To Use this Table of Contents: Scroll down or use the bookmarks in the left-hand frame to move to a new location in this index. Click on a blue paper title to view that paper. To return to this index after viewing a paper, click the “PREVIOUS MENU” bookmark in the left frame.

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### MonAM-1
#### Neural Hardware I
**Chair:** Bertram E. Shi
8:00AM
**Implementing Synaptic Plasticity in a VLSI Spiking Neural Network Model** [IJCNN1563]
- Johannes Scheumont
- Andreas Gruebl
- Karlheinz Meier
- Eilif Mueller
**Univ. of Heidelberg**
8:20AM
**Active Binocular Gaze Control Inspired by Superior Colliculus.** [IJCNN1778]
- Eric K. C. Tsang
- Bertram E. Shi
**Hong Kong Univ. of Sci. and Tech.**
8:40AM
**A Scalable FPGA Implementation of Cellular Neural Networks for Gabor-type Filtering** [IJCNN1259]
- Ocean Y. H. Cheung
- Philip H. W. Leong
- Eric K. C. Tsang
- Bertram E. Shi
**Chinese Univ. of Hong Kong**
**Hong Kong Univ. of Sci. & Tech.**
9:00AM
**Training Convolutional Networks of Threshold Neurons Suited for Low-power Hardware Implementation** [IJCNN1795]
- Johannes Fieres
- Johannes Scheumont
- Karlheinz Meier
**Univ. of Heidelberg**
9:20AM
**Local Cluster Neural Network On-chip Training** [IJCNN1445]
- Liang Zhang
- Joaquin Sitte
**Queensland Univ. of Tech.**
9:40AM
**A Hardware Architecture for Color Image Enhancement Using a Machine Learning Approach with Adaptive Parameterization** [IJCNN1649]
- Ming Zhang
- Ming Seow
- Vijayan Asari
**Old Dominion Univ.**

### MonAM-2
#### Reinforcement Learning Theory I
**Chairs:** Thaddeus Shannon & Stefan Schaal
8:00AM
**Dynamic Exploration in Q (lambda)-learning** [IJCNN1548]
- Jelmer van Ast
- Robert Babuska
**Delft Univ. of Tech.**
8:20AM
**Global Reinforcement Learning in Neural Networks with Stochastic Synapses** [IJCNN1372]
- Xiaolong Ma
- Konstantin Likharev
**Stony Brook Univ.**
8:40AM
**Connectionist Reinforcement Learning with Cursory Intrinsic Motivations and Linear Dependencies to Multiple Representations** [IJCNN1316]
- Takeuchi Johane
- Shouno Osamu
- Tsujino Hiroshi
**Honda Research Inst. Japan Co., Ltd.**
9:00AM
**Qualitative Adaptive Critics** [IJCNN1923]
- Thaddeus Shannon
**Portland State Univ.**
9:20AM
**Aggregation of Reinforcement Learning Algorithms** [IJCNN1668]
- Ju Jiang
- Mohamed Kamel
**Univ. of Waterloo**
9:40AM
**Reinforcement Learning for Parameterized Motor Primitives** [IJCNN1759]
- Jan Peters
- Stefan Schaal
**Univ. of Southern California**

### MonAM-3
#### Neuroinformatics
**Chairs:** Marc de Kamps & Philippe De Wilde
8:00AM
**Event Modeling of Message Interchange in Stochastic Neural Ensembles** [IJCNN1898]
- Vicen Gomez
- Andreas Kaltenbrunner
- Vicente Lopez
**Universitat Pompeu Fabra**
8:20AM
**Venn-like Models of Neo-cortex Patches** [IJCNN1405]
- Fernando Buarque de Lima Neto
- Philippe De Wilde
**Pernambuco State Univ.**
**Heriot-Watt Univ.**
8:40AM
**Using Neural Networks with Automatic Relevance Determination to Identify Regions of the Thalamus Implicated in Schizophrenia** [IJCNN1654]
- Antony Browne
- Angela Jakary
- Sophia Vinogradov
- Yu Fu
**Univ. of Surrey**
**Veterans Affairs Medical Center**
**Veterans Affairs Medical Center**

