The 2012 International Joint Conference on Neural Networks

(IJCNN 2012)

Brisbane, Australia
10-15 June 2012

Pages 1895-2770

IEEE Catalog Number: CFP12IJS-PRT
ISBN: 978-1-4673-1488-6
Neural and Fuzzy Dynamic Programming for Under-actuated Systems .......................................................... 1895
Dongbin Zhao, Yuanheng Zhu, Haibo He

Neural Inverse Optimal Control for Discrete-Time Uncertain Nonlinear Systems Stabilization ......................... 1902
Fernando Ornelas-Tellez, Edgar N. Sanchez, Ramon Garcia-Hernandez, Jose A. Ruiz-Hernandez, Jose L. Rullan-Lara

State Transition Control of a Five-fingered Pneumatic Hand Using a Neural network ..................................... 1908
Osamu Fukuda, Jonghwan Kim, Isao Nakai, Yasunori Ichikawa

A Biologically Inspired Action Selection Algorithm Based on Principles of Neuromodulation ............................. 1916
Jeffrey L. Krichmar

Support Vector Machine-Based Classification of Rock Texture Images Aided by Efficient Feature Selection ............. 1924
Changjing Shang, Dave Barnes

Population-Based Routing in the SpiNNaker Neuromorphic Architecture ....................................................... 1932
Sergio Davies, Javier Navaridas, Francesco Galluppi, Steve Furber

Exploiting Device Mismatch in Neuromorphic .................................................................................................. 1940
Sadique Sheik, Elisabetta Chicca, Giacomo Indiveri
Building Block of a Programmable Neuromorphic Substrate: A Digital Neurosynaptic Core
John V. Arthur, Paul A. Merolla, Filipp Akopyan, Rodrigo Alvarez

Redundancy-Constrained Feature Selection with Radial Basis Function Networks
Nikhil R. Pal, Mridul Malpani

Feature Selection Based on Sparse Imputation
Jin Xu, Yafeng Yin, Hong Man, Haibo He

Feature Selection via Regularized Trees
Houaoo Deng, George Runger

The Convergence Rate of the MDM Algorithm
Jorge Lopez, Jose R. Dorronsoro

A Unified Model for Support Vector Machine and Support Vector Data Description
Trung Le, Dat Tran, Wanli Ma, Dharmendra Sharma

A Semi-Supervised Formulation to Binary Kernel Spectral Clustering
Carlos Altate, Johan A. K. Suykens

Inference of S-system Models of Genetic Networks by Solving Linear Programming Problems and Sets of Linear Algebraic Equations
Shuhei Kimura, Koki Matsumura, Mariko Okado-Hatakeyama

Unified Knowledge Based Economy Neural Forecasting Map
Ahmed AlShami, Ahmad Lotfi, Simeon Coleman

Reservoir-computing-based, Biologically-inspired Artificial Neural Network for Modeling of a Single Machine Infinite Bus Power System
Jing Dai, Ganesh Kumar Venayagamoorthy, Ronald G. Harley, Steve M. Poister

A Scalable Wide Area Monitoring System using Cellular Neural Networks
Karthikeyan Balasubramiam, Bipul Luitel, Ganesh Kumar Venayagamoorthy

Load Profile Generator and Load Forecasting for a Renewable Based Microgrid Using Self Organizing Maps and Neural Networks
J. Llanos, D. Saet, R. Palma-Behnke, A. Nunez

Discriminative Kernel Hat Matrix: A New Tool for Automatic Outlier Identification
F. Dufrenois, J.C Noyer

Semi-Supervised Clustering with Multi-Viewpoint based Similarity Measure
Yang Yan, Lihui Chen, Duc Thang Nguyen

Bounded Component Analysis of the Training Error
Pablo Aguilera-Bonet, Ivan Duran-Diaz, Auxiliadora Sarmiento, Sergio Cruces

Dynamically Weighted Classification with Clustering to Tackle Non-stationarity in Brain Computer Interfacing

Relevance Learning for Short High-Dimensional Time Series in the Life Sciences
F.-M. Schleif, A. Gisbrecht, B. Hammer

