker, J. Tse, R. Karmazin, R. Manohar</i>	
Bifurcation Phenomena Of Simple Pulse-Coupled Spiking Neuron Models With Filtered Base Signal	1764
<i>S. Kirikawa, T. Saito</i>	
A Neural Network Based Algorithm For Gene Expression Prediction From Chromatin Structure.....	1772
<i>M. Frasca, G. Pavesi</i>	
Predicting Nerve Guidance Conduit Performance For Peripheral Nerve Regeneration Using Bootstrap Aggregated Neural Networks.....	1780
<i>W. Koch, Y. Meng, M. Shah, W. Chang, X. Yu</i>	
Artificial Neural Networks For Predicting 3D Protein Shapes From Amino Acid Sequences.....	1787
<i>H. Viktor, E. Paquet, J. Zhao</i>	
Optimized Neuro Genetic Fast Estimator (ONGFE) For Efficient Distributed Intelligence Instantiation Within Embedded Systems	1795
<i>F. Maldonado, S. Oonk, T. Politopoulos</i>	
A Fuzzy Technique To Control Congestion In WSN.....	1803
<i>S. Ghanavati, J. Abawajy, D. Izadi</i>	
SOMMA: Cortically Inspired Paradigms For Multimodal Processing.....	1808
<i>M. Lefort, Y. Boniface, B. Girau</i>	
Shaping Synaptic Learning By The Duration Of The Postsynaptic Action Potential.....	1816
<i>Y. Zheng, L. Schwabe</i>	
Biologically Plausible Models Of Homeostasis And STDP: Stability And Learning In Spiking Neural Networks.....	1821
<i>K. Carlson, M. Richert, N. Dutt, J. Krichmar</i>	
Spike-Based Learning Of Transfer Functions With The SpiNNaker Neuromimetic Simulator.....	1829
<i>S. Davies, T. Stewart, C. Eliasmith, S. Furber</i>	
GPU Facilitated Unsupervised Visual Feature Acquisition In Spiking Neural Networks.....	1837
<i>B. Lemoine, A. Maida</i>	
A Basis Coupled Evolving Spiking Neural Network With Afferent Input Neurons	1843
<i>D. Shirin, R. Savitha, S. Suresh</i>	
A Hybrid Forecasting Approach Using ARIMA Models And Self-Organising Fuzzy Neural Networks For Capital Markets.....	1851
<i>S. McDonald, S. Coleman, T. McGinnity, Y. Li</i>	
Coupled Market Behavior Based Financial Crisis Detection.....	1858
<i>W. Cao, L. Cao, Y. Song</i>	
A Comparative Study On Forecasting Polyester Chips Prices For 15 Days, Using Different Hybrid Intelligent Systems.....	1866
<i>M. Fazli, J. Lebratry</i>	
Biologically Inspired Intensity And Range Image Feature Extraction	1873
<i>D. Kerr, S. Coleman, T. McGinnity, M. Clogenson</i>	
Learning Convolutional Neural Networks From Few Samples	1881
<i>R. Wagner, M. Thom, R. Schweiger, G. Palm, A. Rothermel</i>	
Adaptive Linear Learning For On-Line Harmonic Identification: An Overview With Study Cases.....	1888
<i>P. Wira, T. Nguyen</i>	
FEBAMSOM-BAM*: Neural Network Model Of Human Categorization Of The N-Bits Parity Problem	1894
<i>L. Morissette, S. Chartier</i>	
Fine-Tuning Of The SOMkNN Classifier	1899
<i>L. Silva, E. Kitani, E. Del-Moral-Hernandez</i>	
A First Analysis Of The Effect Of Local And Global Optimization Weights Methods In The Cooperative-Competitive Design Of RBFN For Imbalanced Environments.....	1906
<i>M. Perez-Godoy, A. Rivera, M. Del Jesus, F. Martinez</i>	
Spreading Activation And Sparseness In A Bidirectional Associative Memory.....	1914
<i>C. Tremblay, M. Dorville, K. Stewart, S. Chartier</i>	
Stimulus Discrimination In Networks Of Spiking Neurons	1921
