

The 2008 IEEE International Joint Conference on Neural Networks

**Hong Kong, China
1-8 June 2008**

Pages 1-521



IEEE Catalog Number:
ISBN 13:

CFP08IJS-PRT
978-1-4244-1820-6

Table of Contents

Sparse Kernel Density Estimator Using Orthogonal Regression Based on D-Optimality Experimental Design.....	1
<i>S. Chen, X. Hong and C. J. Harris</i>	
Fully Complex-Valued Radial Basis Function Networks for Orthogonal Least Squares Regression	7
<i>S. Chen, X. Hong and C. J. Harris</i>	
Complex-Valued Symmetric Radial Basis Function Classifier for Quadrature Phase Shift Keying Beamforming Systems.....	13
<i>S. Chen, C. J. Harris and L. Hanzo</i>	
A Simplified LVI-Based Primal-Dual Neural Network for Repetitive Motion Planning of PA10 Robot Manipulator Starting from Different Initial States	19
<i>Yunong Zhang, Zhiguo Tan, Zhi Yang, Xuanjiao Lv and Ke Chen</i>	
A Novel Approach for Fault Diagnosis of Steam Turbine Based on Neural Network and Genetic Algorithm	25
<i>Qinglin Guo and Ming Zhang</i>	
Generating Weights and Generating Vectors to Map Complex Functions with Artificial Neural Networks	30
<i>R. Neville and S. Holland</i>	
Applying Knowledge Engineering Methods to Didactic Knowledge First Steps Towards an Ultimate Goal	38
<i>Rainer Knauf, Yoshitaka Sakurai and Setsuo Tsuruta</i>	
Learning of Soccer Player Agents Using a Policy Gradient Method: Coordination Between Kicker and Receiver During Free Kicks.....	46
<i>H. Igarashi, K. Nakamura and S. Ishihara</i>	
Identification of Nonlinear State Space Models Using an MLP Network Trained by the EM Algorithm	53
<i>Ali A. Gorji and Mohammad B. Menhaj</i>	
Selection of Kernel Parameters for KNN	61
<i>Xiao-Yu Qiu, Kai Kang and Hua-Xiang Zhang</i>	
A Comparison of Architectural Varieties in Radial Basis Function Neural Networks	66
<i>Mehmet Onder Efe and Cosku Kasnakoglu</i>	
An Adaptive Text Detection Approach in Images and Video Frames	72
<i>Minhua Li and Chunheng Wang</i>	
Some Discrete Fourier Kind Transforms Based on FLOS.....	78
<i>Yong Bian, Yinqing Zhou and Chunsheng Li</i>	
A One-Layer Recurrent Neural Network for Convex Programming	83
<i>Qingshan Liu and Jun Wang</i>	
Texture Classification of the Ultrasonic Images of Rotator Cuff Diseases Based on Radial Basis Function Network	91
<i>Ming-Huwi Horng</i>	
Modelling the Development of Fluid Dispensing for Electronic Packaging: Hybrid Particle Swarm Optimization Based-Wavelet Neural Network Approach.....	98
<i>S. H. Ling, H. H. C. Iu, F. H. F. Leung and K.Y. Chan</i>	
A Simplified Recurrent Neural Network for Solving Nonlinear Variational Inequalities	104
<i>Long Cheng, Zeng-Guang Hou, Min Tan and Xiuqing Wang</i>	
A Solution of Mixed Integer Linear Programming for Obstacle-Avoided Pursuit Problem	110
<i>Liying Yang, Jianda Han, Chendong Wu and Yiyong Nie</i>	
Design of Dynamic Petri Recurrent-Fuzzy-Neural- Network Scheme for Mobile Robot Tracking Control.....	117
<i>Rong-Jong Wai and Chia-Ming Liu</i>	

Table of Contents

The Development of a Hybrid, Distributed Architecture for Multiagent Systems and its Application in Robot Soccer	125
<i>Cladio J. Biazus and Mauro Roisenberg</i>	
Quaternion Singular Value Decomposition Approach to Color Image De-Noising.....	131
<i>Lei Yin-Jie, Chen Cun-Jian and Lang Fang-Nian</i>	
Unconstrained Transductive Support Vector Machines and Its Application	137
<i>Yingjie Tian, Yunchuan Sun, Chuan-Liang Chen and Zhan Zhang</i>	
Zhang Neural Network without Using Time-Derivative Information for Constant and Time-Varying Matrix Inversion	142
<i>Yunong Zhang, Zenghai Chen, Ke Chen and Binghuang Cai</i>	
Artificial Neural Networks for Stochastic Control of Nonlinear State Space Systems.....	147
<i>Ali A. Gorji and Mohammad B. Menhaj</i>	
Adaptation of Barn Owl Localization System with Spike Timing Dependent Plasticity.....	155
<i>Juan Huo, Alan Murray, Leslie Smith and Zhijun Yang</i>	
Blind Equalization Using ν-Support Vector Regressor for Constant Modulus Signals.....	161
<i>Feng Liu, Hu-cheng An, Jia-ming Li and Lin-dong Ge</i>	
Spam Filtering with Abductive Networks	165
<i>El-Sayed M. El-Alfy and Radwan E. Abdel-Aal</i>	
A Modified Vector Quantization Based Image Compression Technique Using Wavelet Transform	171
<i>Jayanta Kumar Debnath, Newaz Muhammad Syfur Rahim and Wai-keung Fung</i>	
A New Approach for Context-Independent Handwritten Offline Diagram Recognition Using Support Vector Machines	177
<i>Khaled S. Refaat, Wael N. Helmy, AbdelRahman H. Ali, Mohamed S. AbdelGhany and Amir F. Atiya</i>	
Clustering of Cancer Tissues Using Diffusion Maps and Fuzzy ART with Gene Expression Data	183
<i>Rui Xu, Steven Damelin and Donald C. Wunsch</i>	
Single-Class SVM Classifier for Localization of Epileptic Focus on the Basis of EEG	189
<i>B. Swiderski, S. Osowski, A. Cichocki and A. Rysz</i>	
A Random Subspace Method for Co-Training	195
<i>Jiao Wang, Si-wei Luo and Xian-hua Zeng</i>	
Computational Intelligence and Decision Trees for Missing Data Estimation.....	201
<i>George Ssali and Tshilidzi Marwala</i>	
A New Approach to Robust k-Means Clustering Based on Fuzzy Principal Component Analysis.....	208
<i>Katsuhiro Honda, Hiromichi Araki, Tomohiro Matsui and Hidetomo Ichihashi</i>	
A Local Latent Semantic Analysis-Based Kernel for Document Similarities.....	214
<i>Sujeewan Aseervatham</i>	
Construction of Interpretable Radial Basis Function Classifiers Based on the Random Forest Kernel	220
<i>Michael Botsch and Josef A. Nossek</i>	
Combination Approach of SMOTE and Biased-SVM for Imbalanced Datasets.....	228
<i>Wang He-Yong</i>	
Statistical Process Monitoring Using Independent Component Analysis Based Disturbance Separation Scheme	232
<i>Chi-Jie Lu, Tian-Shyug Lee and Chih-Chou Chiu</i>	
Derive Local Invariance Transformations from SVM	238
<i>Ling Ping, Wang Zhe, Wang Xi and Zhou Chun-guang</i>	

Table of Contents

Learning Encoding and Decoding Filters for Data Representation with a Spiking Neuron	243
<i>Michael Gutmann, Aapo Hyvarinen and Kazuyuki Aihara</i>	
Predictive Unsupervised Organisation in Marine Engine Fault Detection.....	249
<i>Ian Morgan, Honghai Liu, George Turnbull and David Brown</i>	
Tree Parity Machine-Based One-Time Password Authentication Schemes	257
<i>Tieming Chen and Samuel H. Huang</i>	
Fault Diagnosis of FOG SINS Based on Neural Network	262
<i>Wu Lei, Sun Feng and Cheng Jianhua</i>	
Improving the Robustness of ISOMAP by De-Noising	266
<i>Bo Li, De-Shuang Huang and Chao Wang</i>	
Intelligent Fuzzy Wavelet System for Electronic Parts Appearance Quality Prediction	271
<i>Huang Zhihui, Kan ShuLin, Yuan Jing, Ren Yizhou, Wei Yufeng and Dong Qiaoying</i>	
Asymptotic Behavior of Stochastic Cohen-Grossberg Neural Networks with Variable Delays	279
<i>Minghui Jiang, Li Wang and Yi Shen</i>	
MATLAB Simulink Modeling and Simulation of Zhang Neural Networks for Online Time-Varying Sylvester Equation Solving	285
<i>Weimu Ma, Yunong Zhang and Jiahai Wang</i>	
Emitter Number Estimation from Pulse Envelope Using Information Theoretic Criterion.....	290
<i>Tao-wei Chen and Wei-dong Jin</i>	
Feature Extraction Using Surrounding-Line Integral Bispectrum for Radar Emitter signal.....	294
<i>Tao-wei Chen, Wei-dong Jin and Jie Li</i>	
Ensemble Classification Based on Correlation Analysis for Face Recognition	299
<i>Yang Liu, Yanwei Zheng and Yuehui Chen</i>	
Analysis of a Plurality Voting-Based Combination of Classifiers	304
<i>Xiaoyan Mu, Paul Watta and Mohamad H. Hassoun</i>	
Robotic Position/Orientation Control Using Neural Networks	310
<i>Khalid Youssef and Peng-Yung Woo</i>	
A Novel Support Vector Machine with Its Features Weighted by Mutual Information	315
<i>Hong-Jie Xing, Ming-Hu Ha, Da-Zeng Tian and Bao-Gang Hu</i>	
Salient Objects Detection in Time Sequenced Images.....	321
<i>Minghui Tian, Shouhong Wan, Yan Ji and Lihua Yue</i>	
A P-SVM and Chaos Based Model for High-Technology Manufacturing Labor Productivity	327
<i>Huifang Zhao, Sheng Xu and Changhui Yang</i>	
Design and Simulation of Adaptive Wavelet Neuro Control with UUB Stability	332
<i>Chun-Fei Hsu, Tsu-Tian Lee and Chih-Min Lin</i>	
HieNet Architecture Using the K-Iterations Fast Learning Artificial Neural Networks	338
<i>L. P. Tay, J. M. Zurada and L. P. Wong</i>	
Active Meta-Learning with Uncertainty Sampling and Outlier Detection.....	346
<i>Ricardo B. C. Prudencio and Teresa B. Ludermir</i>	
Vehicle License Plate Location Based on Harris Corner Detection	352
<i>Haibin Huang, Guangfu Ma and Yufei Zhuang</i>	
Unsupervised Learning of Dependencies Between Local Luminance and Contrast in Natural Images.....	356
<i>Jussi T. Lindgren, Jarmo Hurri and Aapo Hyvarinen</i>	
Bots Trained to Play Like a Human are More Fun	363
<i>Bhuman Soni and Philip Hingston</i>	

Table of Contents

Position Control of a Mobile Inverted Pendulum System Using Radial Basis Function Network	370
<i>Jin Seok Noh, Geun Hyeong Lee and Seul Jung</i>	
Implementation of the RBF Neural Chip with the On-Line Learning Back-Propagation Algorithm	377
<i>Jeong-seob Kim and Seul Jung</i>	
Modeling Transcription Termination of Selected Gene Groups Using Support Vector Machine	384
<i>J.-X. Xu, B. Ashok, S. K. Panda and V. Bajic</i>	
Graphical Symbol Recognition in Architectural Plans with an Improved Ant-Tree Based Clustering Algorithm	390
<i>Xiaochun Yang, Weidong Zhao and Li Pan</i>	
TNFIS: Tree-Based Neural Fuzzy Inference System.....	398
<i>Eng-Yeow Cheu, Hiok-Chai Quek and See-Kiong Ng</i>	
Designing Automatic Train Regulation for MRT System by Adaptive Critic Method	406
<i>Jih-Wen Sheu and Wei-Song Lin</i>	
Analysis of Nonseparable Property of Multi-Valued Multi-Threshold Neuron.....	413
<i>Nan Jiang, Zhaozhi Zhang, Xiaomin Ma, Jian Wang and Yixian Yang</i>	
A New Support Vector Classification Algorithm with Parametric-Margin Model	420
<i>Pei-Yi Hao, Lung-Biao Tsai and Min-Shiu Lin</i>	
Automatic Target Recognition of Aircrafts Using Neural Networks	426
<i>Zunhua Guo, Weixin Xie and Jingxiong Huang</i>	
Wafer-Scale Integration of Analog Neural Networks.....	431
<i>Johannes Schemmel, Johannes Fieres and Karlheinz Meier</i>	
Immunity-Based Intrusion Detection for Wireless Sensor Networks	439
<i>Yang Liu and Fengqi Yu</i>	
Sub-Domain Intelligent Modeling Based on Neural Networks.....	445
<i>Xin-Jiang Lu and Han-Xiong Li</i>	
Dataset Complexity Can Help to Generate Accurate Ensembles of K-Nearest Neighbors	450
<i>Oleg Okun and Giorgio Valentini</i>	
Statistically Non-Sparse Decomposition of Two Underdetermined Audio Mixtures.....	458
<i>Ming Xiao, Shengli Xie and Yuli Fu</i>	
A Soft Image Edge Detection Approach Based on the Time Matrix of a PCNN.....	463
<i>Mario I. Chacon M., R. Claudia Prieto, R. R. Sandoval, and R. Alejandro Rodriguez</i>	
Characterization of Climatic Variations in Spain at the Regional Scale: A Computational Intelligence Approach	470
<i>Julio J. Valdes, Antonio Pou and Robert Orchard</i>	
A Three Dimensional Localization Algorithm Using a Mobile Anchor Node Under Wireless Channel.....	477
<i>Ganggang Yu, Fengqi Yu and Lei Feng</i>	
On Asymptotic Behavior of State Trajectories of Piecewise-Linear Recurrent Neural Networks Generating Periodic Sequence of Binary Vectors.....	484
<i>Norikazu Takahashi and Yasuhiro Minetoma</i>	
A Contention-Based MAC for Wireless Sensor Networks Including a Mobile Node.....	490
<i>Lei Feng and Fengqi Yu</i>	
Incremental Learning for Feature Extraction Filter Mask Used in Similar Pattern Classification.....	497
<i>Yoshiaki Kurosawa</i>	
Ensemble Based 3D Human Motion Classification.....	505
<i>Zhiwen Yu, Xing Wang and Hau-San Wong</i>	