A Method for Analysis and Correction of Cross-Talk Effects in Pathway Analysis
Michele Donato, Alin Tomoiaga, Zhonghui Xu

Estimation of Functional Brain Connectivity from Electrocorticograms Using an Artificial Network Model
Misako Komai, Jun Namikawa, Jun Tan, Zenaz C. Chao, Yasuo Nagasaka, Naotaka Fujii, Kiyohiko Nakamura

Seizure Detection based on Spatiotemporal Correlation and Frequency Regularity of Scalp EEG
Yasuhashi Pan, Cuntai Guan, Shih-Hui Lim

Fractal Analysis of Resting State Functional Connectivity of the Brain
Wonsang You, Sophie Achardy, Jorg Stadler, Bernd Bruckner, Udo Seiffert

Incremental Update of Biometric Models in Face-Based Video Surveillance
Miguel De-la-Torre, Eric Granger, Paulo V. W. Radke, Robert Sabourin, Dmitry O. Gorodnichy

Detector Ensembles for Face Recognition in Video Surveillance
Christophe Pagano, Eric Granger, Robert Sabourin, Dmitry O. Gorodnichy

A Fast Large Scale Iris Database Classification with Optimum-Path Forest Technique: A Case Study
Luiz C. S. Fonseca, João P. Papa, Aparecido N. Marana, Ahmad Poursaberi, Svetlana N. Yunushkevich

Complex Chemotaxis Behaviors of C. elegans with Speed Regulation Achieved by Dynamic Neural Networks
Jian-Xin Xu, Xin Deng

A Group-decision Making Model of Orientation Detection
Hui Wei, Yuan Ren, Zheyun Wang

Human Implicit Intent Transition Detection Based on Pupillary Analysis
Young-Min Jang, Rammohan Mallipeddi, Sangil Lee, Ho-Wan Kwak