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Junior Ballroom A
Junior Ballroom B
9:00AM
An Analytic Solution of the Reentrant Poisson Master Equation and its Application in the Simulation of Large Groups of Spiking Neurons [IJCNN1648]
Marc de Kamps, TU Munich

9:20AM
Modeling Cortical Maps with Feed-Backs [IJCNN1306]
Thierry Vieville INRIA
Pierre Kornprobst INRIA

9:40AM
Simulation of Young Neocortical Networks by Spatially Coupled Oscillators [IJCNN1610]
Andreas Herzog Otto von Guericke Univ.
Karsten Kube Otto von Guericke Univ.
Bernd Michaelis Otto von Guericke Univ.
Ana D. de Lima Otto von Guericke Univ.
Thomas Voigt Otto von Guericke Univ.

MonAM-4
Learning in Kernel Methods
Chair: Johan A. K. Suykens

8:00AM
Learning to Rank by Maximizing AUC with Linear Programming [IJCNN1729]
Kaan Ataman Univ. of Iowa
Nick Street Univ. of Iowa
Yi Zhang Univ. of Iowa

8:20AM
A Pairwise Reduced Kernel-based Multi-classification Tikhonov Regularization Machine. [IJCNN1847]
Olutayo Oladunni Univ. of Oklahoma
Theodore Trafalis Univ. of Oklahoma

8:40AM
A Weighted Kernel PCA Formulation with Out-of-Sample Extensions for Spectral Clustering Methods [IJCNN1629]
Carlos Alzate ESAT/SCD/SISTA - K.U.Leuven

9:00AM
Sparse Optimization for Second Order Kernel Methods [IJCNN1830]
Roland Vollgraf Berlin Univ. of Tech.
Klaus Obermayer Berlin Univ. of Tech.

9:20AM
The Entire Solution Path of Kernel-based Nonparametric Conditional Quantile Estimator [IJCNN1589]
Ichiro Takeuchi Mie Univ.
Kaname Nomura Mie Univ.
Takafumi Kanamori Tokyo Inst. of Tech.