Table of Contents

Incorporating Fuzzy Prior Knowledge into Relevance Vector Machine Regression.....	510
<i>Jin Yuan, Kesheng Wang, Tao Yu and Xuemei Liu</i>	
A Variational Formulation for GTM Through Time	516
<i>Ivan Olier and Alfredo Vellido</i>	
The Effect of Noise and Sample Size on an Unsupervised Feature Selection Method for Manifold Learning.....	522
<i>Alfredo Vellido and Jorge Velazco</i>	
Prediction of Convergence Dynamics of Design Performance Using Differential Recurrent Neural Networks.....	528
<i>Yi Cao, Yaochu Jin, Michal Kowalczykiewicz and Bernhard Sendhoff</i>	
Constrained Maximum Variance Mapping.....	534
<i>Bo Li, De-Shuang Huang and Kun-Hong Liu</i>	
A New Method of Weak Signal Detection Based on Improved Matching Pursuit Algorithm	538
<i>Gang Xu and Jie Gao</i>	
Detection and Recognition on Parameters of Object's Internal Structure	543
<i>Gang Xu and Xu Meng</i>	
Development of a Memetic Algorithm for Dynamic Multi-Objective Optimization and Its Applications for Online Neural Network Modeling of UAVs.....	548
<i>Amitay Isaacs, Vishwas Puttige, Tapabrata Ray, Warren Smith and Sreenatha Anavatti</i>	
A Hybrid Supervised ANN for Classification and Data Visualization.....	555
<i>Chee Siong Teh and Md. Sarwar ZahanTapan</i>	
SVR-Based Approach to Improve Active Sonar Detection in Reverberation	563
<i>Ketong Wu, Fan Cen and Huizhi Cai</i>	
Fuzzy Cluster Ensemble and its Application on 3D Head Model Classification	569
<i>Zhiwen Yu, Zhongkai Deng, Hau-San Wong and Xing Wang</i>	
Short-Term Traffic Flow Forecasting Based on Clustering and Feature Selection.....	577
<i>Zhanquan Sun, Yinglong Wang and Jingshan Pan</i>	
Pattern Mining Based on Local Distribution	584
<i>Zhiwen Yu, Xing Wang, Hau-San Wong and Zhongkai Deng</i>	
Knowledge Based Cluster Ensemble.....	589
<i>Zhiwen Yu, Zhongkai Deng, Hau-San Wong, and Xing Wang</i>	
Parallel Multidimensional Step Search Algorithm for Epsilon-Insensitive Support Vector Regression in Time Series Prediction.....	595
<i>Xi-Long Che and Liang Hu</i>	
An Integration Method of Multi-Modal Biometrics Using Supervised Pareto Learning Self Organizing Maps.....	602
<i>Hiroshi Dozono and Masanori Nakakuni</i>	
Fault Diagnosis of Time-Frequency Images Based on Non-Negative Factorization and Neural Network Ensemble.....	607
<i>Wang Qinghua, Zhang Youyun, Zhu Yongshen and Yang Junyan</i>	
Gene Ontology Term Prediction Based Upon Acid Occurence	615
<i>Y-h. Taguchi and M. Michael Gromiha</i>	
Financial Time Series Prediction Using a Support Vector Regression Network	621
<i>Boyang Li, Jinglu Hu and Kotaro Hirasawa</i>	
Graph Theoretic Based Algorithm for Mining Frequent Patterns	628
<i>R. S. Thakur, R. C. Jain and K. R. Pardasani</i>	

Table of Contents

Radar Emitter Signal Recognition Based on Atomic Decomposition	633
<i>Ming Zhu, Weidong Jin and Laizhao Hu</i>	
Calibration of Traffic Dynamics Models with Data Mining	637
<i>Zhu Jiang, Yan Zhang, Yong-xuan Huang and Ji-sheng Li</i>	
Ensemble of Neural Predictors for Forecasting the Atmospheric Pollution.....	643
<i>K. Siwek, S. Osowski, K. Garanty and M. Sowinski</i>	
Contact Personalization Using a Score Understanding Method.....	649
<i>Vincent Lemaire, Raphael Feraud and Nicolas Voisine</i>	
Ensemble Learning with Generalization Performance Measurement and Negative Correlation	655
<i>Yaohua Tang, Jinghuai Gao and Guangzhao Cui</i>	
Investigating the Influence of Feature Correlations on Automatic Relevance Determination	661
<i>Yu Fu and Antony Browne</i>	
Learning to Select Relevant Perspective in a Dynamic Environment.....	666
<i>Zhihui Luo, David Bell, Barry McCollum and Qingxiang Wu</i>	
Adaptive Curiosity for Emotions Detection in Speech	674
<i>Alexis Bondu and Vincent Lemaire</i>	
Image Clustering with Spiking Neuron Network.....	681
<i>B. Meftah, A. Benyettou, O.Lezoray and W. QingXiang</i>	
Computational Intelligence Meets the Netflix Prize	686
<i>Ryan J. Meuth, Paul Robinette and Donald C. Wunsch II</i>	
Kernel Methods for fMRI Pattern Prediction.....	692
<i>Yizhao Ni, Carlton Chu, Craig J Saunders and John Ashburner</i>	
Modeling Performance Enhancement with Constrained Linear Filters.....	698
<i>Dianhui Wang</i>	
A Biologically Inspired Visual Pedestrian Detection System	703
<i>Fok Hing Chi Tivive and Abdesselam Bouzerdoun</i>	
Backpropagation with Two-Phase Magnified Gradient Function.....	710
<i>Chi-Chung Cheung and Sin-Chun Ng</i>	
Tracking a Moving Object with Mobile Robot Based on Vision	716
<i>Lin Rui, Du Zhijiang, He Fujun, Kong Minxiu and Sun Lining</i>	
Bio-Inspired Stochastic Chance-Constrained Multi-Robot Task Allocation Using WSN.....	721
<i>Xue Han and Ma Hong-xu</i>	
LATTICESVM— A New Method for Multi-class Support Vector Machines	727
<i>Liu Zhibin and Jin Lianwen</i>	
Input-Output Model of Time Series Based on ESN.....	734
<i>Kui Xiang, Xixiu Wu, Jian Fu and Jing Chen</i>	
Optimization with Genetic Algorithms of Modular Neural Networks Using Interval Type-2 Fuzzy Logic for Response Integration: The Case of Multimodal Biometry.....	738
<i>Denisse Hidalgo, Oscar Castillo and Patricia Melin</i>	
Gender Classification of Human Faces Using Inference Through Contradictions.....	746
<i>Xue Bai and Vladimir Cherkassky</i>	
Recurrent Neural Network Optimization for Model Predictive Control.....	751
<i>Liyan Zhang, Shuhai Quan and Kui Xiang</i>	

Table of Contents

Multivariate Chaotic Time Series Analysis and Prediction Using Improved Nonlinear Canonical Correlation Analysis	758
<i>Min Han, Ru Wei and Decai Li</i>	
Use of Self-Organizing Maps for Texture Feature Selection in Content-Based Image Retrieval.....	765
<i>Chen Guo and Campbell Wilson</i>	
Applying ICA on Neural Network to Simplify BOF Endpoint Predicting Model	771
<i>Min Han, Xinzhe Wang and Yijie Wang</i>	
A New Image Recognition Algorithm Based on Skeleton	777
<i>Gang Xu and Yuqing Lei</i>	
The Learning Algorithm Based on Multiresolution Analysis for Neural Networks	783
<i>Min Han, Jia Yin and Yang Li</i>	
Particle Swarm Optimization of Feedforward Neural Networks for the Detection of Drowsy Driving	788
<i>David Sandberg and Mattias Wahde</i>	
Two-Tier Self-Organizing Visual Model for Road Sign Recognition.....	794
<i>Yok-Yen Nguwi and Siu-Yeung Cho</i>	
A Memory-Based Reinforcement Learning Algorithm for Partially Observable Markovian Decision Processes	800
<i>Lei Zheng, Siu-Yeung Cho and Chai Quek</i>	
Knowledge Processing System Using Kohonen Feature Map Associative Memory with Refractoriness Based on Area Representation.....	806
<i>Yoichi Uda and Yuko Osana</i>	
Similarity-Based Image Retrieval from Plural Key Images by Self-Organizing Map with Refractoriness	812
<i>Hiroyuki Tanimizu and Yuko Osana</i>	
Kohonen Feature Map Associative Memory with Area Representation for Sequential Analog Patterns.....	818
<i>Tomonori Shiratori and Yuko Osana</i>	
Melody Retrieval by Self-Organizing Map with Refractoriness	824
<i>Takanori Hirata, Takuya Tokuda and Yuko Osana</i>	
Investigation of Diabetic Microvascular Complications Using Data Mining Techniques.....	830
<i>Chien-Lung Chan, Yu-Chen Liu and Shih-Hui Luo</i>	
A Novel Chaotic Stream DS-UWB System	835
<i>Jian Lao, Quansheng Ren and Jianye Zhao</i>	
Shape of Error Surfaces in SpikeProp.....	840
<i>Fujita Masaru, Takase Haruhiko, Kita Hidehiko and Hayashi Terumine</i>	
Visual Feature Extraction Using Variable Map-Dimension Hypercolumn Model	845
<i>Saleh Aly, Naoyuki Tsuruta, Rin-Ichiro Taniguchi and Atsushi Shimada</i>	
Image Quality Assessment Using Edge and Contrast Similarity.....	852
<i>Wei Fu, Xiaodong Gu and Yuanyuan Wang</i>	
Discovery of Association Rules in Metabolic Syndrome Related Diseases	856
<i>Chien-Lung Chan, Chien-Wei Chen and Baw-Jhiune Liu</i>	
A No Reference Image Quality Assessment Method for JPEG2000	863
<i>Jingchao Zhou, Baihua Xiao and Qiudan Li</i>	
Exponential Stability of Periodic Solution of Impulsive Fuzzy BAM Neural Networks with Time-Varying Delays.....	869
<i>Tingwen Huang and Hui Huang</i>	

Table of Contents

Entropy Partition Method and Its Application for Discrete Variables and Continuous Variables	874
<i>Jing Chen and Guangcheng Xi</i>	
Characterizing Prior Knowledge-Attention Relationship by a Computational Model of Cognitive Reading.....	881
<i>J. Ignacio Serrano, M. Dolores del Castillo, Angel Iglesias and Jesus Oliva</i>	
Global Exponential Stability of Recurrent Neural Networks with Pure Time-Varying Delays	887
<i>Zhigang Zeng, Huangqiong Chen and Shiping Wen</i>	
Neural Classification of Objects Based on Gabor Signature	893
<i>Xuejie Zhang, Alex Leng Phuan Tay and, Alexander Stanza Tan</i>	
A New Adaptive Maneuvering Target Tracking Algorithm Using Artificial Neural Networks.....	901
<i>Zhijun Yu, Jianming Wei and Haitao Liu</i>	
Intelligent Algorithm for Forecasting of Optimum Neurons Quantity in Perceptron with One Hidden Layer	906
<i>A. V. Kretinin, Yu. A. Bulygin and S. G. Valyuhov</i>	
A New Accurate Approximation for the Gaussian Process Classification Problem	912
<i>Ahmed H. Abdel-Gawad and Amir F. Atiya</i>	
3D Human Face Reconstruction with Three Images Based on Constrained ICA	917
<i>Wen-Chang Cheng</i>	
Inverse System Identification of Nonlinear Systems Using Least Square Support Vector Machine Based on FCM Clustering	921
<i>Chaoxu Mu, Hua Liang and Changyin Sun</i>	
Spatiotemporal Feature Extraction Based on Invariance Representation	927
<i>Wenlu Yang and Liqing Zhang</i>	
A New Multidimensional Penalized Likelihood Regression Method	933
<i>Mostafa M. Hassan and Amir F. Atiya and Raafat El-Fouly</i>	
Robust Estimation of Human Posture Using Incremental Learnable Self-Organizing Map.....	939
<i>Atsushi Shimada, Madoka Kanouchi, Daisaku Arita and Rin-ichiro Taniguchi</i>	
Feature Selection Based on Kernel Pattern Similarity	947
<i>Yaohua Tang, Jinghuai Gao and Guangzhao Cui</i>	
Mutual Information for Measuring Independence of STLmax Time Series in the Epileptic Brain	955
<i>Nadia Mammone, Fabio La Foresta, Francesco C. Morabito, Mario Versaci and Umberto Aguglia</i>	
A Neural Architecture for Grounded Cognition: Representation, Structure, Dynamics and Learning.....	961
<i>Frank van der Velde and Marc de Kamps</i>	
Realizing Biological Spiking Network Models in a Configurable Wafer-Scale Hardware System	969
<i>Johannes Fieres, Johannes Schemmel and Karlheinz Meier</i>	
FIR-Based Classifiers for Animal Behavior Classification	977
<i>Majid M. Beigi and Andreas Zell</i>	
Using Variable Neighborhood Search to Improve the Support Vector Machine Performance in Embedded Automotive Applications.....	984
<i>Enrique Alba, Davide Anguita, Alessandro Ghio and Sandro Ridella</i>	
Product Design Model for Impact Toughness Estimation in Steel Plate Manufacturing.....	989
<i>Satu Tamminen, Ilmari Juutilainen and Juha Rönig</i>	
On the Sample Mean of Graphs	993
<i>Brijnesh Jain and Klaus Obermayer</i>	
Discrete-Time Recurrent High Order Neural Observer for Activated Sludge Wastewater Treatment	1001
<i>E. N. Sanchez, E. A. Hernandez, C. Cadet and J. F. Beteau</i>	