Autonomous Learning of Collaboration Among Robots
Paolo Arena, Luca Pataro, Alessandra Vitanzo
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Committee of MLP with Adaptive Slope Parameter Trained by the quasi-Newton Method to Solve Problems in Hydrologic Optics</td>
<td>2159</td>
</tr>
<tr>
<td>Negative Space Template: A Novel Feature to Describe Activities in Video</td>
<td>2167</td>
</tr>
<tr>
<td>Fingerprint Reference Point Detection Based on Local Ridge Orientation Patterns of Fingerprints</td>
<td>2174</td>
</tr>
<tr>
<td>A Projective Clustering Algorithm based on Significant Local Dense Areas</td>
<td>2182</td>
</tr>
<tr>
<td>CAIRAD: A Co-appearance based Analysis for Incorrect Records and Attribute-values Detection</td>
<td>2190</td>
</tr>
<tr>
<td>Online Learning for Collaborative Filtering</td>
<td>2200</td>
</tr>
<tr>
<td>Sequence Learning using the Adaptive Suffix Trie Algorithm</td>
<td>2208</td>
</tr>
<tr>
<td>A Study on Cost-Effective P2P Traffic Classification</td>
<td>2216</td>
</tr>
<tr>
<td>Various Artifacts Reduction Algorithms for EEG Recorded in Continuous fMRI Scan Environment</td>
<td>2223</td>
</tr>
<tr>
<td>Evolving Linear Neural Networks for Features Space Dimensionality Reduction</td>
<td>2227</td>
</tr>
<tr>
<td>Neural Representation and Learning for Multi-view Human Action Recognition</td>
<td>2233</td>
</tr>
<tr>
<td>Application of the IPSOnet in Face Detection</td>
<td>2239</td>
</tr>
<tr>
<td>Face Recognition with Manifold-Based Kernel Discriminant Analysis</td>
<td>2246</td>
</tr>
<tr>
<td>Meta-Cognitive Neuro-Fuzzy Inference System for Human Emotion Recognition</td>
<td>2254</td>
</tr>
<tr>
<td>Parallel Learning of Large-scale Multi-Label Classification Problems with Min-Max Modular LIBLINEAR</td>
<td>2261</td>
</tr>
<tr>
<td>A New Granular Computing Approach for Sequences Representation and Classification</td>
<td>2268</td>
</tr>
<tr>
<td>Parallel Algorithms for Tensor Product-based Inexact Graph Matching</td>
<td>2276</td>
</tr>
<tr>
<td>Sequence Recognition with Spatio-Temporal Long-Term Memory Organization</td>
<td>2284</td>
</tr>
<tr>
<td>Discovering Frequent Closed Episodes from an Event Sequence</td>
<td>2292</td>
</tr>
<tr>
<td>Electricity Load Forecasting Using Non-decimated Wavelet Prediction Methods With Two-Stage Feature Selection</td>
<td>2300</td>
</tr>
<tr>
<td>A Modified Wavelet-Common Spatial Pattern Method for Decoding Hand Movement Directions in Brain Computer Interfaces</td>
<td>2308</td>
</tr>
<tr>
<td>Enhancing the Classification Accuracy of Steady-State Visual Evoked Potential-based Brain-Computer Interface using Component Synchrony Measure</td>
<td>2313</td>
</tr>
<tr>
<td>Robust EEG Channel Selection across Sessions in Brain-Computer Interface Involving Stroke Patients</td>
<td>2319</td>
</tr>
<tr>
<td>A Fault/Anomaly System Prognosis using a Data-driven Approach considering Uncertainty</td>
<td>2325</td>
</tr>
<tr>
<td>On-line Reconstruction of Missing Data in Sensor/Actuator Networks by Exploiting Temporal and Spatial Redundancy</td>
<td>2332</td>
</tr>
<tr>
<td>A Distributed Architecture for Sensor Fault Detection and Isolation using Adaptive Approximation</td>
<td>2340</td>
</tr>
<tr>
<td>On the Theoretical and Computational Analysis between Trace Ratio LDA and Null-space LDA</td>
<td>2348</td>
</tr>
</tbody>
</table>
On-line Handwritten Chinese Character Recognition Based on Inter-Radical Stochastic Context-Free Grammar .......................................................... 2355
Long-Long Ma, Jian Wu

Hybrid Neural Network Under-Actuated Sliding-Mode Control for Trajectory Tracking of Quad-Rotor Unmanned Aerial Vehicle .................................. 2360
Chih-Liang Hwang

Nonlinear System Identification Based on SVR with Quasi-linear Kernel .......................................................... 2368
Yu Cheng, Jinglu Hu

The Sludge Volume Index Soft Sensor Model Based on PCA-Elman NN .......................................................... 2376
Xichun Yuan, Honggui Han

Applying Adaptive Over-sampling Technique Based on Data Density and Cost-Sensitive SVM to Imbalanced Learning .......................................................... 2383
Senzhang Wang, Zhoufan Li, Wenhan Chao, Qinghua Cao

One-Shot Learning in the Road Sign Problem .......................................................... 2391
Rafael C. Pinto, Paulo M. Engel, Milton R. Heinen

Kernel and Spectral Methods for Solving the Permutation Problem in Frequency Domain BSS .......................................................... 2397
Yueyue Na, Jian Yu

Implementation of Configurable and Multipurpose Spiking Neural Networks on GPUs .......................................................... 2405
Antonio Arista-Jalife, Roberto A. Zavalez

A Novel Target Recognition Scheme for WSNs .......................................................... 2413
Mohammed Al-Naeem, Asad I. Khan

A Modified Fast Recursive Hidden Nodes Selection Algorithm for ELM .......................................................... 2426
Min Han, Xinying Wang

A Simple Synchronization Criterion for a Complex Network Based on the Feedback .......................................................... 2426
Zhao Mo, Zhang Huaguang, Wang Zhiiliang

Measures for Clustering and Anomaly Detection in Sets of Higher Dimensional Ellipsoids .......................................................... 2431
Sutharshan Rajasegarar, James C. Bezdek, Masud Moshtagh, Christopher Leckie, Timothy C. Havens