<i>E. Kuebler, E. Bonnema, J. McCorriston, J. Thivierge</i>	

Dynamic Sample Size Selection Based Quasi-Newton Training For Highly Nonlinear Function Approximation Using Multilayer Neural Networks.....	1929
<i>H. Ninomiya</i>	
Unsupervised Feature Learning Classification Using An Extreme Learning Machine	1935
<i>D. Lam, D. Wunsch</i>	
Classifier Comparison For MSER-Based Text Classification In Scene Images	1940
<i>K. Iqbal, X. Yin, X. Yin, H. Ali, H. Hao</i>	
Measure Optimized Wrapper Framework For Multi-Class Imbalanced Data Learning: An Empirical Study	1946
<i>P. Cao, D. Zhao, O. Zaiane</i>	
A Novel Cost Sensitive Neural Network Ensemble For Multiclass Imbalance Data Learning	1954
<i>P. Cao, B. Li, D. Zhao, O. Zaiane</i>	
ColorPCA: Color Principal Feature Extraction Technique For Color Image Reconstruction And Recognition.....	1962
<i>Z. Zhang, M. Zhao, B. Li, P. Tang</i>	
On The Convergence Of Techniques That Improve Value Iteration	1969
<i>M. Grzes, J. Hoey</i>	
An Interval Nonparametric Regression Method.....	1977
<i>R. Fagundes, R. Filho, R. Souza, F. Cysneiros</i>	
Diversity In Task Decomposition: A Strategy For Combining Mixtures Of Experts	1984
<i>E. Verissimo, D. Severo, G. Cavalcanti, T. Ren</i>	
Locally Linear Representation Fisher Criterion.....	1989
<i>B. Li, J. Liu, Z. Zhao, W. Zhang</i>	
Impact Of Variability In Data On Accuracy And Diversity Of Neural Network Based Ensemble Classifiers	1996
<i>C. Chiu, B. Verma, M. Li</i>	
Neuronal Mechanisms Underlying Exploration-Exploitation Strategies In Operant Learning	2001
<i>S. Lew, H. Rey, B. Zanutto</i>	
Correctness And Performance Of The SpiNNaker Architecture	2007
<i>T. Sharp, S. Furber</i>	
A Highly Accurate, Optical Flow -Based Algorithm For Nonlinear Spatial Normalization Of Diffusion Tensor Images	2015
<i>Y. Wen, B. Peterson, D. Xu</i>	
About Analysis And Robust Classification Of Searchlight fMRI-Data Using Machine Learning Classifiers	2023
<i>M. Lange, M. Kastner, T. Villmann</i>	
Designing Partially-Connected, Multilayer Perceptron Neural Nets Through Information Gain.....	2031
<i>D. Rodriguez-Salas, P. Gomez-Gil, A. Olvera-Lopez</i>	
Evolving Flexible Beta Basis Function Neural Tree For Nonlinear Systems.....	2036
<i>S. Bouaziz, A. Alimi, A. Abraham</i>	
Recurrent Neural Networks Inspired By Artificial Immune Algorithm For Time Series Prediction	2044
<i>D. Al-Jumeily, A. Hussain, H. Alaskar</i>	
A Procedure For Training Recurrent Networks	2052
<i>M. Phan, M. Beale, M. Hagan</i>	
Adaptive Control Of Discrete-Time Nonlinear Systems By Recurrent Neural Networks In A Quasi Sliding Mode Regime.....	2060
<i>I. Salgado, O. Camacho, I. Chairez, C. Yanez</i>	
Robust Neural Predictor For Noisy Chaotic Time Series Prediction	2068
<i>M. Han, X. Wang</i>	
Adaptive Problem Decomposition In Cooperative Coevolution Of Recurrent Networks For Time Series Prediction	2073
<i>R. Chandra</i>	
Electrical Load Forecasting Using Fast Learning Recurrent Neural Networks.....	2081
<i>G. Khan, A. Khattak, F. Zafari, S. Mahmud</i>	
Contradiction Resolution With Explicit And Limited Evaluation And Its Application To SOM.....	2087