Table of Contents

Stable Reciprocal Image Associations in Cognitive Systems	1006
<i>Douglas S. Greer</i>	
Real-Time Discrete Recurrent High Order Neural Observer for Induction Motors.....	1012
<i>Alma Y. Alanis, Edgar N. Sanchez and Alexander G. Loukianov</i>	
Evolving a Neural Network Using Dyadic Connections	1019
<i>Andreas Huemer, Mario Gongora and David Elizondo</i>	
On the Learning of Nonlinear Visual Features from Natural Images by Optimizing Response Energies	1026
<i>Jussi T. Lindgren and Aapo Hyvarinen</i>	
Semantic Representation in Text Classification Using Topic Signature Mapping	1034
<i>Palakorn Achananuparp, Xiaohua Zhou, Xiaohua Hu and Xiaodan Zhang</i>	
Single-Trial Bistable Perception Classification Based on Sparse Nonnegative Tensor Decomposition	1041
<i>Zhisong Wang, Alexander Maier, Nikos K. Logothetis and Hualou Liang</i>	
A Biologically-Inspired Computational Model for Transformation Invariant Target Recognition	1049
<i>Khan M. Iftekhharuddin and Yaqin Li</i>	
Using Stochastic Logic for Efficient Pattern Recognition Analysis.....	1057
<i>Jose L. Rossello, Vincent Canals, Ivan de Paul and Jaume Segura"</i>	
The Wellposedness Analysis of the Kernel Adaline.....	1062
<i>Weifeng Liu and Jose C. Principe</i>	
Signature Based Intrusion Detection Using Latent Semantic Analysis.....	1068
<i>Jean-Louis Lassez, Ryan Rossi, Stephen Sheel and Srinivas Mukkamala</i>	
Classified Image Interpolation Using Neural Networks.....	1075
<i>Fengmei Liang and Keming Xie</i>	
Neighbor Annealing for Neural Network Training	1080
<i>V. Scott Gordon</i>	
Self-Splitting Modular Neural Network-Domain Partitioning at Boundaries of Trained Regions	1085
<i>V. Scott Gordon and Jeb Crouson</i>	
Event-Related Optimization for a Class of Resource Location with Admission Control.....	1092
<i>Chenfeng Xu, Jian Yang, Hongsheng Xi, Qi Jiang and Baoqun Yin</i>	
Semi-Supervised Kernel-Based Fuzzy C-Means with Pairwise Constraints.....	1098
<i>Na Wang, Xia Li and Xuehui Luo</i>	
Develop a Novel Technique for a Virtual Reality Environment.....	1103
<i>Koun-Tem Sun, Chun-Huang Wang, Yi-Chun Lin and Yueh-Min Huang</i>	
Linear Block Code Decoder Using Neural Network.....	1111
<i>Ahmed S. Hadi</i>	
Synchronization-Based Data Gathering Scheme Using Chaotic Pulse-Coupled Neural Networks in Wireless Sensor Networks.....	1115
<i>Hidehiro Nakano, Akihide Utani, Arata Miyauchi and Hisao Yamamoto</i>	
Automatic Factorization of Biological Signals by Using Boltzmann Non-Negative Matrix Factorization	1122
<i>Kenji Watanabe, Akinori Hidaka and Takio Kurita</i>	
Bootstrap Gaussian Process Classifiers for Rotating Machinery Anomaly Detection	1129
<i>Xue Wang, Daowei Bi, Liang Ding and Sheng Wang</i>	
A Novel Heuristic Q-Learning Algorithm for Solving Stochastic Games.....	1135
<i>Jianwei Li and Weiyi Liu</i>	
An Integrated Approach to Segment Mobile Commerce Market on the Train	1145
<i>Chi-Chung Tao</i>	

Table of Contents

Collaborative Statistical Learning with Rough Feature Reduction for Visual Target Classification	1151
<i>Sheng Wang, Xue Wang, Daowei Bi, Liang Ding and Zheng You</i>	
Missing Nominal Data Imputation Using Association Rule Based on Weighted Voting Method.....	1157
<i>Jianhua Wu, Qinbao Song and Junyi Shen</i>	
Fast Training Algorithm by Particle Swarm Optimization and Random Candidate Selection for Rectangular Feature Based Boosted Detector.....	1163
<i>Akinori Hidaka and Takio Kurita</i>	
Using Multi-Layer Perceptrons to Predict the Presence of Jellyfish of the Genus Physalia at New Zealand Beaches	1170
<i>David R. Pontin, Michael J. Watts and S. P. Worner</i>	
A Local Density-Based Simultaneous Two-Level Algorithm for Topographic Clustering	1176
<i>Guenael Cabanes and Younes Bennani</i>	
Semi-supervised Nearest Neighbor Editing.....	1183
<i>Donghai Guan, Weiwei Yuan, Young-Koo Lee and Sungyoung Lee</i>	
Research on A Novel One-Way Trap-Door Map Based on Improved Hyperbolic Function.....	1188
<i>Wang Dahu, Yang Haizhu, Yu Fashan and Wang Xudong</i>	
Enhanced Extreme Learning Machine with Stacked Generalization	1191
<i>Guopeng Zhao, Zhiqi Shen, Chunyan Miao and Robert Gay</i>	
A Novel Strategy for the Structure-Based Drug Design of Heat Shock Protein 90 Inhibitors.....	1199
<i>Omix Yu-Chian Chen, Guan-Wen Chen and WinstonYu-Chen Chen</i>	
Rule Induction Based on an Incremental Rough Set.....	1207
<i>Yu-Neng Fan, Chun-Che Huang and Ching-Chin Chern</i>	
Adaptive Filtering for Desired Error Distribution Under Minimum Information Divergence Criterion	1215
<i>Jinchun Hu, Badong Chen, Fuchun Sun and Zengqi Sun</i>	
An Analysis of Data Distribution Methods in Classifier Combination Systems	1220
<i>Laura E A Santana, Alberto Signoretti and Anne M P Canuto</i>	
Real-Time Remote Manipulation and Monitoring Architecture of an Industry Robot	1228
<i>Hong Li Yin, Yong Ming Wang, Nan Feng Xiao and Yan Rong Jiang</i>	
Neural Networks for Cognitive Sensor Networks.....	1235
<i>Leon Reznik and Gregory Von Pless</i>	
Pharmacoinformatics Approach to the Discovery of Novel Selective COX-2 Inhibitors by in silico Virtual Screening	1242
<i>Omix Yu-Chian Chen</i>	
Boosting with Cross-Validation Based Feature Selection for Pedestrian Detection	1250
<i>Kenji Nishida and Takio Kurita</i>	
Simulated Annealing for Hierarchical Pattern Detection and Seismic Applications.....	1257
<i>Kou-Yuan Huang and Ying-Liang Chou</i>	
A New Contextual Based Feature Selection	1265
<i>H. Senoussi and Chebel-Morello</i>	
A Decision Boundary Hyperplane for the Vector Space of Conics Using a Polinomial Kernel in m-Euclidean Space	1273
<i>Isidro B. Nieto and Jose Refugio Vallejo</i>	
A Neural Network Approach to Ordinal Regression.....	1279
<i>Jianlin Cheng, Zheng Wang and Gianluca Pollastri</i>	

Table of Contents

The Meaningful Fractal Fuzzy Dimension Applied to the Design of Self Organizing Maps.....	1285
<i>Sarajane M. Peres and Marcio L. de A. Netto</i>	
Accelerating Cogent Confabulation: An Exploration in the Architecture Design Space.....	1292
<i>Qinru Qiu, Daniel Burns, Michael Moore, Richard Linderman, Thomas Renz and Qing Wu</i>	
Multi-Label Imbalanced Data Enrichment Process in Neural Net Classifier Training	1301
<i>Gorn Tepvorachai and Chris Papachristou</i>	
Fusion of Biometric Systems Using One-Class Classification.....	1308
<i>Cheila Bergamini, Luiz S. Oliveira, Alessandro L. Koerich and Robert Sabourin</i>	
Blind Source Separation and Bearing Estimation Using Fourier- and Wavelet-Based Spectrally Condensed Data and Artificial Neural Networks for Indoor Environments.....	1314
<i>Ebrahim A. Gharavol, Ooi Ban Leong and Koenraad Mouthaan</i>	
ADASYN: Adaptive Synthetic Sampling Approach for Imbalanced Learning	1322
<i>Haibo He, Yang Bai, Eduardo A. Garcia and Shutao Li</i>	
Estimating Module Relevance with Sugeno Integration of Modular Neural Networks Using Interval Type- 2 Fuzzy Logic	1329
<i>Olivia Mendoza, Patricia Mel&iacute; and Guillermo Licea</i>	
Nonlinear Hebbian Learning for Noise-Independent Vehicle Sound Recognition	1336
<i>Bing Lu, Alireza Dibazar and Theodore W. Berger</i>	
Implementation of a Neural Network Based Visual Motor Control Algorithm for a 7 DOF Redundant Manipulator	1344
<i>Swagat Kumar and Laxmidhar Behera</i>	
System Identification Using the Neural-Extended Kalman Filter for State-Estimation and Controller Modification	1352
<i>Stephen C. Stubberud and Kathleen A. Kramer</i>	
Community Analysis of Influential Nodes for Information Diffusion on a Social Network.....	1358
<i>Masahiro Kimura, Kazumasa Yamakawa, Kazumi Saito and Hiroshi Motoda</i>	
On-Line Off-Line Ranking Support Vector Machine and Analysis.....	1364
<i>Bin Gu, Jiandong Wang and Haiyan Chen</i>	
Unsupervised Extraction of Meaningful Nonlinear Principal Components Applied for Voice Conversion.....	1370
<i>B. Makki, M. Noori Hosseini and S. A. Seyyedsalehi</i>	
On-line Bagging Negative Correlation Learning	1374
<i>Fernanda L. Minku and Xin Yao</i>	
Pseudometrics for Time Series Classification by Nearest Neighbor	1382
<i>Teesid Korsrilabutr and Boonserm Kijsirikul</i>	
Multi-class AUC metrics and weighted alternatives.....	1390
<i>Ben Van Calster, Vanya Van Belle, George Condous, Tom Bourne, Dirk Timmerman and Sabine Van Huffel</i>	
Air Robot Path Planning Based on Intelligent Water Drops Optimization.....	1397
<i>Haibin Duan, Senqi Liu and Xiujuan Lei</i>	
Bayesian Tensor Analysis.....	1402
<i>Dacheng Tao, Jimeng Sun, Jialie Shen, Xindong Wu, Xuelong Li, Stephen J. Maybank and Christos Faloutsos</i>	
Comparing Machine Learning Methods in Estimation of Model Uncertainty	1410
<i>Durga Lal Shrestha and Dimitri P. Solomatine</i>	
e-Adaptive Dynamic Programming for Discrete-Time Systems.....	1417
<i>Derong Liu and Ning Jin</i>	

Table of Contents

A New Line Symmetry Distance Based Pattern Classifier	1425
<i>Sriparna Saha, Sanghamitra Bandyopadhyay and Chingtham Tejbanta Singh</i>	
An Opinion Search System for Consumer Products	1433
<i>Qingliang Miao and Qiudan Li</i>	
The Detection of Multiple Moving Objects Using Fast Level Set Method.....	1440
<i>Jun Zhang, Ning Li and Y. F. Li</i>	
Fast and Robust Stochastic Segment Model for Mandarin Digital String Recognition	1445
<i>Wenju Liu, Yun Tang and Shouye Peng</i>	
Calibrated Rank-SVM for Multi-Label Image Categorization	1450
<i>Aiwen Jiang, Chunheng Wang and Yuanping Zhu</i>	
Autonomous Novelty Detection and Object Tracking in Video Streams Using Evolving Clustering and Takagi-Sugeno Type Neuro-Fuzzy System.....	1456
<i>Plamen Angelov, Ramin Ramezani and Xiaowei Zhou</i>	
Large Developing Axonal Arbors Using a Distributed and Locally-Reprogrammable Address-Event Receiver	1464
<i>Simeon A. Bamford, Alan F. Murray and David J. Willshaw</i>	
Dialog Act Classification Using Acoustic and Discourse Information of MapTask Data.....	1472
<i>Fatema N. Julia and Khan M. Iftekharruddin</i>	
Empirical Comparison of Dynamic Classifier Selection Methods Based on Diversity and Accuracy for Building Ensembles	1480
<i>Marcilio C. P. de Souto, Rodrigo G. F. Soares, Alixandre Santana and Anne M. P. Canuto</i>	
The Rule-Extraction Through the Preimage Analysis	1488
<i>Rua-Huan Tsaih, Yat-wah Wan and Shin-Ying Huang</i>	
Modeling Network Attacks for Scenario Construction	1495
<i>Safaa O. Al-Mamory, Zhang Hongli and Ayad R. Abbas</i>	
Response Integration in Ensemble Neural Networks Using Interval Type-2 Fuzzy Logic	1503
<i>Miguel Lopez and Patricia Melin</i>	
Prediction of Urban Passenger Transport Based-On Wavelet SVM with Quantum-Inspired Evolutionary Algorithm	1509
<i>Wenfeng Zhang, Zhongke Shi and Zhiyong Luo</i>	
Learning Associations of Conjoined Fuzzy Sets for Data Prediction.....	1515
<i>Hanlin Goh, Joo-Hwee Lim and Chai Quek</i>	
Using Neural Network Emulations of Model Physics in Numerical Model Ensembles.....	1523
<i>Vladimir Krasnopolsky, Michael S. Fox-Rabinovitz and Alexei Belochitski</i>	
A Comparison of Genetic and Particle Swarm Optimization for Contact Formation in High-Performance Silicon Solar Cells	1531
<i>Hyun-Soo Kim, Bryan G. Morris, Seung-Soo Han and Gary S. May</i>	
A New Evolutionary Method with Fuzzy Logic for Combining Particle Swarm Optimization and Genetic Algorithms: The Case of Neural Networks Optimization	1536
<i>Fevrier Valdez, Patricia Melin and Olivia Mendoza</i>	
Robust Experimental Design and Feature Selection in Signal Transduction Pathway Modeling.....	1544
<i>Fei He, Martin Brown, Hong Yue and Lam Fat Yeung</i>	
An Estimate of Impulse Bounds in Delayed BAM Neural Networks	1552
<i>Hui Wang, Chuandong Li and Yongguang Yu</i>	
Nonparametric Approach for Estimating Dynamics of Stock Index	1556
<i>Baosheng Guo and Ruoen Ren</i>	