9:40AM
Greedy Forward Selection Algorithms to Sparse Gaussian Process Regression [IJCNN1880]
Ping Sun Univ. of Birmingham
Xin Yao Univ. of Birmingham
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<td>Default Values to Handle Incomplete Fuzzy Information [FUZZ4534]</td>
<td>Susana Munoz-Hernandez, Claudio Vaucheret</td>
<td>Tech. Univ. of Madrid, Univ. of Comahue</td>
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<td>T-Norms on Bounded Lattices: t-norm Morphisms and Operators [FUZZ4318]</td>
<td>Benjamin Rene Callejas Bedregal, Helida Salles Santos, Roberto Callejas-Bedregal</td>
<td>Federal Univ. of Rio Grande do Norte, Federal Univ. of Rio Grande do Norte, Federal Univ. of Rio Grande do Norte</td>
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<td>9:20AM</td>
<td>Air Quality Assessment Using Fuzzy Lattice Reasoning (FLR) [FUZZ4420]</td>
<td>Ioannis N. Athanasiadis, Vassilis Kaburlasos</td>
<td>Dalle Molle Inst. for Artificial Intelligence, Tech. Educational Inst. of Kavala</td>
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<td>9:40AM</td>
<td>Intuitionistic Fuzzy Set Functions, Mass Assignment Theory, Possibility Theory and Histograms [FUZZ4436]</td>
<td>Eulalia Szmidt, Jim Baldwin</td>
<td>Polish Academy of Sci., Univ. of Bristol</td>
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<td>8:00AM</td>
<td>Fuzzy Clustering I Chair: Rudolf Kruse</td>
<td>Carl Frelicot, Laurent Mascari, Michel Berthier</td>
<td>Univ. de La Rochelle, Univ. de La Rochelle, Univ. de La Rochelle</td>
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<td>8:20AM</td>
<td>Finding the Number of Fuzzy Clusters by Resampling [FUZZ4326]</td>
<td>Christian Borgelt, Rudolf Kruse</td>
<td>Otto-von-Guericke, Univ. of Magdeburg</td>
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<td>8:40AM</td>
<td>Fuzzy Clustering Algorithms for Symbolic Interval Data based on L2 Norm [FUZZ4437]</td>
<td>Francisco De Carvalho, Nicomedes Cavalcanti Junior</td>
<td>Centro de Informatica, Centro de Informatica</td>
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<td>9:00AM</td>
<td>Kernel Based Fuzzy Ant Clustering with Partition Validity [FUZZ4117]</td>
<td>Yuhua Gu, Lawrence Hall</td>
<td>Univ. of South Florida, Univ. of South Florida</td>
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<td>9:20AM</td>
<td>Rule Visualization based on Multi-Dimensional Scaling [FUZZ4289]</td>
<td>Thomas Gabriel, Kilian Thiel, Michael Berthold</td>
<td>Konstanz Univ., Konstanz Univ., Konstanz Univ.</td>
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<td>9:40AM</td>
<td>Unsupervised Image Segmentation and Annotation for Content-Based Image Retrieval [FUZZ4479]</td>
<td>Hichem Frigui, Joshua Caudill</td>
<td>Univ. of Louisville, Univ. of Louisville</td>
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<td>MonAM-8</td>
<td>SS-59: Fuzzy Control &amp; Systems Modeling: Recent Progresses &amp; Future Directions I Chair: Xiao-Jun Zeng</td>
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<td>8:00AM</td>
<td>Application of Competitive Clustering to Acquisition of Human Manipulation Skills Acquisition [FUZZ4402]</td>
<td>Shen Dong, Fazel Naghdy</td>
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<td>8:40AM</td>
<td>Learning for Hierarchical Fuzzy Systems Based on the Gradient-Descent Method [FUZZ4085]</td>
<td>Di Wang, Xiao-Jun Zeng, John A. Keane</td>
<td>Univ. of Manches, Univ. of Manches, Univ. of Manches</td>
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<td>9:00AM</td>
<td>A Novel Reinforcement Learning Approach for Automatic Generation of Fuzzy Inference Systems [FUZZ4023]</td>
<td>Meng Joo Er, Yi Zhou</td>
<td>Intelligent System Center, Intelligent System Center</td>
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<td>MonAM-9</td>
<td>SS-Z7: Constrained Real Parameter Optimization I Chair: Ponnuthurai Suganthan</td>
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<td>8:00AM</td>
<td>Introduction by Session Chairs</td>
<td>Ponnuthurai Suganthan</td>
<td>Nanyang Tech. Univ.</td>
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<td>8:20AM</td>
<td>Constrained Optimization by the epsilon Constrained Differential Evolution with Gradient-Based Mutation and Feasible Elites. [CEC7470]</td>
<td>Tetsuyuki Takahama, Sakai Setsuko</td>
<td>Hiroshima City Univ., Hiroshima Shudo Univ.</td>
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</table>
8:40AM Dynamic Multi-Swarm Particle Swarm Optimizer with a Novel Constraint-Handling Mechanism [CEC7489]
J. J. Liang Nanyang Tech. Univ.
P. N. Suganthan Nanyang Tech. Univ.

9:00AM Self-adaptive Differential Evolution Algorithm for Constrained Real-Parameter Optimization [CEC7569]
V. L. Huang Nanyang Tech. Univ.
A. K. Qin Nanyang Tech. Univ.
P. N. Suganthan Nanyang Tech. Univ.

9:00AM Optimized Memory Assignment for DSPs [CEC7004]
Gary Grewal Univ. of Guelph
Stelian Coros Univ. of Guelph
Dilip Banerji Univ. of Guelph
Andrew Morton Univ. of Waterloo
Mario Ventresca Univ. of Waterloo

9:20AM Distributed Optimization using Ant Colony Optimization in a Concrete Delivery Supply [CEC7335]
Jorge Faria Instituto Superior Tecnico
Carlos Silva Instituto Superior Tecnico
Joao Sousa Instituto Superior Tecnico
Michele Surico Politecnico di Bari
Uzay Kaymak Erasmus Univ. of Rotterdam

9:40AM Genetic Algorithm to Optimize Fitness Function with Sampling Error and its Application to Financial Optimization Problem [CEC7593]
Masaru Tezuka Hitachi East Japan Solutions, Ltd.
Masaharu Munetomo Hokkaido Univ.
Kiyoshi Akama Hokkaido Univ.
Masahiro Hiji Hitachi East Japan Solutions, Ltd.