<i>R. Kamimura</i>	
Speaker Identification Model For Assamese Language Using A Neural Framework	2095
<i>M. Sarma, K. Sarma</i>	
Self-Organizing Trees For Visualizing Protein Dataset	2102
<i>N. Doan, H. Azzag, M. Lebbah, G. Santini</i>	
Neurocomputing And Associative Memories Based On Ovénized Aluminum Nitride Resonators	2110
<i>V. Calayir, T. Jackson, A. Tazzoli, G. Piazza, L. Pileggi</i>	

Detection And Diagnosis Of Broken Rotor Bars And Eccentricity Faults In Induction Motors Using The Fuzzy Min-Max Neural Network.....	2118
<i>H. Singh, M. Seera, M. Abdullah</i>	
Levenberg-Marquardt And Conjugate Gradient Methods Applied To A High-Order Neural Network	2123
<i>I. El-Nabarawy, A. Abdelbar, D. Wunsch</i>	
Neural Network Ensemble: Evaluation Of Aggregation Algorithms In Electricity Demand Forecasting.....	2130
<i>S. Hassan, A. Khosravi, J. Jaafar</i>	
A New Fast Learning Algorithm With Promising Global Convergence Capability For Feed-Forward Neural Networks	2136
<i>C. Cheung, S. Ng, A. Lui, S. Xu</i>	
A Robot On-Line Area Coverage Approach Based On The Probabilistic Lloyd Method.....	2142
<i>M. Batista, R. Calvo, R. Romero</i>	
A Computational Model Of Selecting Visual Attention Based On Bottom-Up And Top-Down Feature Combination.....	2150
<i>W. Chen, F. Shen, J. Zhao</i>	
Recent Advances In Algorithmic Learning Theory Of The Kanban Cell Neuron Network	2155
<i>C. James</i>	
Modeling Disinhibition Within A Layered Structure Of The LGMD Neuron	2161
<i>A. Silva, C. Santos</i>	
Dysfunctional Neural Activity And Connection Patterns In Attention Deficit Hyperactivity Disorder: A Resting State fMRI Study	2168
<i>W. Wang, B. Hu, Z. Yao, M. Jackson, R. Liu, C. Liang</i>	
STDP Produces Robust Oscillatory Architectures That Exhibit Precise Collective Synchronization.....	2174
<i>D. Bhowmik, M. Shanahan</i>	
Ensemble Of Heterogeneous Classifiers Applied To Lithofacies Classification Using Logs From Different Wells	2182
<i>J. Oliveira, E. Santos, J. Carvalho, L. Marques</i>	
Impute Vs. Ignore: Missing Values For Prediction.....	2188
<i>Q. Zhang, A. Rahman, C. D'Este</i>	
CRNN: Integrating Classification Rules Into Neural Network.....	2196
<i>W. Li, L. Cao, D. Zhao, X. Cui, J. Yang</i>	
Characterization Measures Of Ensemble Systems Using A Meta-Learning Approach.....	2204
<i>R. Parente, A. Canuto, J. Xavier-Junior</i>	
A Hybrid Optimization Method For Acceleration Of Building Linear Classification Models.....	2212
<i>J. Lv, Q. Wang, J. Huang</i>	
Chunk Incremental IDR/QR LDA Learning	2220
<i>Y. Peng, S. Pang, G. Chen, A. Sarrafzadeh, T. Ban, D. Inoue</i>	
A Soft Label Based Linear Discriminant Analysis For Semi-Supervised Dimensionality Reduction.....	2228
<i>M. Zhao, Z. Zhang, H. Zhang</i>	
Feature Construction Approach For Email Categorization Based On Term Space Partition.....	2236
<i>G. Mi, P. Zhang, Y. Tan</i>	
A Parameter-Free Kernel Design Based On Cumulative Distribution Function For Correntropy.....	2244
<i>J. Lee, P. Zhu, J. Principe</i>	
Noise Benefits In Backpropagation And Deep Bidirectional Pre-Training	2249
<i>K. Audhkhasi, O. Osoba, B. Kosko</i>	