Table of Contents

Building Resilient Classifiers for LSB Matching Steganography.....	1562
<i>Rita Ferreira, Bernardete Ribeiro, Catarina Silva, Qingzhong Liu and Andrew H Sung</i>	
On the Benefits for Model Regularization of a Variational Formulation of GTM.....	1568
<i>Ivan Olier and Alfredo Vellido</i>	
An Improved PCA Algorithm Based on WIF	1576
<i>Fengxiang Jin and Shifei Ding</i>	
Hybrid Knowledge Representation Applied to the Learning of the Shared Attention.....	1579
<i>Claudio A. Policastro, Giovana Zuliani, Renato R. da Silva, Vitor R. Munhoz and Roseli A. F. Romero</i>	
Jet Engine Gas Path Fault Diagnosis Using Dynamic Fusion of Multiple Classifiers	1585
<i>Weizhong Yan and Feng Xue</i>	
CUR + NMF for Learning Spectral Features from Large Data Matrix	1592
<i>Hyekyoung Lee and Seungjin Choi</i>	
Classification Through Hierarchical Clustering and Dimensionality Reduction.....	1598
<i>Vassilis Syrris and Vassilios Petridis</i>	
A Human Face Recognition Approach Based on Spatially Weighted Pseudo-Zernike Moments.....	1604
<i>Rongbing Huang, Minghui Du and Dexin Xie</i>	
An Adaptive Ground Penetrating Radar Imaging System Based on Complex-Valued Self-Organizing Map - Recent Progress and Experiments in Cambodia-.....	1609
<i>Akira Hirose</i>	
A Programmable Facilitating Synapse Device	1615
<i>Yajie Chen, Liam McDaid, Steve Hall and Peter Kelly</i>	
A Perceptual Interface for Vision Substitution in a Color Matching Experiment.....	1621
<i>G. Bologna, B. Deville, M. Vinckenbosch and T. Pun</i>	
Properties of an Invariant Set of Weights of Perceptrons.....	1629
<i>Charlotte Yuk Fan Ho, Bingo Wing Kuen Ling, Muhammad H U Nasir, Hak Keung Lam and Herbert H. C. Iu</i>	
An Integrated Approach to Robust Speaker Identification and Speech Recognition	1635
<i>C. Kwan, J. Yin, B. Ayhan, S. Chu, X. Liu, K. Puckett, Y. Zhao, K. C. Ho, M. Kruger and I. Sityar</i>	
Enhanced Speech in Noisy Multiple Speaker Environment.....	1640
<i>C. Kwan, S. Chu, J. Yin, X. Liu, M. Kruger and I. Sityar</i>	
Speech Separation Algorithms for Multiple Speaker Environments.....	1644
<i>C. Kwan, J. Yin, B. Ayhan, S. Chu, X. Liu, K. Puckett, Y. Zhao, K. C. Ho, M. Kruger and I. Sityar</i>	
Investigating the Use of Reservoir Computing for Forecasting the Hourly Wind Speed in Short-Term	1649
<i>Aida A. Ferreira, Teresa B. Ludermir, Ronaldo R. B. de Aquino, Milde M. S. Lira and Otoni N. Neto</i>	
Decentralized Indirect Adaptive Fuzzy-Neural Multi-Model Control of a Distributed Parameter Bioprocess Plant.....	1657
<i>Ieroham S. Baruch, Rosalba Galvan-Guerra, Carlos-Roman Mariaca-Gaspar and Patricia Melin</i>	
LS-SVM for Bad Debt Risk Assessment in Enterprises	1665
<i>Yunlong Hu and Yongchen Li</i>	
A Unifying Framework for Spectral Analysis Based Dimensionality Reduction.....	1670
<i>Tianhao Zhang, Dacheng Tao, Xuelong Li and Jie Yang</i>	
Class Specific Gene Expression Estimation and Classification in Microarray Data	1678
<i>Atiq Islam, Khan M. Iftekharuddin and E. Olusegun George</i>	
A Neural-Network-Based Controller for a Single-Link Flexible Manipulator: Comparison of FFNN and DRNN Controllers	1686
<i>Mahmood Amiri, Mohammad Bagher Menhaj and Mohammad Javad Yazdanpanh</i>	

Table of Contents

Modeling of Helper Robots in Manufacturing Systems Using Petri Nets.....	1692
<i>S. Khanmohammadi, H. Ghadiri and M. R. Jahedmotlagh</i>	
Auto-Associative Memory Based on a New Hybrid Model of SFNN and GRNN: Performance Comparison with NDRAM, ART2 and MLP	1698
<i>Hamed Davande, Mahmood Amiri, Alireza Sadeghian and Sylvain Chartier</i>	
A New Technique for Optimizing and Smoothing Randomized Paths	1704
<i>S. Khanmohammadi, A. Mahdizadeh and M. T. VakilBaghmisheh</i>	
Extreme Learning Machine for Multi-Categories Classification Applications.....	1709
<i>Hai-Jun Rong, Guang-Bin Huang and Yew-Soon Ong</i>	
A Few Online Algorithms for Extracting Minor Generalized Eigenvectors	1714
<i>Mao Ye, Yongguo Liu, Hong Wu and Qihe Liu</i>	
Rainfall Intensity Prediction by a Spatial-Temporal Ensemble	1721
<i>Tuan Zea Tan, Gary Kee Khoon Lee, Shie-Yui Liong, Tian Kuay Lim, Jiawei Chu and Terence Hung</i>	
Medical Pattern Understanding Based on Cognitive Linguistic Formalisms and Computational Intelligence Methods.....	1728
<i>Ryszard Tadeusiewicz and Marek R. Ogiela</i>	
Adaptive Training Schema in Mamdani-Type Neuro-Fuzzy Models for Data-Analysis in Dynamic System Forecasting	1733
<i>Wi-Meng Tan and Hiok-Chai Quek</i>	
Neural Network Based Prediction of Protein Structure and Function: Comparison with Other Machine Learning Methods.....	1739
<i>M. Michael Gromiha, Shandar Ahmad and Makiko Suwa</i>	
Benchmarking and Analysis of DNA-Binding Site Prediction Using Machine Learning	1745
<i>Munazah Andrabi, Shandar Ahmad, Kenji Mizuguchi and Akinori Sarai</i>	
CIlib: A Collaborative Framework for Computational Intelligence Algorithms - Part I	1750
<i>G. Pampara, A. P. Engelbrecht and T. Cloete</i>	
A Semi-Automatic Indexing System for Cell Images.....	1758
<i>Chaoxin Zheng, Dermot Kelleher and Khurshid Ahmad</i>	
CIlib: A Collaborative Framework for Computational Intelligence Algorithms - Part II.....	1764
<i>T. Cloete, A. P. Engelbrecht and G. Pampara</i>	
Object Perception in the Neural Modeling Fields Framework.....	1774
<i>Jose F. Fontanari and Leonid I. Perlovsky</i>	
Biologically Realizable Reward-Modulated Hebbian Training for Spiking Neural Networks.....	1780
<i>Silvia Ferrari, Bhavesh Mehta, Gianluca Di Muro, Antonius M. J. VanDongen and Craig Henriquez</i>	
Generation of Pseudorandom Numbers with Arbitrary Distribution by Learnable Look-Up-Table-Type Neural Networks	1787
<i>Simone Fiori</i>	
Soft-Decision Hierarchical Classification Using SVM-Type Classifiers	1793
<i>Yu-Chiang Frank Wang and David Casasent</i>	
Learning Stepsize Selection for the Geodesic-Based Neural Blind Deconvolution Algorithm.....	1801
<i>Simone Fiori</i>	
Robust Adaptive Control Via Neural Linearization and Four Types of Compensation	1807
<i>Wen Yu and Xiaou Li</i>	
Neuro-Fuzzy CBR Hybridization: Healthcare Application	1814
<i>Joseph M. Woodside</i>	

Table of Contents

Computational Intelligence Software: Type-2 Fuzzy Logic and Modular Neural Networks.....	1820
<i>Oscar Castillo and Patricia Melin</i>	
Algorithms for Orthogonal Nonnegative Matrix Factorization.....	1828
<i>Seungjin Choi</i>	
Enhancing SOM Digital Music Archives Using Scatter-Gather.....	1833
<i>Arnulfo P. Azcarraga and Aldrich C. Caw</i>	
Adaptive Dynamic Neuro-Fuzzy System for Traffic Signal Control.....	1840
<i>Tao Li, Dongbin Zhao and Jianqiang Yi</i>	
Ramp Metering Based on On-Line ADHDP (λ) Controller	1847
<i>Xuerui Bai, Dongbin Zhao, Jianqiang Yi and Jing Xu</i>	
COX-2 Activity Prediction in Chinese Medicine Using Neural Network Based Ensemble Learning Methods	1853
<i>Wei Li, Yannan Zhao, Yixu Song and Zehong Yang</i>	
Extreme Learning Machine Based Bacterial Protein Subcellular Localization Prediction	1859
<i>Yuan Lan, Yeng Chai Soh and Guang-Bin Huang</i>	
Minimum Entropy Parameter Estimation: Application to the RKIP Regulated ERK Signaling Pathway	1864
<i>George Papadopoulos and Martin Brown</i>	
ViNNsL - The Vienna Neural Network Specification Language	1872
<i>Peter Paul Beran, Elisabeth Vinek, Erich Schikuta and Thomas Weishaupl</i>	
Reduction of Difference among Trained Neural Networks by Re-Learning.....	1880
<i>Yong Liu</i>	
A Density Based Method for Multivariate Time Series Clustering in Kernel Feature Space.....	1885
<i>S. Chandrakala and C. Chandra Sekhar</i>	
Software Quality Prediction Using Affinity Propagation Algorithm.....	1891
<i>Bingbing Yang, Qian Yin, Shengyong Xu and Ping Guo</i>	
Neural Network Multitask Learning for Traffic Flow Forecasting	1897
<i>Feng Jin and Shiliang Sun</i>	
Towards A Novel Integrated Neuro-Cognitive Architecture (INCA)	1902
<i>Richard J. Oentaryo and Michel Pasquier</i>	
Forecasting Stock Indices with Wavelet-Based Kernel Partial Least Square Regressions	1910
<i>Shian-Chang Huang and Tung-Kuang Wu</i>	
Airport Noise Simulation Using Neural Networks.....	1917
<i>Yingjie Yang, Chris Hinde and David Gillingwater</i>	
Batch Self-Organizing Map Algorithm: A Theoretical Study of Self-Organization of a 1-D Network Under Quantization Effects	1924
<i>Nikolaos Vassilas</i>	
Discrete-Time Recurrent Neural DC Motor Control Using Kalman Learning	1930
<i>Carlos E. Castaneda, Edgar N. Sanchez, Alexander G. Loukianov and Bernardino Castillo-Toledo</i>	
Evolving Both Size And Accuracy of RBF Networks Using Memetic Algorithm	1938
<i>Kelly P. Silva, Rodrigo G. F. Soares, Francisco A. T. de Carvalho and Teresa B. Ludermir</i>	
An Evolutionary Approach for the Clustering Data Problem	1945
<i>Rodrigo G. F. Soares, Kelly P. Silva, Teresa B. Ludermir and Francisco A. T. de Carvalho</i>	
Feature Subset Selection in a Methodology for Training and Improving Artificial Neural Network Weights and Connections.....	1951
<i>Cleber Zanchettin and Teresa B. Ludermir</i>	

Table of Contents

Efficient and Low-Complexity Image Coding with the Lifting Scheme and Modified SPIHT.....	1959
<i>Hong Pan, W. C. Siu and N. F. Law</i>	
A Topology Preserving Mapping for Face Recognition	1964
<i>Colin Fyfe, Tseng Wen-Ching, Wu Chia-Ti, Chien Shih-Yu and Pei Ling Lai</i>	
Robust Clustering Algorithm for High Dimensional Data Classification Based on Multiple Supports.....	1969
<i>Benson S. Y. Lam and Hong Yan</i>	
The Global Kernel k-Means Clustering Algorithm	1977
<i>Grigorios Tzortzis and Aristidis Likas</i>	
GPC Scheme for the Internet-Based Teleoperation	1985
<i>Dan Chen, Ning Xi, YueChao Wang, HongYi Li and XuSheng Tang</i>	
Dynamic Feedback Tracking Control of Tracked Mobile Robots with Estimated Slipping Parameters	1991
<i>Bo Zhou and Jianda Han</i>	
Improving Tractability of Clinical Decision Support System.....	1997
<i>T. Z. Tan, G. S. Ng and C. Quek</i>	
An Adaptive Merging and Growing Algorithm for Designing Artificial Neural Networks.....	2003
<i>Md. Monirul Islam, Md. Faijul Amin, Suman Ahmmed and Kazuyuki Murase</i>	
Unsupervised Extraction of Design Components for a 3D Parts-Based Representation.....	2009
<i>Zdravko Bozakov, Lars Graening, Stephan Hasler, Heiko Wersing and Stefan Menzel</i>	
A Model for Long-Term Environmental Sound Detection	2017
<i>Dick Botteldooren and Bert De Coensel</i>	
How to Maintain Information Content in Artificial Neural Networks with Coherence Adaptation	2024
<i>Md. Shahjahan, Md. Asaduzzaman and K. Murase</i>	
Ensembles of K-Nearest Neighbors and Dimensionality Reduction.....	2032
<i>Oleg Okun and Helen Priisalu</i>	
Wind Shear Forecasting by Chaotic Oscillatory-Based Neural Networks (CONN) with Lee Oscillator (Retrograde Signalling) Model	2040
<i>Max H. Y. Wong, Raymond S. T. Lee and James N. K. Liu</i>	
Connection Between SVM + and Multi-Task Learning	2048
<i>Lichen Liang and Vladimir Cherkassky</i>	
An Enhancement of Relational Reinforcement Learning	2055
<i>Renato R. da Silva, Claudio A. Policastro and, Roseli A. F. Romero</i>	
The Growing Self-Organizing Surface Map.....	2061
<i>Vilson L. DalleMole and Aluizio F. R. Araujo</i>	
Eclectic Method for Feature Reduction Using Self-Organizing Maps.....	2069
<i>Lori L. DeLooze</i>	
Conditional Information and Information Loss for Flexible Feature Extraction.....	2074
<i>Ryotaro Kamimura</i>	
An Intelligent Through-the-Wall Recognition System for Homeland Security	2084
<i>Xiaoxiang Liu, Henry Leung and George A. Lampropoulous</i>	
Evolving Spiking Neural Networks for Taste Recognition.....	2091
<i>S. Soltic, S. G. Wysoski and N. K. Kasabov</i>	
A Formula of Equations of States in Singular Learning Machines.....	2098
<i>Sumio Watanabe</i>	
Classification of the Surface EMG Signal Using RQA Based Representations.....	2106
<i>Changsong Yuan, Xiangyang Zhu, Guangquan Liu and Min Lei</i>	