9:00AM Emergent Behavior, Population-based Search and Low-pass Filtering [CEC7617]
Riccardo Poli Univ. of Essex
Wright Alden Univ. of Montana
McPhee Nicholas Univ. of Minnesota
Langdon William Univ. of Essex

8:20AM An Updated Taxonomy of Evolutionary Computation Problems Using Graph-based Evolutionary Algorithms [CEC7275]
Daniel Ashlock Univ. of Guelph
Kenneth Bryden Iowa State Univ.
Steven Corons Iowa State Univ.
Justin Schonfeld Iowa State Univ.

8:40AM Weighted Multirecombination Evolution Strategies on the Parabolic Ridge [CEC7479]
Dirk V. Arnold Dalhousie Univ.
Darren MacDonald Univ. of Ottawa

9:00AM Kolmogorov Complexity Optimization and Hardness [CEC7663]
Yossi Borenstein Univ. of Essex
Riccardo Poli Univ. of Essex

9:20AM Analysis of Scalable Parallel Evolutionary Algorithms [CEC7501]
Jun He Univ. of Birmingham
Xin Yao Univ. of Birmingham
9:40AM  
**Benefits of a Periodic Selection Event in Evolutionary Strategy Algorithms** [CEC7604]  
John Nicholson  North Carolina State Univ.  
Mark White  North Carolina State Univ.  

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8:00AM  
**A Novel Genetic Algorithm for Evolvable Hardware** [CEC7116]  
Emanuele Stomeo  Brunel Univ.  
Tatiana Kalganova  Brunel Univ.  
Cyrille Lambert  Brunel Univ.  

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8:20AM  
**Enhancement of the Variable-Length-Transmission-Line Design Method for Multi-point Optimization** [CEC7766]  
Naoki Koizumi  Univ. of Miyazaki  
Ikuo Yoshihara  Univ. of Miyazaki  
Kunihiro Yamamori  Univ. of Miyazaki  
Moritoshi Yasunaga  Univ. of Tsukuba  

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8:40AM  
**Trusted Evolutionary Algorithm** [CEC7584]  
Dudy Lim  Nanyang Tech. Univ.  
Yew-Soon Ong  Nanyang Tech. Univ.  
Yaouch Jiu  Honda Research Inst. Europe GmbH  
Bernhard Sendhoff  Honda Research Inst. Europe GmbH  

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9:00AM  
**Evacuation Planning via Evolutionary Computation** [CEC7416]  
Aaron Garrett  Auburn Univ.  
Brian Carnahan  Auburn Univ.  
Rani Muhi  Auburn Univ.  
Jerry Davis  Auburn Univ.  
Gerry Dozier  Auburn Univ.  
Michael P. SanSoucie  NASA Marshall Space Flight Center  
Patrick V. Hull  NASA Marshall Space Flight Center  
Michael L. Tinker  NASA Marshall Space Flight Center  

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9:20AM  
**Integrating Aesthetic Criteria with Evolutionary Processes in Complex, Free-form Design - an Initial Investigation** [CEC7656]  
Azahar Machwe  ACDDM Group, CEMS, UWE  
Ian Parmee  ACDDM Group, CEMS, UWE  

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MonAM-12  
**SS-Zi: Evolutionary Design**  
Chair:  Ian Parmee  

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8:00AM  
**Can Artificial Life Emerge in a Network of Interacting Agents?** [FUZZ4366]  
Venu Murthy  Australian National Univ.  
Ed Krishnamurthy  Australian National Univ.  

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8:20AM  
**A Goal-oriented Approach to Goal Selection and Action Selection** [FUZZ4215]  
Zhiqi Shen  Nanyang Tech. Univ.  
Chunyan Miao  Nanyang Tech. Univ.  
Yuan Miao  Victoria Univ.  
Xuehong Tao  Nanyang Tech. Univ.  
Robert Gay  Nanyang Tech. Univ.  