Using Neural Networks Committee Machines To Improve Outcome Prediction Assessment In Nonlinear Regression.....	2257
<i>E. Matsumoto, E. Del-Moral-Hernandez</i>	
Using Genetic Algorithms And Ensemble Systems In Online Cancellable Signature Recognition.....	2265
<i>F. Pintro, A. Canuto, M. Fairhurst</i>	
Variational Learning Of Finite Beta-Liouville Mixture Models Using Component Splitting	2273
<i>W. Fan, N. Bouguila</i>	
Random Brains	2281
<i>U. Johansson, T. Lofstrom, H. Bostrom</i>	
Online News Topic Detection And Tracking Via Localized Feature Selection.....	2289
<i>O. Amayri, N. Bouguila</i>	
Self-Adaptive Probability Estimation For Naive Bayes Classification	2297
<i>J. Wu, Z. Cai, X. Zhu</i>	
Non-Parallel Semi-Supervised Classification Based On Kernel Spectral Clustering.....	2305
<i>S. Mehrkanoon, J. Suykens</i>	

Minority SVM For Linearly Separable Imbalanced Datasets	2313
<i>N. Ajeeb, A. Nayal, M. Awad</i>	
Incremental Anomaly Identification By Adapted SVM Method	2318
<i>M. Suvorov, S. Ivliev, G. Markarian, D. Kolev, D. Zvikhachevskiy, P. Angelov</i>	
A Local Mixture Based SVM For An Efficient Supervised Binary Classification	2325
<i>Y. Ritzk, N. Mitri, M. Awad</i>	
Fuzzy Entropy Semi-Supervised Support Vector Data Description	2333
<i>T. Le, D. Tran, T. Tran, K. Nguyen, W. Ma</i>	
The Convergence Rate Of Linearly Separable SMO	2338
<i>J. Lopez, J. Dorronsoro</i>	
A Quasi-Linear SVM Combined With Assembled SMOTE For Imbalanced Data Classification	2345
<i>B. Zhou, C. Yang, H. Guo, J. Hu</i>	
Designing Multi-Objective Multi-Armed Bandits Algorithms: A Study	2352
<i>M. Drugan, A. Nowe</i>	
Collaborative Multi-View Clustering	2360
<i>M. Ghassany, N. Grozavu, Y. Bennani</i>	
Discriminative k-Means Clustering	2368
<i>O. Arandjelovic</i>	
A Comparative Analysis Of Dissimilarity Measures For Clustering Categorical Data	2375
<i>J. Xavier-Junior, A. Canuto, N. Almeida, L. Goncalves</i>	
Learning Vector Quantization With Local Adaptive Weighting For Relevance Determination In Genome-Wide Association Studies	2383
<i>F. Araujo, H. Bassani, A. Araujo</i>	
A Dissimilarity-Based Classifier For Generalized Sequences By A Granular Computing Approach	2391
<i>A. Rizzi, F. Possemato, L. Livi, A. Sebastiani, A. Giuliani, F. Mascioli</i>	
High Level Data Classification Based On Network Entropy	2399
<i>F. Neto, L. Zhao</i>	
Application Of String Kernel Based Support Vector Machine For Malware Packer Identification	2404
<i>T. Ban, R. Isawa, S. Guo, D. Inoue, K. Nakao</i>	
Dealing With Highly Imbalanced Textual Data Gathered Into Similar Classes	2412
<i>J. Lamirel</i>	
Kernel Adaptive Filtering With Confidence Intervals	2419
<i>K. Li, B. Chen, J. Principe</i>	
Non-Preemptive Multi-Constrain Scheduling For Multiprocessor With Hopfield Neural Network	2425
<i>A. Ali</i>	
Mitigation Of Catastrophic Forgetting In Recurrent Neural Networks Using A Fixed Expansion Layer	2431
<i>R. Coop, I. Arel</i>	
Epidemiological Dynamics Modeling By Fusion Of Soft Computing Techniques	2438
<i>T. Nguyen, A. Khosravi, D. Creighton, S. Nahavandi</i>	
Traffic Sign Recognition - How Far Are We From The Solution?	2446