Table of Contents

Multivariate Chaotic Models vs Neural Networks in Predicting Storm Surge Dynamics.....	2112
<i>Michael Siek, Dimitri Solomatine and Slavco Velickov</i>	
Training of Neural Network Ensemble Through Progressive Interaction	2120
<i>M. A. H. Akhand, Md. Monirul Islam and Kazuyuki Murase</i>	
Protein Localization on Cellular Images with Markov Random Fields.....	2127
<i>Song Liu and Jagath C. Rajapakse</i>	
Extracting EEG Rhythms Using ICA-R.....	2133
<i>Kavuri Swathi Sri and Jagath C. Rajapakse</i>	
A Comparison of Map Neuron Labeling Approaches for Unsupervised Self-Organizing Feature Maps	2139
<i>Willem S. van Heerden and Andries P. Engelbrecht</i>	
A Novel BPSO Approach for Gene Selection and Classification of Microarray Data.....	2147
<i>Cheng-San Yang, Li-Yeh Chuang, Jung-Chike Li and Cheng-Hong Yang</i>	
Image Segmentation Using Dynamic Mechanism Based PCNN Model.....	2153
<i>Yuanhua Qiao, Jun Miao, Lijuan Duan and Yunfeng Lu</i>	
Analysis of Distributed Databases with a Hybrid Rough Sets Approach	2158
<i>Puntip Pattaraintakorn</i>	
Iterative Learning Control for 2-D Systems.....	2164
<i>Ahmadreza Argha, Paknoosh Karimaghaee and Mehdi Roopaei</i>	
Classifiers Based on Bernoulli Mixture Models for Text Mining and Handwriting Recognition Tasks.....	2169
<i>Mehreen Saeed and Haroon Babri</i>	
Extracting Human Players' Shogi Game Strategies from Game Records Using Growing SOM.....	2176
<i>Tomohito Esaki and Tomonori Hashiyama</i>	
Self-Learning Path-Tracking Control of Autonomous Vehicles Using Kernel-Based Approximate Dynamic Programming	2182
<i>Xin Xu, Hongyu Zhang, Bin Dai and Han-gen He</i>	
On Axon Delay Functions and Spiking Activity	2190
<i>Conrad Attard and Andreas A. Albrecht</i>	
Hyperparameters of Gaussian Process as Features for Trajectory Classification.....	2195
<i>G. Haranadh and C. Chandra Sekhar</i>	
Sensor-Fusion in Spiking Neural Network that Generates Autonomous Behavior in Real Mobile Robot.....	2200
<i>Fady Alnajjar and Kazuyuki Murase</i>	
A Spiking Neural Network with Dynamic Memory for a Real Autonomous Mobile Robot in Dynamic Environment.....	2207
<i>Fady Alnajjar, Indra Bin Mohd Zin and Kazuyuki Murase</i>	
An EEG-Based BCI System for 2D Cursor Control.....	2214
<i>Yuanqing Li, Chuanchu Wang, Haihong Zhang and Cuntai Guan</i>	
Adaptive On-Line Registration Algorithm Based on GLR.....	2220
<i>Feng Lian, Chongzhao Han and Yong Shi</i>	
Forecast of Driving Load of Hybrid Electric Vehicles by Using Discrete Cosine Transform and Support Vector Machine.....	2227
<i>Jian Yang, Xi Huang, Ying Tan and Xingui He</i>	
An Improved Method for Automatically Searching Near-Optimal Artificial Neural Networks.....	2235
<i>Leandro M. Almeida and Teresa Ludermir</i>	
Some Fundamental Issues in Ensemble Methods	2243
<i>Wenjia Wang</i>	

Table of Contents

Complex-Valued Function Approximation Using an Improved BP Learning Algorithm for Feed-Forward Networks.....	2251
<i>R. Savitha, S. Suresh, N. Sundararajan and P. Saratchandran</i>	
Batch-Learning Self-Organizing Map with False-Neighbor Degree Between Neurons	2259
<i>Haruna Matsushita and Yoshifumi Nishio</i>	
Relationship Between Depth of Decision Trees and Boosting Performance.....	2267
<i>Geoffrey R. Guile and Wenjia Wang</i>	
Lazy Self-Organizing Map and its Behaviors.....	2275
<i>Taku Haraguchi, Haruna Matsushita and Yoshifumi Nishio</i>	
Interpretation of River Main-Flow from Remote Sensing Images: Studying on Dynamic Transmission Cross-Correlation Method	2281
<i>Han Lin, Liu Xuegong and Zhang Yanning</i>	
Researching on Combining Boosting Ensembles	2290
<i>Joaquin Torres-Sospedra, Carlos Hernandez-Espinosa and Mercedes Fernandez-Redondo</i>	
Nonlinear Model Predictive Control Using a Recurrent Neural Network	2296
<i>Yunpeng Pan and Jun Wang</i>	
An LMI-Neural Network Based Solution to the Load Balancing Problem for Heterogeneous Local Clusters.....	2302
<i>Joao M. M. Silva and Eugenius Kaszkurewicz</i>	
A Comparison of Bayesian and Conditional Density Models in Probabilistic Ozone Forecasting.....	2310
<i>Song Cai, William W. Hsieh and Alex J. Cannon</i>	
A Neurochaotic PSO-Guided Network Based Upon Perturbed Duffing Oscillator.....	2315
<i>Moayed Daneshyari</i>	
Model Switching Predictive Control Using Bagging CAN2 and First-Difference Signals for Temperature Control of RCA Cleaning Solutions	2321
<i>Shuichi Kurogi, Yohei Koshiyama, Daisuke Kuwahara, Takeshi Nishida, Mitsuru Mimata and Katsuyoshi Itoh</i>	
Application of CAN2 to Plane Extraction from 3D Range Images	2327
<i>Shuichi Kurogi, Daisuke Wakeyama, Hideaki Koya, Shota Okada, Shingo Inoue and Takeshi Nishida</i>	
The Learning Convergence of High Dimension CMAC_GBF.....	2333
<i>Ching-Tsan Chiang and Yu-Bin Lin</i>	
Pattern Recognition of Fiber-Reinforced Plastic Failure Mechanism Using Computational Intelligence Techniques.....	2340
<i>XuQin Li, Carlos Ramirez, Evor L. Hines, Mark S. Leeson, Phil Purnell and Mark Pharaoh</i>	
A Q-Learning Approach to Developing an Automated Neural Computer Player for the Board Game of CLUE	2346
<i>Chenghui Cai and Silvia Ferrari</i>	
A Constrained-Optimization Approach to Training Neural Networks for Smooth Function Approximation and System Identification.....	2353
<i>Gianluca Di Muro and Silvia Ferrari</i>	
Recognition of On-Line Handwritten Chemical Expressions.....	2360
<i>Jufeng Yang, Guangshun Shi, Qingren Wang and Yong Zhang</i>	
Energy Feature Extraction of EEG Signals and a Case Study	2366
<i>Jinbo Li and Shiliang Sun</i>	
A Threshold Factor Approach Method for CFAR Detector Based on Stochastic Particle Swarm Optimization.....	2371
<i>Panzhi Liu, Chongzhao Han and Jing Jie</i>	

Table of Contents

From Lung Images to Lung Models: A Review	2377
<i>S. L. A. Lee, A. Z. Kouzani and E. J. Hu</i>	
State and Action Space Segmentation Algorithm in Q-Learning.....	2384
<i>Akira Notsu, Hidetomo Ichihashi and Katsuhiro Honda</i>	
Filter Bank Common Spatial Pattern (FBCSP) in Brain-Computer Interface.....	2390
<i>Kai Keng Ang, Zheng Yang Chin, Haihong Zhang and Cuntai Guan</i>	
Sparse Support Vector Machines Trained in the Reduced Empirical Feature Space.....	2398
<i>Kazuki Iwamura and Shigeo Abe</i>	
Robust Modular Artmap For Multi-Class Shape Recognition	2405
<i>Chue Poh Tan, Chen Change Loy, Weng Kin Lai and Chee Peng Lim</i>	
Fault-Tolerant and High Reliability Space Robot Design and Research.....	2413
<i>Gao Junyao, Gao Xueshan, Zhu Wei, Zhu Jianguo and Wei Boyu</i>	
Vision-Sensorimotor Abstraction and Imagination Towards Exploring Robot's Inner World	2418
<i>Fady Alnajjar, Abdul Rahman Hafiz, Indra Bin Mohd Zin and Kazuyuki Murase</i>	
A LLE-Based Approach to Sensor Fault Detection	2425
<i>W. Zhang, B. Li and W. Zhou</i>	
ATP-Binding Site as a Further Application of Neural Networks to Residue Level Prediction	2430
<i>Shandar Ahmad and Zulfiqar Ahmad</i>	
Financial Crisis Early-Warning Based on Support Vector Machine.....	2435
<i>Yanjie Hu and Juanjuan Pang</i>	
CMOS/CMOL Architectures for Spiking Cortical Column	2441
<i>Changjian Gao, Mazad S. Zaveri and Dan Hammerstrom</i>	
Light Mobile Robot's Weight Design and Research	2449
<i>Gao Junyao, Gao Xueshan, Zhu Wei, Zhu Jianguo and Wei Boyu</i>	
Feature Selection Based on Kernel Discriminant Analysis for Multi-Class Problems	2455
<i>Tsuneyoshi Ishi and Shigeo Abe</i>	
Learning Adaptive Subject-Independent P300 Models for EEG-Based Brain-Computer Interfaces.....	2461
<i>Shijian Lu, Cuntai Guan and Haihong Zhang</i>	
A Pooled Subspace Mixture Density Model for Pattern Classification in High-Dimensional Spaces	2466
<i>Xiao-Hua Liu, Cheng-Lin Liu and Xinwen Hou</i>	
A Hardware-Oriented Learning Algorithm for a Digital Spiking Neuron.....	2472
<i>Hiroyuki Torikai and Sho Hashimoto</i>	
Kernel Discriminant Analysis Using Composite Vectors.....	2480
<i>Jiyong Oh, Chong-Ho Choi and Chunghoon Kim</i>	
r-SVMT: Discovering the Knowledge of Association Rule Over SVM Classification Trees.....	2486
<i>Shaoning Pang and Nikola Kasabov</i>	
An Approach to Prediction of Spatio-Temporal Patterns Based on Binary Neural Networks and Cellular Automata	2494
<i>Tohru Abe and Toshimichi Saito</i>	
Single-Layered Complex-Valued Neural Networks and Their Ensembles for Real-Valued Classification Problems.....	2500
<i>Md. Faijul Amin, Md. Monirul Islam and Kazuyuki Murase</i>	
Study on the Performance of Neuromorphic Adiabatic Quantum Computation Algorithms.....	2507
<i>Aiko Ono, Shigeo Sato, Mitsunaga Kinjo and Koji Nakajima</i>	

Table of Contents

Image Restoration Using L_1-Norm Regularization and a Gradient-Based Neural Network with Discontinuous Activation Functions.....	2512
<i>Leonardo V. Ferreira, Eugenius Kaszkurewicz and Amit Bhaya</i>	
Image Classification Using Gradient-Based Fuzzy c-Means with Divergence Measure	2520
<i>Dong-Chul Park and Dong-Min Woo</i>	
Selective Negative Correlation Learning Algorithm for Incremental Learning	2525
<i>Minlong Lin, Ke Tang and Xin Yao</i>	
A Connection-Limited Neural Network by Infomax and Infomin	2531
<i>Yoshitatsu Matsuda and Kazunori Yamaguchi</i>	
A Neural Model of Demyelination of the Mouse Spinal Cord	2538
<i>Biljana Petreska and Yossi Yovel</i>	
Higher Order Neural Networks for Well Log Data Inversion.....	2545
<i>Kou-Yuan Huang, Liang-Chi Shen and Chun-Yu Chen</i>	
Efficient Online Learning with Spiral Recurrent Neural Networks	2551
<i>Rudolf Sollacher and Huaïen Gao</i>	
Boosting for Feature Selection for Microarray Data Analysis.....	2559
<i>Geoffrey R. Guile and Wenjia Wang</i>	
Designing Beta Basis Function Neural Network for Optimization Using Particle Swarm Optimization	2564
<i>H. Dhahri, Adel. M. Alimi and F. Kararay</i>	
A Variable Structure Neural Network Model For Mid-Term Load Forecasting of Iran National Power System	2572
<i>Nariman Mahdavi, Ali A. Gorji, Mohammad B. Menhaj and Saeedeh Barghinia</i>	
Understanding and Forecasting Atmospheric Quality Parameters with the Aid of ANNs.....	2580
<i>Kostas D. Karatzas, George Papadourakis and Ioannis Kyriakidis</i>	
Uncertainty Propagation for Quality Assurance in Reinforcement Learning	2588
<i>Daniel Schneegass, Steffen Udluft and Thomas Martinetz</i>	
Unsupervised Learning of Categories from Sets of Partially Matching Image Features for Power Line Inspection Robot	2596
<i>Siyao Fu, Qi Zuo, Zeng-Guang Hou, Zize Liang, Min Tan, Fengshui Jing and Xiaoling Fu</i>	
Learnt Topology Gating Artificial Neural Networks	2604
<i>Petr Kadlec and Bogdan Gabrys</i>	
An Implementation of On-Line Traffic Information System via Short Message Service (SMS) for Bangladesh	2612
<i>Md. Shahjahan, Kafi M. Nahin, Md. Mayen Uddin, Md. Shamim Ahsan and K. Murase</i>	
Motor Imagery EEG Detection by Empirical Mode Decomposition.....	2619
<i>Guo Xiaojing, Wu Xiaopei and Zhang Dexiang</i>	
Inductive Learning of Skin Lesion Images for Early Diagnosis of Melanoma.....	2623
<i>Grzegorz Surowka</i>	
Real-Time Recognition of Continuous-Time Biomedical Signals Using the Diffusion Network	2628
<i>Yu-Su Hsu, Tang-Jung Chiu and Hsin Chen</i>	
Local Binary Pattern with New Decomposition Method for Face Recognition.....	2634
<i>Yimo Guo and Zhengguang Xu</i>	
Spiking Neuron Models of the Medial and Lateral Superior Olive for Sound Localisation	2641
<i>Julie A. Wall, Liam J. McDaid, Liam P. Maguire and Thomas M. McGinnity</i>	