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8:40AM  
**The Role of Spiking Neurons for Visual Perception of a Partner Robot** [FUZZ4284]  
Naoyuki Kubota  Tokyo Metropolitan Univ.  
Kenichiro Nishida  Tokyo Metropolitan Univ.  

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9:00AM  
**Cross-reference Detection Algorithm for the Real Surveillance Systems Based-on Fuzzy Corresponding Map** [FUZZ4177]  
Masatoshi Makino  Tokyo Inst. of Tech.  
Yutaka Hatakeyama  Tokyo Inst. of Tech.  
Kaoru Hirota  Tokyo Inst. of Tech.  

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<td><strong>Reinforcement Learning of Agent with a Staged View in Distance and</strong></td>
<td>Grand Ballroom</td>
<td>David B. Fogel</td>
<td>Tadayoshi Yamamura, Motohide Umano, Kazuhsa Seta (Osaka Prefecture Univ.)</td>
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<td><strong>Direction for the Pursuit Problem [FUZZ4514]</strong></td>
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<td>9:40AM</td>
<td><strong>Learning by Switching Knowledge Representations—Limiting the</strong></td>
<td>Gulf Islands BCD</td>
<td>Akira Hirose</td>
<td>Yuji Matsumoto, Motohide Umano, Masahiro Tomaru, Kazuhsa Seta (Osaka Prefecture Univ.)</td>
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<td><strong>Number of Stored Data [FUZZ4524]</strong></td>
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<td>8:00AM</td>
<td><strong>Fuzzy Ranking of Financial Statements for Fraud Detection</strong></td>
<td>Port McNeill</td>
<td>Jorge Casillas</td>
<td>Wei Chai, Bethany Hoogs, Benjamin Verschueren (Electric Global Research)</td>
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<td>[FUZZ4300]</td>
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<td>8:20AM</td>
<td><strong>Credibility Based Fuzzy Portfolio Selection [FUZZ4545]</strong></td>
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<td>Xiaoxia Huang (Univ. of Sci. and Tech.)</td>
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<td>8:40AM</td>
<td><strong>Knowledge Extraction from Fuzzy Data for Estimating Consumer</strong></td>
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<td>Alaa Sheta (Electronics Research Inst.)</td>
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<td><strong>Behavior Models [FUZZ4483]</strong></td>
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<td>9:00AM</td>
<td><strong>Software Effort Estimation and Stock Market Prediction Using</strong></td>
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<td>Luciano Stefanini, Maria Letizia Guerra, Laerte Sorini (Univ. of Urbino)</td>
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<td><strong>Takagi-Sugeno Fuzzy Models [FUZZ4045]</strong></td>
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<td>9:20AM</td>
<td><strong>A Parameterization of Fuzzy Numbers for Fuzzy Calculus and</strong></td>
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<td>Luciano Stefanini, Maria Letizia Guerra, Laerte Sorini (Univ. of Urbino)</td>
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<td><strong>Application to the Fuzzy Black-Scholes Option Pricing</strong></td>
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<td>10:30AM</td>
<td><strong>WCCI Plenary Talk, Monday</strong></td>
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<td><strong>Confabulation Consensus = Intelligence</strong></td>
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<td>1:00PM</td>
<td><strong>A Study on Learning with a Quantum Neural Network</strong></td>
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<td>Mitsunaga Kinjo, Shigeo Sato, Koji Nakajima (Tohoku Univ.)</td>
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<td>[IJCNN1618]</td>
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<td>1:20PM</td>
<td><strong>Energy Spectrum of Quantum Associative Memories</strong></td>
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<td>Gerasimos Rigatos (Industrial Systems Inst.)</td>
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<td>[IJCNN1007]</td>
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<td>1:40PM</td>
<td><strong>Models of Self-Correlation Type Complex-Valued Associative</strong></td>
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<td>Yasuaki Kuroe, Yuriko Taniguchi (Kyoto Inst. of Tech.)</td>
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<td><strong>Memories and Their Performance Comparison [IJCNN1910]</strong></td>
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<td><strong>Fundamental Properties of Quaternionic Hopfield Neural Network</strong></td>
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<td>Teijiro Isokawa, Haruhiko Nishimura, Kamiura Naotake, Nobuyuki Matsui (Univ. of Hyogo)</td>
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<td>2:20PM</td>
<td><strong>Qubit Inspired Neural Network Towards Its Practical Applications</strong></td>
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<td>Katsuhiro Mori, Teijiro Isokawa, Noriaki Kouda, Nobuyuki Matsui (Univ. of Hyogo)</td>
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<td>[IJCNN1873]</td>
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<td>2:40PM</td>
<td><strong>Interpolation and Learning in Quadratic Neural Networks</strong></td>
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<td>George Georgiou (California State Univ.)</td>
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<td>[IJCNN2079]</td>
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<td>1:00PM</td>
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<td>Reinforcement Learning Theory II</td>
<td>Chair: Dan Ventura</td>
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<td>Opposition-Based Q (lambda) Algorithm [IJCNN1697]</td>
<td>Maryam Shokri Univ. of Waterloo Hamid R. Tizhoosh Univ. of Waterloo Mohamed Kamel Univ. of Waterloo</td>
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<td>Learning Using Dynamical Regime Identification and Synchronization [IJCNN1800]</td>
<td>Nicolas Brodu Concordia Univ.</td>
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<td>MonMM-4</td>
<td>Support Vector Machines &amp; Kernel Methods I</td>
<td>Chairs: Shigeo Abe &amp; Palaniswami Marimuthu</td>
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<td>Implementing Multi-class Classifiers by One-class Classification Methods [IJCNN1695]</td>
<td>Tao Ban Kobe Univ. Shigeo Abe Kobe Univ.</td>
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<td>MonMM-3</td>
<td>Neuroscience &amp; Computational Neuroscience I</td>
<td>Chair: Andrew P Paplinski</td>
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An Evaluation of Discrete Support Vector Machines for Cost-sensitive Learning [IJCNN2086]
Stefan Lessmann  Univ. of Hamburg
Sven F. Crone  Univ. of Lancaster
Robert Stahlbock  Univ. of Hamburg
Nikolaus Zacher  Univ. of Hamburg