<i>M. Mathias, R. Timofte, R. Benenson, L. Gool</i>	
Handwriting Representation And Recognition Through A Sparse Projection And Low-Rank Recovery Framework	2454
<i>Z. Zhang, C. Liu, M. Zhao</i>	
Robust Image Representation And Decomposition By Laplacian Regularized Latent Low-Rank Representation	2462
<i>Z. Zhang, S. Yan, M. Zhao</i>	
The Adaptive Suffix Tree: A Space Efficient Sequence Learning Algorithm	2469
<i>U. Gunasinghe, D. Alahakoon</i>	
Acquiring Visual Servoing Reaching And Grasping Skills Using Neural Reinforcement Learning	2477
<i>T. Lampe, M. Riedmiller</i>	
Stability Of Direct Heuristic Dynamic Programming For Nonlinear Tracking Control Usintg PID Neural Network	2485
<i>X. Luo, J. Si</i>	
Neural Network Based Finite Horizon Optimal Control For A Class Of Nonlinear Systems With State Delay And Control Constraints	2492
<i>X. Liu, N. Cao, Y. Lin</i>	
Metaclasses And Zoning For Handwritten Document Recognition	2498
<i>V. Macario, G. Silva, M. Souza, C. Zanchettin, G. Cavalcanti</i>	
Learning Bayesian Network Leveled-Structure From Support Based XML Frequent Itemsets	2503
<i>K. Iqbal, X. Yin, H. Hao, Q. Ilyas</i>	

Machine Learning To Predict Extubation Outcome In Premature Infants.....	2511
<i>M. Mueller, C. Wagner, R. Stanislaus, J. Almeida</i>	
Extended Scaled Neural Predictor For Improved Branch Prediction.....	2517
<i>Z. Zhou, M. Kejriwal, R. Miikkulainen</i>	
Image Sequence Recognition With Active Learning Using Uncertainty Sampling.....	2524
<i>M. Minakawa, B. Raychev, T. Tamaki, K. Kaneda</i>	
Domain Adaptation For Cross-Lingual Query Classification Using Search Query Logs And Document Classification.....	2530
<i>M. Hady, R. Ibrahim, A. Ashour</i>	
Finite-Horizon Neural Network-Based Optimal Control Design For Affine Nonlinear Continuous-Time Systems	2538
<i>Q. Zhao, H. Xu, T. Dierks, S. Jagannathan</i>	
Sparse Similarity Matrix Learning For Visual Object Retrieval	2544
<i>Z. Yan, Y. Yu</i>	
A Shape Descriptor Based On Symbolic Data Analysis	2552
<i>C. Almeida, R. Souza, A. Candeias</i>	
Quasi-Random Sampling For Approximate Dynamic Programming	2560
<i>C. Cervellera, M. Gaggero, D. Maccio, R. Marcilis</i>	
Real-Time Road Surface Mapping Using Stereo Matching, V-Disparity And Machine Learning.....	2568
<i>V. Azevedo, A. Souza, L. Veronese, C. Badue, M. Berger</i>	
Neuromorphic Adaptations Of Restricted Boltzmann Machines And Deep Belief Networks.....	2576
<i>B. Pedroni, S. Das, E. Neftci, K. Kreutz-Delgado, G. Cauwenberghs</i>	
Bio-Inspired Orientation Analysis For Seismic Image	2582
<i>Y. Yu, C. Kelley, I. Mardanova</i>	
Incorporating Approximate Dynamic Programming-Based Parameter Tuning Into PD-Type Virtual Inertia Control Of DFIGs	2587
<i>W. Guo, F. Liu, J. Si, S. Mei</i>	
Learning From Local And Global Discriminative Information For Semi-Supervised Dimensionality Reduction.....	2595
<i>M. Zhao, H. Zhang, Z. Zhang</i>	
Design Study Of Efficient Digital Order-Based STDP Neuron Implementations For Extracting Temporal Features	2603
<i>D. Roclin, O. Bichler, C. Gamrat, S. Thorpe, J. Klein</i>	
Extension Of Neuron Machine Neurocomputing Architecture For Spiking Neural Networks.....	2610