Table of Contents

SWAT: An Unsupervised SNN Training Algorithm for Classification Problems	2648
<i>John J. Wade, Liam J. McDaid, Jose A. Santos and Heather M. Sayers</i>	
Incremental Common Spatial Pattern Algorithm for BCI	2656
<i>Qibin Zhao, Liqing Zhang, Andrzej Cichocki and Jie Li</i>	
A Reduced Rule-Based Localist Network for Data Comprehension.....	2660
<i>Richard J. Oentaryo and Michel Pasquier</i>	
Graphical Representation of Cause-Effect Relationships among Chemical Process Variables using a Neural Network Approach.....	2668
<i>Gustavo M. de Almeida, Marcelo Cardoso, Danilo C. Rena and Song W. Park</i>	
Long-Term Prediction of Time Series Using NNE-Based Projection and OP-ELM	2674
<i>Antti Sorjamaa, Yoan Miche, Robert Weiss and Amaury Lendasse</i>	
AANN-HMM Models for Speaker Verification and Speech Recognition.....	2681
<i>Sachin Joshi, Kishore Prahallad and B. Yegnanarayana</i>	
Dynamic Neural Network-Based Pulsed Plasma Thruster (PPT) Fault Detection and Isolation for the Attitude Control System of a Satellite.....	2689
<i>A. Valdes and K. Khorasani</i>	
Does Brain React On Indian Music? - A Functional Magnetic Resonance Imaging Study	2696
<i>J. Satheeshkumar, S. Arumugaperumal, R. Rajesh and C. Kesavadas</i>	
Hybrid Learning Architecture for Unobtrusive Infrared Tracking Support	2703
<i>K. K. Kiran Bhagat, Stefan Wermter and Kevin Burn</i>	
A Novel Low Complexity Speech Recognition Approach	2710
<i>Arjun Singh Gill</i>	
A Neural Wake-Sleep Learning Architecture for Associating Robotic Facial Emotions	2715
<i>Chi-Yung Yau, Kevin Burn and Stefan Wermter</i>	
An Artificial Neural Network Approach for User Class-Dependent Off-Line Sentence Segmentation.....	2722
<i>Cesar A. M. Carvalho and George D. C. Cavalcanti</i>	
Virtual Synaptic Interconnect Using an Asynchronous Network-on-Chip	2727
<i>Alexander D. Rast, Shufan Yang, Mukaram Khan and Steve B. Furber</i>	
Improved Illumination Invariance Using a Color Edge Representation Based on Double Opponent Neurons.....	2735
<i>Javy H. Y. Lau and Bertram E. Shi</i>	
Connectivity Graphs and the Performance of Sparse Associative Memory Models	2742
<i>Weiliang Chen, Rod Adams, Lee Calcraft, Volker Steuber and Neil Davey</i>	
A Behavioral Model of Sensory Alignment in the Superficial and Deep Layers of the Superior Colliculus	2750
<i>Matthew C. Casey and Athanasios Pavlou</i>	
Image Retrieval Using the Curvature Scale Space (CSS) Descriptor and the Self-Organizing Map (SOM) Model Under Scale Invariance	2756
<i>Carlos W. D. de Almeida, Renata M. C. R. de Souza and Nicomedes L. Cavalcanti Junior</i>	
Efficient Hardware Implementation of an Image Compressor for Wireless Capsule Endoscopy Applications.....	2761
<i>Khan Wahid, Seok-Bum Ko and Daniel Teng</i>	
Multivariate Anomaly Detection in Real-World Industrial Systems	2766
<i>Xiao Hu, Raj Subbu, Piero Bonissone, Hai Qiu and Naresh Iyer</i>	
Support Vector Machines and Dynamic Time Warping for Time Series.....	2772
<i>Steinn Gudmundsson, Thomas Philip Rumarsson and Sven Sigurdsson</i>	

Table of Contents

A Fast and Reliable Routing Algorithm Based on Hopfield Neural Networks Optimized by Particle Swarm Optimization	2777
<i>Carmelo J. A. Bastos-Filho, Wesnaida H. Schuler and Adriano L. I. Oliveira</i>	
A Self-Organizing Architecture of Recursive Elements for Continuous Learning.....	2784
<i>Leandro Augusto da Silva, Humberto Sandmann and Emilio Del-Moral-Hernandez</i>	
Comparative Study on Normalization Procedures for Cluster Analysis of Gene Expression Datasets.....	2792
<i>Marcilio C. P. de Souto, Daniel S. A. de Araujo, Ivan G. Costa, Rodrigo G. F. Soares, Teresa B. Ludermit and Alexander Schliep</i>	
A Relational Cascade Correlation for Structured Outputs	2799
<i>Nicola Poletti, Diego Sona and Paolo Avesani</i>	
Application of Self Organizing Kohonen Map to Detection of Surgeon Motions During Endoscopic Surgery	2806
<i>Eduard Petlenkov, Sven Nomm, Juri Vain and Fujio Miyawaki</i>	
Efficient Modelling of Spiking Neural Networks on a Scalable Chip Multiprocessor.....	2812
<i>Xin Jin, Steve B. Furber and John V. Woods</i>	
A Network Model of Rational Versus Irrational Choices on a Probability Maximization Task.....	2820
<i>Daniel S. Levine and Leonid I. Perlovsky</i>	
Neural Control System of a Mobile Robot.....	2825
<i>Moufid Harb, Rami Abielmona, Emil Petriu and Kamal Naji</i>	
Towards Visualisation of Sound-Scapes Through Dimensionality Reduction	2833
<i>Aaron S. W. Wong and Stephan K. Chalup</i>	
Neural Classification Approach for Short Term Forecast of Exchange Rate Movement with Point and Figure Charts	2841
<i>Robert Stahlbock</i>	
SpINNaker: Mapping Neural Networks onto a Massively-Parallel Chip Multiprocessor.....	2849
<i>M. M. Khan, D. R. Lester, L. A. Plana, A. Rast, X. Jin, E. Painkras and S. B. Furber</i>	
A New Information-Theoretic Dissimilarity for Clustering Time-Dependent Gene Expression Profiles Modeled with Radial Basis Functions.....	2857
<i>Jyotsna Kasturi and Raj Acharya</i>	
Clustering of Symbolic Data Through a Dissimilarity Volume Based Measure	2865
<i>Kelly P. Silva, Francisco A. T. de Carvalho and M. Csernel</i>	
Learning from Testing Data: A New View of Incremental Semi-Supervised Learning.....	2872
<i>Yuan Cao and Haibo He</i>	
Gaussian Process Regression for Voice Activity Detection and Speech Enhancement	2879
<i>Sunho Park and Seungjin Choi</i>	
Multifractal Feature Vectors for Brain-Computer Interfaces.....	2883
<i>Nicolas Brodu</i>	
A New Clustering-Based Method for Protein Structure Selection	2891
<i>Qingguo Wang, Yi Shang and Dong Xu</i>	
Pairwise Learning of Multilabel Classifications with Perceptrons.....	2899
<i>Eneldo Loza Mencia and Johannes Furnkranz</i>	
An Analysis of Data Distribution Methods in Classifier Combination Systems	2907
<i>Laura E. A. Santana and Anne M. P. Canuto</i>	
Tradeoff Between Exploration and Exploitation of $OQ(\lambda)$ with Non-Markovian Update in Dynamic Environments	2915
<i>Maryam Shokri, Hamid R. Tizhoosh and Mohamed S. Kamel</i>	

Table of Contents

Deterministic AdaBoost Algorithm Based on FLDF	2922
<i>Jong Chan Lee, Wu Jun, Won Don Lee</i>	
An Accurate Localization for Mobile Robot Using Extended Kalman Filter and Sensor Fusion	2928
<i>Jungmin Kim, Yountae Kim and Sungshin Kim</i>	
Self Organizing Maps and Bit Signature: A Study Applied on Signal Language Recognition.....	2934
<i>Marrony N. Neris, Alexandre J. Silva, Sarajane M. Peres and Franklin C. Flores</i>	
The Implementation of Wheeled Robot Using Adaptive Output Recurrent CMAC.....	2942
<i>Ya-Fu Peng and Chih-Hui Chiu</i>	
Adaptive Parameter Robust Estimation	2948
<i>Dhafar S. Mohammed, Saeid Habibi and Danil Prokhorov</i>	
A Pragmatic Path Toward Endowing Virtually-Embodied AIs with Human-Level Linguistic Capability	2956
<i>Ben Goertzel</i>	
Efficient Segmentation in Multi-Layer Oscillatory Networks	2966
<i>A. Ravishankar Rao, Guillermo A. Cecchi, Charles C. Peck and James R. Kozloski</i>	
On the Decision Boundaries of Hyperbolic Neurons	2974
<i>Tohru Nitta and Sven Buchholz</i>	
Efficient Supervised Learning with Reduced Training Exemplars.....	2981
<i>G. H. Nguyen, A. Bouzerdoum and S. L. Phung</i>	
Class Document Frequency as a Learned Feature for Text Categorization.....	2988
<i>Anand Sharma and Anthony Kuh</i>	
A Novel Multiple Experts and Fusion Based Segmentation Algorithm for Cursive Handwriting Recognition.....	2994
<i>Hong Lee and Brijesh Verma</i>	
Combining LISREL and Bayesian Network to Predict Tourism Loyalty	3000
<i>Chi-I Hsu, Meng-Long Shih, Biing-Wen Huang, Bing-Yi Lin and Chun-Nan Lin</i>	
Recognition of Hypoxia EEG with a Preset Confidence Level Based on EEG Analysis	3005
<i>Jin Zhang, Guang Li, Meng Hu, Jiaojie Li and Zhiyuan Luo</i>	
Particle with Ability of Local Search Swarm Optimization: PALSO for Training of Feedforward Neural Networks.....	3009
<i>Hiroshi Ninomiya and Qi-Jun Zhang</i>	
Validation of Model Simulations with Respect to in Situ Observations by the use of Probabilistic Estimations.....	3015
<i>Julien Brajard, Fouad Badran, Michel Crepon and Sylvie Thiria</i>	
Shedding Weights: More with Less.....	3020
<i>Tsvi Achler, Cyrus Omar and Eyal Amir</i>	
Evolutionary Algorithm for Training Compact Single Hidden Layer Feedforward Neural Networks.....	3028
<i>Hieu Trung Huynh and Yonggwon Won</i>	
A Computational Intelligence Technique for the Identification of Non-Linear Non-Stationary Systems.....	3034
<i>Claudio Turchetti, Francesco Gianfelici, Giorgio Biagetti and Paolo Crippa</i>	
River Basin Flood Prediction Using Support Vector Machines.....	3039
<i>Nipon Theera-Umporn, Sansanee Auephanwiriyakul, Sitawit Suteepohnwiroj, Jonglak Pahasha and Kittichai Wantanajittikul</i>	
Two-Level Clustering Approach to Training Data Instance Selection: A Case Study For the Steel Industry.....	3044
<i>Heli Koskimaki, Ilmari Juutilainen, Perttu Laurinen and Juha Roning</i>	

Table of Contents

Emotion Recognition in Natural Scene Images Based on Brain Activity and Gist	3050
<i>Qing Zhang and Minho Lee</i>	
Non-Uniqueness of Solutions of 1-Norm Support Vector Classification in Dual Form.....	3058
<i>Jia-Rui Zhang, Shih-Yu Chiu and Leu-Shing Lan</i>	
AdaBoost Algorithm with Random Forests for Predicting Breast Cancer Survivability	3062
<i>Jaree Thongkam, Guandong Xu and Yanchun Zhang</i>	
Working Memory and Spontaneous Activity of Cell Assemblies. A Biologically Motivated Computational Model	3070
<i>Colin Molter, David Colliaux and Yoko Yamaguchi</i>	
Automatic Inferring Drug Gene Regulatory Networks with Missing Information Using Neural Networks and Genetic Programming	3078
<i>Alexandru George Floares</i>	
Complex-Valued Multistate Associative Memory with Nonlinear Multilevel Functions for Gray-Level Image Reconstruction.....	3086
<i>Gouhei Tanaka and Kazuyuki Aihara</i>	
Classification of the Thyroid Nodules Using Support Vector Machines.....	3093
<i>Chuan-Yu Chang, Ming-Feng Tsai and Shao-Jer Chen</i>	
Formation of Graph-Based Maps for Mobile Robots using Hidden Markov Models	3099
<i>M. Aziz Muslim and Masumi Ishikawa</i>	
Building a Player Strategy Model by Analyzing Replays of Real-Time Strategy Games	3106
<i>Ji-Lung Hsieh and Chuen-Tsai Sun</i>	
Approximation of a Map and its Derivatives with an RBF Network Using Input-Output Clustering	3112
<i>Fatemeh Tahersima and Babak Nadjar Araabi</i>	
Knowledge Representation and Acquisition for Large-Scale Semantic Memory	3118
<i>Julian Szymanski and Wlodzislaw Duch</i>	
Sound-Source Localization System Based on Neural Network for Mobile Robots.....	3126
<i>Yang Geng, Jongdae Jung and Donggug Seol</i>	
Comparative of Data Base Evolution in Rule Association Algorithms in Incremental and Conventional Way	3131
<i>Euclides Peres Farias Jr. and Julio Cesar Nievola</i>	
Research on the Cellular Neural Network Template for Translation of Gray-Scale Images	3138
<i>Yimo Guo and Zhengguang Xu</i>	
A Genetic Algorithm for Automatic Feature Extraction in P300 Detection.....	3145
<i>Bernardo Dal Seno, Matteo Matteucci and Luca Mainardi</i>	
Computational Intelligence Virtual Community: Framework and Implementation Issues	3153
<i>Jacek M. Zurada, Janusz Wojtusiak, Fahmida Chowdhury, James E. Gentle, Cedric J. Jeannot and Maciej A. Mazurowski</i>	
Active Learning for the Prediction of Phosphorylation Sites	3158
<i>Jun Jiang and Horace H S Ip</i>	
Intelligent Face Mask Prediction System.....	3166
<i>N. Ozkaya and S. Sagiroglu</i>	
Enhancing the Structure and Parameters of the Centers for BBF Fuzzy Neural Network Classifier Construction Based on Data Structure.....	3174
<i>Tarek M. Hamdani, Adel M. Alimi, Fakhri Karrray</i>	