Performance Analysis of Nonlinear Echo State Network Readouts in Signal Processing Tasks .......................................................... 2439
Levy Boccato, Diogo C. Soriano, Romis Attux, Fernando Jose Von Zaben

Sparse Representation based on Matrix Rank Minimization and K-Means Clustering for Recognition .......................................................... 2447
Long Ma, Chunyong Wang, Baikhu Xia

Real Time On-Chip Implementation of Dynamical Systems with Spiking Neurons .......................................................... 2455
Francesco Galluppi, Sergio Davies, Steve Furber, Terry Stewart, Chris Eliasmith

Multilayer Perceptron Learning with Particle Swarm Optimization for Well Log Data Inversion .......................................................... 2463
Kou-Yuan Huang, Kai-Ju Chen, Liang-Chi Shen, Ming-Che Huang

A Generalized Canonical Correlation Analysis Based Method for Blind Source Separation from Related Data Sets .......................................................... 2469
Juha Karhunen, Tele Hao, Jarkko Ylipaavalniemi

Multicriteria Clustering with Weighted Tchebycheff Distances for Relational Data .......................................................... 2478
Sergio Queiroz, Yves Lechevallier

A Spiking Network for Object and Ego-Motion Detection in Roving Robots .......................................................... 2484
Paolo Arena, Luca Patane

Using Unreliable Data for Creating More Reliable Online Learners ........................................................................................................ 2492
Leandro L. Minku, Xin Yao

Semi-Supervised Detection of Collective Anomalies with an Application in High Energy Particle Physics .......................................................... 2500
Tommi Vatanen, Mikael Kuusela, Eric Malmi, Tapani Raiko, Timo Aaltomen, Yoshikazu Nagai

Producing Implicit Diversity in ANN Ensembles ........................................................................................................ 2508
Ulf Johansson, Torve Loftstrom

Self-organization of Object Features Representing Motion Using Multiple Timescales Recurrent Neural Network ........................................................................................................ 2516
Shun Nishide, Jun Tani, Hiroshi. G. Ohuno, Tetsuya Ogata

Extended Maximum a Posteriori-based Kernel Classification Trained by Linear Programming (MAPLP) with Adjustment Parameter (MAPLP-P) and Difference-type Objective Function (MAPLP-D) ........................................................................................................ 2524
Yukihiro Yamazita

Using Bootstrap AdaBoost with KNN for ECG-based Automated Obstructive Sleep Apnea Detection .......................................................... 2532
Tsz-Ping Kao, Jeen-Shing Wang, Che-Wei Lin, Ya-Ting Yang, Fang-Chen Juang

An Experimental Evaluation of Pairwise Adaptive Support Vector Machines ........................................................................................................ 2537
Kenny Hong, Stephen K. Chalup, Robert A.R. King

Nearest Neighbor Distributions for Pairwise Classification ........................................................................................................ 2545
Evan Kriminger, Jose C. Principe, Choudur Lakshminarayan
A KNN-SVM Hybrid Model for Cursive Handwriting Recognition
Cleber Zanchettin, Byron Leite Dantas Bezerra, Washington W. Azevedo

Offline Handwritten Signature Verification through Network Radial Basis Functions optimized by Differential Evolution
Saulo Henrique Leoncio de Medeiros Napoles, Cleber Zanchettin

Kernel Classifier with Correntropy Loss
Rosha Pokharel, Jose C. Principe

Redundancy Reduction in Self-Organising Map Merging for Scalable Data Clustering
Hiran Ganegedara, Damminda Alahakoon

Learning Algorithm for Self-Organizing Map Classification of Electroencephalogram Patterns with Individual Differences
Shin-ichi Ito, Katsuya Sato, Shoichiro Fujisawa

A New Model for Measuring the Accuracies of Majority Voting Ensembles
Xueyi Wang

Multi-Layer Perceptron with Positive and Negative Pulse Glial Chain for Solving Two-Spirals Problem
Chithiro Ikuta, Yoko Uwate, Yoshifumi Nishio