2:40PM
Convergence Proof of a Sequential Minimal Optimization Algorithm for Support Vector Regression [IJCNN1809]
Jun Guo  Kyushu Univ.
Norikazu Takahashi  Kyushu Univ.
Tetsuo Nishi  Waseda Univ.

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MonMM-5
SS-Sf: Neurodynamics of Higher-Level Cognitive Behavior I
Chairs: Robert Kozma & Leonid Perlovsky

1:00PM
Metastability in the Brain [IJCNN2105]
J. A. Scott Kelso  Center For Complex Systems & Brain Sci.s
Emmanuelle Tognoli  Center For Complex Systems & Brain Sci.s

1:20PM
Exploration of relations between many-body field theory and the nonlinear brain dynamics that underlies cognitive behavior [IJCNN1115]
Walter Freeman  Univ. of California,Berkeley
Giuseppe Vitiello  Univ. of Salerno

1:40PM
Neural Dynamic Logic of Consciousness: the Knowledge Instinct [IJCNN1158]
Leonid Perlovsky  Air Force Research Lab.

2:00PM
Top-Down Cortical Influences in Visual Expectation [IJCNN2138]
Steven L. Bressler  Florida Atlantic Univ.
C. G. Richter  Univ. of Florida
Y. Chen  Univ. of Florida
M. Ding  Univ. of Florida

2:20PM
SS Panel I
Robert Kozma  Univ. of Memphis
Leonid Perlovsky  Air Force Research Lab.
Walter Freeman  Univ. of California,Berkeley
Emmanuelle Tognoli  Center For Complex Systems & Brain Sci.
Steven L. Bressler  Florida Atlantic Univ.
John Taylor  Univ. of Memphis

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2:40PM
Sf Panel II
Robert Kozma  Univ. of Memphis
Leonid Perlovsky  Air Force Research Lab.
Walter Freeman  Univ. of California,Berkeley
Emmanuelle Tognoli  Center For Complex Systems & Brain Sci.
Steven L. Bressler  Florida Atlantic Univ.
John Taylor  Univ. of Memphis