Table of Contents

Microcalcification Enhancement and Classification on Mammograms Using the Wavelet Transform	3181
<i>Tiago A. Docusse, Jullyene R. Furlani, Rodolfo P. Romano, Rodrigo C. Guido, Shi-Huang Chen, Norian Marranghello and Aledir S. Pereira</i>	
A Hierarchical Ensemble Model for Automated Assessment of Stroke Impairment	3187
<i>Jae-Yoon Jung, Janice I. Glasgow and Stephen H. Scott</i>	
The Prediction of Applying Smooth Support Vector Regression and Back Propagation Network in Mutual Fund Performance.....	3192
<i>Ruei-Shan Lu, Shang-Wu Yu and Yi-Hsien Lin</i>	
Restoring Images with a Multiscale Neural Network Based Technique.....	3197
<i>Ana Paula Abrantes de Castro and Jose Demisio Simoes da Silva</i>	
Band-Pass Reservoir Computing.....	3204
<i>Francis Wyffels, Benjamin Schrauwen, David Verstraeten and Dirk Stroobandt</i>	
Combining Attributes to Improve the Performance of Naive Bayes for Regression	3210
<i>Aloisio Carlos de Pina and Gerson Zaverucha</i>	
Chinese Character Identification by Visual Features Using Self-Organizing Map Sets and Relevance Feedback.....	3216
<i>James S. Kirk</i>	
The Problem with Ranking Ensembles Based on Training or Validation Performance.....	3222
<i>Ulf Johansson, Tuve Lofstrom and Henrik Bostrom</i>	
Face Information Processing by Fast Statistical Learning Algorithm.....	3229
<i>M. Nakano, S. Karungaru, S. Tsuge, T.Akashi, Y.Mitsukura and M. Fukumi</i>	
Numerical Condition of Feedforward Networks with Opposite Transfer Functions	3233
<i>Mario Ventresca and Hamid Reza Tizhoosh</i>	
Classification of Molecular Structures Made Easy.....	3241
<i>Edmondo Trentin and Ernesto Di Iorio</i>	
Climatology Databases Using Neural Networks: Application to Global Temperature Profiles	3247
<i>G. Diego and R. Loyola</i>	
Towards Modeling of Readers' Emotional State Response for the Automated Annotation of Documents.....	3253
<i>Dimitrios Tsonos, Kalliopi Ikospentaki and Georgios Kouroupetrolgou</i>	
Cognitive Learning and the Multimodal Memory Game: Toward Human-Level Machine Learning	3261
<i>Byoung-Tak Zhang</i>	
Brain Mechanisms for Robotic Object Pose Estimation	3268
<i>Eris Chinellato, Beata J. Grzyb and Angel P. del Pobil</i>	
Parallel Self-Organizing Maps with Application in Clustering Distributed Data	3276
<i>Flavius L. Gorgonio and Jose Alfredo F. Costa</i>	
Information-Based Dichotomization: A Method for Multiclass Support Vector Machines	3284
<i>Patoomsiri Songsiri, Boonserm Kijssirikul and Thimaporn Phetkaew</i>	
Environment Mapping for Mobile Robots Navigation Using Hierarchical Neural Network and Omnivision	3292
<i>Luciana L. Silva, Mario L. Tronco, Henrique A. Vian, Giovana Pellinson and Arthur J. V. Porto</i>	
Fast Parallel Outlier Detection for Categorical Datasets Using MapReduce	3298
<i>Anna Koufakou, Jimmy Secretan, John Reeder, Kelvin Cardona and Michael Georgiopoulos</i>	
A Comparison of Fuzzy ARTMAP and Gaussian ARTMAP Neural Networks for Incremental Learning.....	3305
<i>Eric Granger, Jean-Francois Connolly and Robert Sabourin</i>	
A New Pruning Algorithm for Neural Network Dimension Analysis	3313
<i>Devin Sabo and Xiao-Hua Yu</i>	

Table of Contents

Identifying Uncertainty Regions in Support Vector Machines Using Geometric Margin and Convex Hulls	3319
<i>Calin Voichita, Purvesh Khatri and Sorin Draghici</i>	
Time Series Forecasting Through Polynomial Artificial Neural Networks and Genetic Programming.....	3325
<i>M. Bernal-Urbina and A. Flores-Mendez</i>	
Towards Using Neural Networks to Perform Object-Oriented Function Approximation.....	3331
<i>Dennis Taylor, Brett Bojduj and Franz Kurfess</i>	
MIMO Beam-Forming with Neural Network Channel Prediction Trained by a Novel PSO-EA-DEPSO Algorithm	3338
<i>Chris Potter, Ganesh K. Venayagamoorthy and, Kurt Kosbar</i>	
Hidden-Markov Model based Sequential Clustering for Autonomous Diagnostics	3345
<i>Akhilesh Kumar, Finn Tseng, Yan Guo and Ratna Babu Chinnam</i>	
Steganalysis of Multi-Class JPEG Images Based on Expanded Markov Features and Polynomial Fitting	3352
<i>Qingzhong Liu, Andrew H. Sung, Bernardete M. Ribeiro and Rita Ferreira</i>	
Obtaining an Optimal Gas Injection Rate for an Oil Production System via Neural Networks	3358
<i>G. Jimenez de la C, Jose A. Ruz-Hernandez and R. Salazar-Mendoza</i>	
A Fast Coreset Minimum Enclosing Ball Kernel Machines.....	3366
<i>Xunkai Wei, Rob Law, Lei Zhang, Yue Feng, Yan Dong and Yinghong Li</i>	
Learning of Sensorimotor Behaviors by a SASE Agent for Vision-Based Navigation	3374
<i>Zhengping Ji, Xiao Huang and Juyang Weng</i>	
Generation of Equal Length Patterns from Heterogeneous Patterns for Using in Artificial Neural Networks.....	3382
<i>Md. Asaduzzaman, Md. Shahjahan, Md. M. Kabir, M. Ohkura and K. Murase</i>	
Multi-view Gender Classification Based on Local Gabor Binary Mapping Pattern and Support Vector Machines.....	3388
<i>Bin Xia, He Sun and Bao-Liang Lu</i>	
Shape Features Extraction from Pulmonary Nodules in X-ray CT Images	3396
<i>Noriyasu Homma, Kazuhisa Saito, Tadashi Ishibashi, Madan M. Gupta, Zeng-Guang Hou and Ashu M. G. Solo</i>	
Kernel Relative Transformation with Applications to Enhancing Locally Linear Embedding	3401
<i>Guihua Wen, Lijun Jiang and Jun Wen</i>	
Data Mining System for Biochemical Analysis in Experimental Physiology.....	3407
<i>Junior Altamiranda, Jose Aguilar and Luis Hernandez</i>	
Opportunistic Spectrum Access in Cognitive Radio Networks	3412
<i>Cuiran Li and Chengshu Li</i>	
Optimal Route of Road Networks by Dynamic Programming	3416
<i>Manoj Kanta Mainali, Kaoru Shimada, Shingo Mabu and Kotaro Hirasawa</i>	
Neural Network Based Controller Design for Three-Phase PWM AC/DC Voltage Source Converters	3421
<i>Wenxin Liu, Li Liu, David A. Cartes and Xin Wang</i>	
Visualization with Voronoi Tessellation and Moving Output Units in Self-Organizing Map of the Real-Number System.....	3428
<i>Yuji Matsumoto, Motohide Umano and Masahiro Inuiguchi</i>	
Analysis of Inter-Spike Interval Characteristics of Piecewise Constant Chaotic Spiking Oscillators	3435
<i>Tomonari Hasegawa, Yusuke Matsuoka and Toshimichi Saito</i>	
Explicit Update vs Implicit Update	3441
<i>Wenwu He and Hui Jiang</i>	

Table of Contents

An EEG-Based Subject- and Session-Independent Drowsiness Detection	3448
<i>Chin-Teng Lin, Nikhil R. Pal, Chien-Yao Chuang, Tzzy-Ping Jung, Li-Wei Ko and Sheng-Fu Liang</i>	
Learning Concept Drift in Nonstationary Environments Using an Ensemble of Classifiers Based Approach	3455
<i>Matthew Karnick, Metin Ahiskali, Michael D. Muhlbaier and Robi Polikar</i>	
Optimizing Sparse Kernel Ridge Regression Hyperparameters Based on Leave-One-Out Cross-Validation.....	3463
<i>Masayuki Karasuyama and Ryohei Nakano</i>	
RDF Based Integrated Information Retrieval in Grid Computing Environment.....	3469
<i>Xuelin Shi, Ying Zhao, Xiangjun Dong</i>	
Complexity Suppression of Neural Networks for PAPR Reduction of OFDM Signal and its FPGA Implementation	3474
<i>Masaya Ohta, Keiichi Mizutani, Naoki Fujita and Katsumi Yamashita</i>	
A Hybrid Prognostics Methodology for Electronic Products	3479
<i>Sachin Kumar, Myra Torres, Y. C. Chan and Michael Pecht</i>	
A Hybrid Intelligent System Clonart for Short and Mid-Term Forecasting for the Brazilian Energy Distribution System	3486
<i>Jose Lima Alexandrino, Cleber Zanchettin and Edson Costa de Barros Carvalho Filho</i>	
A Hybrid Propositional-Embodied Cognitive Architecture for Human-Robot Cooperation.....	3493
<i>Peter F. Dominey, Isabelle Tapiero, Carol Madden, Emmanuel Reynaud, Jocelyne Ventre-Dominey, Michel Hoen and Olivier Koenig</i>	
Design of a Chaotic Neural Network by Using Chaotic Nodes and NDRAM Network.....	3500
<i>A. Taherkhani, A. Mohammadi, S. A. Seyyedsalehi and H. Davande</i>	
Prototype Selection: Combining Self-Generating Prototypes and Gaussian Mixtures for Pattern Classification	3505
<i>Cristiano de S. Pereira and George D. C. Cavalcanti</i>	
Identification of Phase Transitions in Simulated EEG Signals.....	3511
<i>Hima B. Puppala and Robert Kozma</i>	
Combining Global Optimization Algorithms with a Simple Adaptive Distance for Feature Selection and Weighting	3518
<i>Adelia C. A. Barros and George D. C. Cavalcanti</i>	
Detection of Propagating Phase Gradients in EEG Signals Using Model Field Theory of Non-Gaussian Mixtures.....	3524
<i>Robert Kozma, Leonid Perlovsky and JaiSantosh Ankishetty</i>	
Dynamic Logic of Phenomena and Cognition	3530
<i>Boris Kovalerchuk and Leonid Perlovsky</i>	
Fusion in Agent -Based Uncertainty Theory and Neural Image of Uncertainty	3538
<i>Germano Resconi and Boris Kovalerchuk</i>	
Adaptive Stabilized Multi-RBF Kernel for Support Vector Regression.....	3545
<i>Tanasanee Phienthrakul and Boonserm Kijirikul</i>	
Using Artificial Neural Network for Outflow Estimation in an Ungauged Area	3551
<i>Ming-Der Yang, Boris P.T. Chen and Chang-Shian Chen</i>	
Sparse Kernel Models for Spectral Clustering Using the Incomplete Cholesky Decomposition	3556
<i>Carlos Alzate and Johan A. K. Suykens</i>	
IDS Alarms Reduction Using Data Mining	3564
<i>Safaa O. Al-Mamory, Zhang Hongli and Ayad R. Abbas</i>	

Table of Contents

Video Scene Classification and Segmentation Based on Support Vector Machine.....	3571
<i>Yingying Zhu, Zhong Ming and Jun Zhang</i>	
A New Intelligent Digital Right Management Technique for E-Learning Content.....	3577
<i>Hanane H. Mirza, Hien D. Thai and Zensho Nakao</i>	
Application of Computational Intelligence Methods to Greenhouse Environmental Modelling.....	3582
<i>P. M. Ferreira and A. E. Ruano</i>	
Multi-sensor Data Fusion Based on Dynamic Fuzzy Neural Network.....	3590
<i>Yang Xiao, Zhiguo Cao, Yi Zheng and Ruicheng Yan</i>	
Fuzzy Adaptive Resonance Theory Combining Overlapped Category in Consideration of Connections.....	3595
<i>Haruka Isawa, Haruna Matsushita and Yoshifumi Nishio</i>	
Building Meta-learning Algorithms Basing on Search Controlled by Machine Complexity.....	3601
<i>Norbert Jankowski and Krzysztof Grabczewski</i>	
Clifford Hopfield Neural Networks.....	3609
<i>Jose Refugio Vallejo and Eduardo Bayro-Corrochano</i>	
Recurrent Clifford Support Machines.....	3613
<i>Eduardo Bayro-Corrochano, J. Refugio Vallejo-Gutierrez and Nancy Arana-Daniel</i>	
Video Analysis for View-Based Painful Expression Recognition	3619
<i>M. M. Monwar and S. Rezaei</i>	
Anomaly Detection Using Data Clustering and Neural Networks	3627
<i>Hai Qiu, Neil Eklund, Xiao Hu, Weizhong Yan and Naresh Iyer</i>	
Text-Mining Protein-Protein Interaction Corpus Using Concept Clustering to Identify Intermittency.....	3634
<i>Leif E. Peterson and Matthew A. Coleman</i>	
Independent Component Analysis for Spatial Object Recognition with Applications of Information Theory Synthesis.....	3641
<i>Zhengmao Ye, Habib Mohamadian and Yongmao Ye</i>	
Sensing Data Discrete Wavelet Fusion for Pattern Recognition with Qualitative and Quantitative Measuring.....	3647
<i>Zhengmao Ye, Habib Mohamadian and Yongmao Ye</i>	
Hybrid Neurofuzzy Computing with Nullneurons	3653
<i>Michel Hell, Pyramo Costa and Fernando Gomide</i>	
A Maximum Channel Reuse Scheme with Hopfield Neural Network-Based Static Cellular Radio Channel Allocation Systems.....	3660
<i>Jie-Hung Lee, Chiu-Ching Tuan and Tzung-Pei Hong</i>	
A Multi-Agent Based Model for Urban Demand-Responsive Passenger Transport Services	3668
<i>Xu Jin, Habib Abdulrab and Mhamed Itmi</i>	
k-NN Classifiers: Investigating the $k=k(n)$ Relationship.....	3676
<i>C. Alippi, M. Fuhrman and M. Roveri</i>	
Convolutional Non-Negative Sparse Coding.....	3681
<i>Wenwu Wang</i>	
Transmission of Spatio-Temporal Patterns from Biological to Artificial Neural Networks by a Multi-Electrode Array	3685
<i>Andreas Herzog, Karsten Kube, Bernd Michaelis, Ana D. de Lima, Thomas Baltz and Thomas Voigt</i>	
A Quantum Calculus Formulation of Dynamic Programming and Ordered Derivatives	3690
<i>John Seiffert and Donald C. Wunsch II</i>	