Kernel Spectral Clustering for Community Detection in Complex Networks
Rocco Langone, Carlos Alzate, Johan A. K. Suykens

IFKCN: Applying Fuzzy Kohonen Clustering Network to Interval Data
Carlos W.D. de Almeida, Renata M.C.R. Souza, Ana Lucia B. Candelas

A Sparse Kernel Representation Method for Image Classification
Shuyuan Yang, Yue Han, Xiangrong Zhang

Adaptive Dynamic TS-KCMAC Neural Networks for Prediction and Identification
Yu-Lin Liao, Ya-Fu Peng, Ching-Chou Liao

Hidden State Estimation using the Correntropy Filter with Fixed Point Update and Adaptive Kernel Size
Goktug T. Cinar, Jose C. Principe

Face Sequence Recognition Using Grassmann Distances and Grassmann Kernels
Ryosuke Shigenaka, Bisser Raytchev, Toru Tamaki, Kazutoshi Kaneda

Feature Space Transformation for Transfer Learning
Nistor Grozavu, Younes Bennis, Lahir Labiod

Kernel Enhanced Multilayer Perceptron for Industrial Process Diagnosis
Lucas H. Sousa Mello, Flavio M. Varejao, Thomas W. Rauber

Online Learning using a Bayesian Surprise Metric
Eron Hasanbelliu, Kittipat Kampa, Jose C. Principe, James T. Cobb

Change Detection in Data Streams Through Unsupervised Learning
Guenaël Cabannes, Younes Bennis

Multi-Label Hierarchical Classification using a Competitive Neural Network for Protein Function Prediction
Helyane Bronski Borges, Julio Cesar Nevesa

A Neural Correlate to Learning Decision and Control using Functional Synaptic Efficacy
Chenhui Yang, Sijia Wang, Bing Cheng, Yuan Yuan, Jennie Si

Sampling + Reweighting: Boosting the Performance of AdaBoost on Imbalanced Datasets
Bo Yuan, Xiaoli Ma

Forecasting Exchange Rates with Ensemble Neural Networks and Ensemble K-PLS: A Case Study for the US Dollar Per Indian Rupee
Mark J. Embrechts, Christopher J. Gatti, Jonathan Linton, Thiemo Gruber

A Genetic-Based Approach to Features Selection for Ensembles Using a Hybrid and Adaptive Fitness Function
Anne M. P. Canuto, Diego S. C. Nascimento

Extending the Functional Training Approach for B-Splines
Cristiano L. Cabrita, Antonio E. Ruano, Pedro M. Ferreira, Laszlo T. Kocsy

Improving Kernel Locality-Sensitive Hashing Using Pre-Images and Bounds
Zalan Bodo, Lehel Csato

Hybrid Particle Swarm Optimization Based Normalized Radial Basis Function Neural Network for Hypoglycemia Detection
Phyo Phy San, Sai Ho Ling, Hung T. Nguyen

Predicting Protein-Ligand Binding Site with Differential Evolution and Support Vector Machine
Ginny Y. Wong, Frank H.F. Leung, Sai-Ho Ling
A Particle Swarm Optimization-based Neural Network for Detecting Nocturnal Hypoglycemia Using Electroencephalography Signals
Lien B. Nguyen, Anh V. Nguyen, Sai Ho Ling, Hung T. Nguyen

Dynamic Behaviors of Hybrid Lotka-Volterra Recurrent Neural Networks with Memristor Characteristics
Allong Wu, Zhigang Zeng

Online Prediction of Time Series Data with Recurrent Kernels
Zhao Xu, Qing Song, Fan Haijin, Danwei Wang

Model-based Articulatory Phonetic Features for Improved Speech Recognition
Guangpu Huang, Meng Joo Er

Static and Dynamic Memory to Simulate Higher-Order Cognitive Tasks
Fady S. Alnajjar, Yuichi Yamashita, Jun Tani

Surface EMG Signals Determinism Analysis Based on Recurrence Plot for Hand Grasps
Gaoxiang Ouyang, Zhaojie Ju, Honghai Liu