<i>J. Ahn</i>	
Energy Efficient Perceptron Pattern Recognition Using Segmented Memristor Crossbar Arrays.....	2618
<i>C. Yakopcic, T. Taha</i>	
Exploring The Design Space Of Specialized Multicore Neural Processors.....	2626
<i>T. Taha, R. Hasan, C. Yakopcic, M. McLean</i>	
DPLL Based Hardware SOM With A New Winner-Take-All Circuit	2634
<i>H. Hikawa</i>	
A CMOS Neuromorphic Approach To Emulate Neuro-Astrocyte Interactions	2642
<i>Y. Irizarry-Valle, A. Parker, J. Joshi</i>	
Cognitive Computing Building Block: A Versatile And Efficient Digital Neuron Model For Neurosynaptic Cores	2649
<i>A. Cassidy, P. Merolla, J. Arthur, S. Esser, B. Jackson, R. Alvarez-Icaza, P. Datta, J. Sawada, T. Wong, V. Feldman, A. Amir, D. Rubin, F. Akopyan, E. McQuinn, W. Risk, D. Modha</i>	
Cognitive Computing Programming Paradigm: A Corelet Language For Composing Networks Of Neurosynaptic Cores	2659
<i>A. Amir, P. Datta, W. Risk, A. Cassidy, J. Kusnitz, S. Esser, A. Andreopoulos, T. Wong, M. Flickner, R. Alvarez-Icaza, E. McQuinn, B. Shaw, N. Pass, D. Modha</i>	
Development Of An Efficient Parameter Estimation Method For The Inference Of Vohradský's Neural Network Models Of Genetic Networks	2669
<i>S. Kimura, M. Sato, M. Okada-Hatakeyama</i>	
Early Diagnosis Of Heart Disease Using Classification And Regression Trees.....	2675
<i>A. Amiri, G. Armano</i>	
An Incremental Learning Face Recognition System For Single Sample Per Person	2679
<i>T. Zhu, F. Shen, J. Zhao</i>	
Automatic Text Categorization By A Granular Computing Approach: Facing Unbalanced Data Sets	2685
<i>F. Possemato, A. Rizzi</i>	

Towards Predicting Persistent Activity Of Neurons By Statistical And Fractal Dimension-Based Features	2693
<i>P. Petrantonakis, A. Papoutsi, P. Poirazi</i>	
Classification Of Marine Organisms In Underwater Images Using CQ-HMAX Biologically Inspired Color Approach	2699
<i>S. Jalali, P. Seekings, C. Tan, H. Tan, J. Lim, E. Taylor</i>	
Geometrical Facial Modeling For Emotion Recognition	2707
<i>G. Libralon, R. Romero</i>	
Genetic Algorithm For Seismic Velocity Picking	2715
<i>K. Huang, K. Chen, J. Yang</i>	
Exploring Mineral Domains With Genetic Algorithm	2723
<i>A. Rahman, R. Dutta, D. Smith</i>	
Noisy Hidden Markov Models For Speech Recognition	2731
<i>K. Audhkhasi, O. Osoba, B. Kosko</i>	
Robust Feedback Passivity Via Dynamic Neural Networks	2737
<i>F. Cruz, W. Yu</i>	
Subcutaneous Neural Inverse Optimal Control For An Artificial Pancreas	2743
<i>B. Leon, A. Alanis, E. Sanchez, F. Ornelas-Tellez, E. Ruiz-Velazquez</i>	
Deep Searching For Parameter Estimation Of The Linear Time Invariant (LTI) System Using Quasi-ARX Neural Network	2751
<i>M. Jami'in, I. Sutrisno, J. Hu</i>	
Neural Inverse Optimal Control For A Linear Induction Motor	2756
<i>V. Lopez, E. Sanchez, A. Alanis</i>	
Face Recognition Improvement With Distortions Of Images In Training Set	2762
<i>E. Kussul T. Baidyk, C. Conde, I. Diego, E. Cabello</i>	
Face Recognition Using Voting Technique For The Gabor And LDP Features	2768
<i>I. Dagher, J. Hassanieh, A. Younes</i>	