Table of Contents

A Multi-Class Brain-Computer Interface with SOFNN-Based Prediction Preprocessing.....	3696
<i>Damien Coyle, Thomas M. McGinnity and Girijesh Prasad</i>	
Out-of-Body Experiences: False Climbs in a Supine Position?	3704
<i>Lars Schwabe and Olaf Blanke</i>	
A Reinforcement Learning System for Swarm Behaviors	3711
<i>T. Kuremoto, M. Obayashi, K. Kobayashi, H. Adachi and K. Yoneda</i>	
A Methodology for Finding Source-level Vulnerabilities of the Linux Kernel Variables	3717
<i>Jaekwang Kim and Jee-Hyong Lee</i>	
A Method to Resolve the Overfitting Problem in Recurrent Neural Networks for Prediction of Complex Systems' Behavior	3723
<i>Kaveh Mahdavian, Helga Mazyar, Saeed Majidi and Mohammad H. Saraei</i>	
Ranking and Selecting Clustering Algorithms Using a Meta-Learning Approach	3729
<i>Marcilio C. P. de Souto, Ricardo B. C. Prudencio, Rodrigo G. F. Soares, Daniel S. A. de Araujo, Ivan G. Costa, Teresa B. Ludermit and Alexander Schliep</i>	
Application of Multiple Decision Trees for Condition Monitoring in Induction Motors	3736
<i>Sergio P. Santos and Jose Alfredo F. Costa</i>	
Clustering Variables by Classical Approaches and Neural Network Boolean Factor Analysis	3742
<i>Alexander Frolov, Dusan Husek, Hana Rezankova, Vaclav Snasel and Pavel Polyakov</i>	
Selecting Software Reliability Models with a Neural Network Meta Classifier	3747
<i>Rafael Caiuta, Aurora Pozo, Leonardo Emmendorfer and Silvia Regina Vergilio</i>	
Neural Learning of Driving Environment Prediction for Vehicle Power Management.....	3755
<i>Yi L. Murphey, ZhiHang Chen, Leo Kiliaris, Jungme Park, Ming Kuang, Abul Masrur and Anthony Phillips</i>	
Modulation of the Fractal Properties of Low Frequency Endogenous Brain Oscillations in Functional MRI by a Working Memory Task.....	3762
<i>Anna Barnes, Garry Honey, Alle-Meije Wink, Edward T. Bullmore and John Suckling</i>	
Adapting Radial Basis Function Neural Networks for One-Class Classification.....	3766
<i>Jianwu Li, Zhanyong Xiao and Yao Lu</i>	
Self-Organizing Neural Models Integrating Rules and Reinforcement Learning	3771
<i>Teck-Hou Teng, Zhong-Ming Tan and Ah-Hwee Tan</i>	
Mass Screening and Feature Reserved Compression in a Computer-Aided System for Mammograms.....	3779
<i>Sheng-Chih Yang, Yi-Jhen Lin, Pau-Choo Chung, Giu-Cheng Hsu and Chien-Shen Lo</i>	
An Empirical Study of the Sample Size Variability of Optimal Active Learning Using Gaussian Process Regression.....	3787
<i>Flora Yu-Hui Yeh and Marcus Gallagher</i>	
Neural Network Electrical Machine Faults Diagnosis Based on Multi-Population GA	3795
<i>Zaiping Chen, Yueming Zhao, Yang Zheng and Rui Lou</i>	
Visual Context Representation Using a Combination of Feature-Driven and Object-Driven Mechanisms.....	3800
<i>Jun Miao, Lijuan Duan, Laiyun Qing, Xilin Chen and Wen Gao</i>	
A Hybrid Self-Organizing Neural Gas Based Network.....	3806
<i>James Graham and Janusz A. Starzyk</i>	
A Turbo Codes Optimization Method Using Particle Swarm Algorithm.....	3814
<i>Jing An, Qi Kang, Lei Wang and Qidi Wu</i>	
Support Vector Machines for Traffic Signs Recognition	3820
<i>Min Shi, Haifeng Wu and Hasan Fleyeh</i>	

Table of Contents

Neuro-visual Control in the Quake II Game Engine	3828
<i>Matt Parker and Bobby D. Bryant</i>	
Creating Adaptive Learning Paths Using Ant Colony Optimization and Bayesian Networks	3834
<i>Jose Manuel Marquez, Juan Antonio Ortega, Luis Gonzalez-Abril and Francisco Velasco</i>	
Kernel Parameter Optimization for Kernel-Based LDA Methods.....	3840
<i>Jian Huang, Xiaoming Chen, P. C. Yuen, Jun Zhang, W. S. Chen and J. H. Lai</i>	
On-Line Learning of Sequence Data Based on Self-Organizing Incremental Neural Network	3847
<i>Shogo Okada and Osamu Hasegawa</i>	
Synchronization Patterns Generated in a Ring of Cross-Coupled Chaotic Circuits	3855
<i>Yumiko Uchitani and Yoshifumi Nishio</i>	
Visual Robot Homing Using Sarsa(&#955;), Whole Image Measure, and Radial Basis Function	3861
<i>Abdulrahman Altahhan, Kevin Burn and Stefan Wermter</i>	
Optimizing Learning Path Selection Through Memetic Algorithms	3869
<i>Giovanni Acampora, Matteo Gaeta, Vincenzo Loia, Pierluigi Ritrovato and Saverio Salerno</i>	
Analysis and Prediction of Time Series Using Fuzzy Transform	3876
<i>Irina Perfilieva, Vilem Novak, Viktor Pavliska, Antonin Dvorak and Martin Stepnicka</i>	
Information Fusion of Wavelet Projection Features for Face Recognition	3881
<i>Cunjian Chen</i>	
Topological Clustering of Synchronous Spike Trains	3889
<i>Zareen Mehboob, Stefano Panzeri, Mathew E. Diamond and Hujun Yin</i>	
Probabilistic Associative Memories.....	3895
<i>James Ting-Ho Lo</i>	
Special Interest Groups Discovery and Semantic Navigation Support within Online Discussion Forums	3904
<i>Yanyan Li, Mingkai Dong and Ronghuai Huang</i>	
A Learner's Role-Based Multi Dimensional Collaborative Recommendation (LRMDCR) for Group Learning Support.....	3912
<i>Xin Wan, Toshie Ninomiya and Toshio Okamoto</i>	
Application of Dynamic Financial Time-Series Prediction on the Interval Artificial Neural Network Approach with Value-at-Risk Model	3918
<i>Hsio-Yi Lin and An-Pin Chen</i>	
Subcellular Localisation of Proteins in Fluorescent Microscope Images Using a Random Forest.....	3926
<i>A. Z. Kouzani</i>	
On the Complexity - Sensitivity Trade-off for the NF-kB Pathway Modeling	3933
<i>Fei He, Martin Brown and Lam Fat Yeung</i>	
Modular Neural Networks for Estimating Odor Concentrations.....	3941
<i>Gao Daqi, Yang Zeping and Sun Jianli</i>	
An Adaptive Feedback Neural Network Approach to Job-shop Scheduling Problem	3949
<i>Wenle Zhang and Rutao Luo</i>	
Combining Neural-Based Regression Predictors Using an Unbiased and Normalized Linear Ensemble Model	3955
<i>Yunfeng Wu, Yachao Zhou, Sin-Chun Ng and Yixin Zhong</i>	
Long-term Forecasting in Financial Stock Market Using Accelerated LMA on Neuro-Fuzzy Structure and Additional Fuzzy C-Means Clustering for Optimizing the GMFs	3961
<i>Felix Pasila, Sautma Ronni, Thiang and Lie Handra Wijaya</i>	

Table of Contents

Feature Selection in Frequency Domain and Its Application to Face Recognition.....	3967
<i>Nan Liu and Han Wang</i>	
Large-Scale Patent Classification with Min-Max Modular Support Vector Machines.....	3973
<i>Xiao-Lei Chu, Chao Ma, Jing Li, Bao-Liang Lu, Masao Utiyama and Hitoshi Isahara</i>	
Using Support Vector Machine to Construct a Predictive Model for Clinical Decision-Making of Ventilation Weaning.....	3981
<i>Hao-Yung Yang, Jiin-Chyr Hsu, Yung-Fu Chen, Xiaoyi Jiang and Tainsong Chen</i>	
Topographic Class Grouping with Applications to 3D Object Recognition.....	3987
<i>Matthew D. Luciw and Juyang Weng</i>	
RBF-NN Based Fusion Model for E-learning Achievement Evaluation.....	3995
<i>Sue-Fn Huang, Liang-Ying Wei, Jr-Shian Chen and Ching-Hsue Cheng</i>	
Some Thoughts on Using Computational Intelligence Methods in Classical Mind Board Games.....	4002
<i>Jacek Mandziuk</i>	
Automatic Speech Recognition and Dependency Network to Identification of Articulation Error Patterns.....	4009
<i>Yeou-Jiunn Chen, Jiunn-Liang Wu and Hui-Mei Yang</i>	
Efficient Minimax Clustering Probability Machine by Generalized Probability Product Kernel.....	4014
<i>Haiqin Yang, Kaizhu Huang, Irwin King and Michael R. Lyu</i>	
RPE-BAM Networks: Bidirectional Heteroassociation in Neural Networks of Recursive Nodes with Rich Dynamics.....	4020
<i>Emilio Del-Moral-Hernandez</i>	
Extending the Growing Hierarchical SOM for Clustering Documents in Graphs Domain.....	4028
<i>Mahmoud F. Hussin, Mahmoud R. Farra and Yasser El-Sonbaty</i>	
Including Multi-Objective Abilities in the Hybrid Intelligent Suite for Decision Support.....	4036
<i>Diogo F. Pacheco, Flávia R. S. Oliveira and Fernando B. Lima Neto</i>	
Distinction Between Handwritten and Machine-Printed Characters with no Need to Locate Character or Text Line Position.....	4044
<i>Junpei Koyama, Masahiro Kato and Akira Hirose</i>	
Face Recognition with Locality Sensitive Discriminant Analysis Based on Matrix Representation.....	4052
<i>Xiaoming Liu, Zhaozhui Wang, Jun Liu and Zhilin Feng</i>	
Heterogeneous Wireless Networked Control Systems Based on Modified Smith Predictor and CMAC-PID Control.....	4059
<i>Du Feng and Qian Qingquan</i>	
Localization via Multipath Strengths in a CDMA2000 Cellular Network Using Neural Networks.....	4066
<i>Salih Ergut, Ramesh R. Rao and Ozgur Dural</i>	
Feature Extractions with Geometric Algebra for Classification of Objects.....	4070
<i>Minh Tuan Pham, Kanta Tachibana, Eckhard Hitzler, Sven Buchholz, Tomohiro Yoshikawa and Takeshi Furuhashi</i>	
Flowchart Knowledge Extraction on Image Processing.....	4075
<i>Bintu G. Vasudevan, Sorawish Dhanapanichkul and Rajesh Balakrishnan</i>	
Facial Expression Recognition Using 2-D DCT of Binarized Edge Images and Constructive Feedforward Neural Networks.....	4083
<i>Liying Ma</i>	
Comparison of Two Linear Models for Estimating Brain Deformation During Surgery Using Finite Element Method.....	4089
<i>Hajar Hamidian, Hamid Soltanian-Zadeh, Reza Faraji-Dana and Masoumeh Gity</i>	

Table of Contents

Optimal Controller Synthesis of Variable-Time Impulsive Problems Using Single Network Adaptive Critics.....	4095
<i>X. Wang and S. N. Balakrishnan</i>	
BCI-FES Training System Design and Implementation for Rehabilitation of Stroke Patients.....	4103
<i>Fei Meng, Kai-yu Tong, Suk-tak Chan, Wan-wa Wong, Ka-him Lui, Kwok-wing Tang, Xiaorong Gao and Shang-kai Gao</i>	
Supporting Mixed Initiative Human-Robot Interaction: A Script-Based Cognitive Architecture Approach	4107
<i>Hogun Park, Yoonjung Choi, Yuchul Jung and Sung-Hyon Myaeng</i>	
Trial Map: A Visualization Approach for Verification of Stroke Impairment Assessment Database.....	4114
<i>Jae-Yoon Jung, Janice I. Glasgow and Stephen H. Scott</i>	
Towards Insightful Algorithm Selection For Optimisation Using Meta-Learning Concepts	4118
<i>Kate A. Smith-Miles</i>	
Output Characteristics of Cellular Neural Networks Using Mixture Template	4125
<i>Takashi Inoue, Masaru Nakano, Yoshifumi Nishio</i>	
Pose Invariant Face Recognition with 3D Morphable Model and Neural Network	4131
<i>Hyun-Chul Choi, Sam-Yong Kim, Sang-Hoon Oh, Se-Young Oh and Sun-Young Cho</i>	
Constrained Optimal Control of Bilinear Systems Using Neural Network Based HJB Solution	4137
<i>Dipak M. Adhyaru, I. N. Kar and M. Gopal</i>	
Models of Complex-Valued Dynamic Associative Memories and Analysis of Their Dynamics - Analytic and Non-analytic Activation Functions	4143
<i>Yasuaki Kuroe and Yuriko Taniguchi</i>	
Low- and High-Aggressive Genetic Breast Cancer Subtypes and Significant Survival Gene Signatures	4151
<i>V. A. Kuznetsov, E. Motakis and A. V. Ivshina</i>	
A Teacher for Every Learner: Rising to the Challenge with Computational Intelligence	4157
<i>Permanand Mohan</i>	
Visual Multi-Target Tracking by using Modified Kohonen Neural Networks	4163
<i>Francis Garcia, Ernesto Araujo</i>	
Using the Q-Learning Algorithm in the Constructive Phase of the GRASP and Reactive GRASP Metaheuristics.....	4169
<i>Adriao Duarte Doria Neto, Francisco Chagas de Lima Junior, Jorge Dantas de Melo</i>	