Illumination-Invariant Face Recognition From A Single Image Across Extreme Pose Using A Dual Dimension AAM Ensemble In The Thermal Infrared Spectrum	2774
<i>R. Ghiasi, O. Arandjelovic, H. Bendada, X. Mal dague</i>	
Infrared Face Recognition: A Literature Review	2784
<i>R. Ghiasi, O. Arandjelovic, H. Bendada, X. Mal dague</i>	
NeuroEvolutionary Meta-Optimization	2794
<i>A. Lang, K. Stanley</i>	
Robust Controller Design Of Continuous-Time Nonlinear System Using Neural Network	2802
<i>X. Zhong, H. He, D. Prokhorov</i>	
Object Recognition In A Context-Aware Application	2810
<i>T. Vo, D. Tran, W. Ma</i>	
HMeanMax: Placing HMAX And HoG Into A Unified Framework	2818
<i>Y. Zhang, Q. Jiang, M. Sun</i>	
Can N-Dimensional Convolutional Neural Networks Distinguish Men And Women Better Than Humans Do?	2826
<i>I. Mrazova, J. Pihera, J. Veleminska</i>	
A Telecommunications Call Volume Forecasting System Based On A Recurrent Fuzzy Neural Network	2834
<i>P. Mastorocostas, C. Hilas, D. Varsamis, S. Dova</i>	
A Neural Network Model Of The Impact Of Political Instability On Tourism	2840
<i>C. Panchev, A. Theocharous</i>	
Neural Equalizer Trained By The Artificial Immune System Learning Algorithm	2847
<i>P. Coelho, L. Neto</i>	
Optimizing F-Measure With Non-Convex Loss And Sparse Linear Classifiers	2851
<i>P. Chinta, P. Balamurugan, S. Shevade, M. Murty</i>	
A Framework For Content-Based Retrieval Of EEG With Applications To Neuroscience And Beyond	2859
<i>K. Su, K. Robbins</i>	
Extreme Learning Machine Combining Matrix Factorization For Collaborative Filtering	2867
<i>T. Shang, Q. He, F. Zhuang, Z. Shi</i>	
Cellular Neural Network Based Situational Awareness System For Power Grids	2875
<i>K. Balasubramaniam, G. Venayagamoorthy, N. Watson</i>	
Real-Time Discrete Neural Identifier For A Linear Induction Motor Using A dSPACE DS1104 Board	2883
<i>J. Rios, A. Alanis, J. Rivera, M. Hernandez-Gonzalez</i>	
Dam Seepage Analysis Based On Artificial Neural Networks: The Hysteresis Phenomenon	2889
<i>D. Santillan, J. Fraile-Ardanuy, M. Toledo</i>	

Empirical Modeling Of Vehicle Fuel Economy Based On Historical Data.....	2897
<i>D. Slavin, M. Abou-Nasr, D. Filev, I. Kolmanovsky</i>	
Constructing Mobile-Oriented Catalog In M-Commerce Using LDA-Based Self-Adaptive Genetic Algorithm	2903
<i>H. Hsu, R. Chang, J. Ho</i>	
N2Sky - Neural Networks As Services In The Clouds	2910
<i>E. Schikuta, E. Mann</i>	
Intelligent Determination For Readmission Of Postoperative Patients In Ambulatory Surgery	2918
<i>J. Barros, J. Pena</i>	
A Novel Method For Training And Classification Of Ballistic And Quasi-Ballistic Missiles In Real-Time.....	2926
<i>U. Singh, V. Padmanabhan, A. Agarwal</i>	
Fast Diagnosing Of Pediatric Respiratory Diseases By Using High Speed Neural Networks	2934
<i>H. El-Bakry, M. Hamada</i>	
Detection And Identification Of Seismic P-Waves Using Artificial Neural Networks	2942
<i>K. Kaur, M. Wadhwa, E. Park</i>	
A Two-Step Convolutional Neural Network Approach For Semantic Role Labeling	2948
<i>E. Fonseca, J. Rosa</i>	
Intelligent Speed Profile Prediction On Urban Traffic Networks With Machine Learning.....	2955
<i>J. Park, Y. Murphrey, J. Kristinsson, R. McGee, M. Kuang, T. Phillips</i>	
Multi-Circle Detection For Bladder Cancer Diagnosis Based on Artificial Immune Systems	2962
<i>D. Lu, X. Yu</i>	
Parallel Incremental SVM For Classifying Million Images With Very High-Dimensional Signatures Into Thousand Classes.....	2969
<i>T. Doan, T. Do, F. Poulet</i>	
Real-Time Detection Of Young Spruce Using Color And Texture Features On An Autonomous Forest Machine	2977
<i>H. Hytti, J. Kalmari, A. Visala</i>	
Off-Line Bangla Signature Verification: An Empirical Study.....	2985
<i>S. Pal, A. Alaei, U. Pal, M. Blumenstein</i>	
Nested-Loop Neural Network Vector Control Of Permanent Magnet Synchronous Motors	2992
<i>S. Li, M. Fairbank, X. Fu, D. Wunsch, E. Alonso</i>	
Authenticated Key Exchange Protocol Using Neural Cryptography With Secret Boundaries.....	3000
<i>A. Allam, H. Abbas, M. El-Kharashi</i>	
Protein Secondary Structure Prediction Using A Fully Complex-Valued Relaxation Network	3008
<i>B. Shamima, R. Savitha, S. Suresh, S. Saraswathi</i>	
On Processing Three Dimensional Data By Quaternionic Neural Networks.....	3016
<i>N. Muramoto, T. Isokawa, H. Nishimura, N. Matsui</i>	
Modified Learning For Discrete Multi-Valued Neuron.....	3021
<i>J. Chen, S. Wu, S. Lee</i>	
3D Gesture Recognition With Growing Neural Gas	3027
<i>J. Serra-Perez, J. Garcia-Rodriguez, S. Orts-Escalano, J. Garcia-Chamizo, J. Montoyo-Bojo, A. Angelopoulou, A. Psarrou, M. Mentzeopoulos, A. Lewis</i>	
Variational Bayesian Tracking: Whole Track Convergence For Large-Scale Ecological Video Monitoring.....	3035
<i>J. Christmas, R. Everson, R. Rodriguez-Munoz, T. Tregenza</i>	
A Management Framework For Device-Free Localization	3043
<i>H. Yigitler, O. Kaltiokallio, R. Jantti</i>	
Multi-Valued Neuron With New Learning Schemes	3051
<i>S. Wu, S. Lee</i>	
Neural-PSO Second Order Sliding Mode Controller For Unknown Discrete-Time Nonlinear Systems.....	3058
<i>A. Alanis, N. Arana-Daniel, C. Lopez-Franco</i>	
Backpropagation Learning Method With Interval Type-2 Fuzzy Weights In Neural Networks.....	3064
<i>F. Gaxiola, P. Melin, F. Valdez, O. Castillo</i>	
Adaptive Learning In Motion Analysis With Self-Organising Maps	3070
<i>A. Angelopoulou, J. Garcia-Rodriguez, A. Psarrou, G. Gupta, M. Mentzelopoulos</i>	
Analog System Modeling Based On A Double Modified Complex Valued Neural Network.....	3077
<i>A. Luchetta, S. Manetti, M. Piccirilli</i>	
Recurrent Neural Networks Inspired By Artificial Immune Algorithm For Time Series Prediction	3085
<i>D. Al-Jumeily, A. Hussain, H. Alaskar</i>	
Structural Information Processing In Early Vision Using Hebbian-Based Mean Shift.....	3093
<i>J. Liu, C. Zhang, Y. Jia</i>	

Pose Estimation For Vertebral Mobility Analysis Using Exclusive-ICA Based Boosting (XICABoost)	
Algorithm	3099
<i>C. Huang</i>	
Spiking Neural Networks For Financial Data Prediction	3104
<i>D. Reid, A. Hussain, H. Tawfik</i>	
Diffusion Least-Mean Squares Over Adaptive Networks With Dynamic Topologies	3114
<i>B. Fadlallah, J. Principe</i>	
Adaptive Controller For PMSG Wind Turbine Systems With Back-To-Back PWM Converters	3120
<i>O. Aguilar, R. Tapia, J. Ramirez, A. Valderrabano</i>	
Author Index	