Parksville

MonMM-6
SS-S4: Computational Intelligence Based on Lattice Theory-Modeling II
Chairs: Vassilis Kaburlasos & Gerhard Ritter

1:00PM
Noise Masking for Pattern Recall Using a Single Lattice Matrix Auto-Associative Memory [FUZZ4487]
Gonzalo Urcid  Instituto Nac de Astro, Optica y Elec.
Gerhard X. Ritter  Univ. of Florida

1:20PM
Granular Auto-regressive Moving Average (grARMA) Model for Predicting a Distribution from Other Distributions. Real-world Applications [FUZZ4052]
Vassilis G. Kaburlasos  Tech. Educational Inst. of Kavala
Achilleas Christoforidis  Tech. Educational Inst. of Kavala

1:40PM
Generalized Lattices Express Parallel Distributed Concept Learning [FUZZ4316]
Michael Healy  Univ. of New Mexico
Thomas Caudell  Univ. of New Mexico

2:00PM
Recall of Patterns Using Morphological and Certain Fuzzy Morphological Associative Memories with Applications in Classification and Prediction [FUZZ4303]
Peter Sussner  State Univ. of Campinas
Marcos Eduardo Valle  State Univ. of Campinas

2:20PM
Valuations on Lattices and their Application to Information Theory [FUZZ4347]
Kevin Knuth  Univ. at Albany

2:40PM
Convex Coordinates Based on Lattice Independent Sets as Pattern Features [FUZZ4466]
Manuel Granra  Universidad del Pais Vasco
Ramon Moreno  Universidad del Pais Vasco
Francisco Albizuri  Universidad del Pais Vasco
MonMM-7
Fuzzy Clustering II
Chair: Hisao Ishibuchi

1:00PM
A Modified Fuzzy K-means Clustering using Expectation Maximization [FUZZ4211]
Sara Nasser  Univ. of Nevada Reno
Rawan Alkhaldi  Univ. of Nevada Reno
Gregory Vert  Univ. of Nevada Reno

1:20PM
Adaptive Silhouette Extraction in Dynamic Environments Using Fuzzy Logic [FUZZ4485]
Xi Chen  Univ. of Missouri
Zhihai (Henry) He  Univ. of Missouri
James Keller  Univ. of Missouri
Derek Anderson  Univ. of Missouri
Marjorie Skubic  Univ. of Missouri

1:40PM
An Online Fuzzy Approach to the Structural Analysis of Handwritten Mathematical Expressions [FUZZ4275]
Ray Genoe  Univ. College Dublin
John A. Fitzgerald  Univ. College Dublin
Tahar Kechadi  Univ. College Dublin

2:00PM
A Cost-based Fuzzy Rule-based System for Pattern Classification Problems [FUZZ4522]
Tomoharu Nakashima  Osaka Prefecture Univ.
Yasuuyuki Yokota  Osaka Prefecture Univ.
Gerald Schaefer  Nottingham Trent Univ.
Hisao Ishibuchi  Osaka Prefecture Univ.

2:20PM
Fuzzy Object Localization Based on Directional (and Distance) Information [FUZZ4422]
Xin Wang  Univ. of Guelph
JingBo Ni  Univ. of Guelph
Pascal Matsakis  Univ. of Guelph

2:40PM
Fuzzy Subspace Clustering Algorithm and Applications to Blind Signal Separation [FUZZ4510]
Pando Georgiev  Univ. of Cincinnati
Anca Ralescu  Univ. of Cincinnati
Dan Ralescu  Univ. of Cincinnati

MonMM-8
SS-S9: Fuzzy Control & Systems Modeling: Recent Progresses & Future Directions II
Chair: Gang Feng

1:00PM
Fuzzy Neural Identification by Online Clustering with Application on Crude Oil Blending [FUZZ4154]
Wen Yu  Cinvestav-ipn
Xiaoou Li  Cinvestav-ipn
2:00PM
**PESO+ for Constrained Optimization [CEC7513]**
Angel Munoz-Zavala  Centro de Investigacion en Matematicas (CIMAT)
Arturo Hernandez-Aguirre  Centro de Investigacion en Matematicas (CIMAT)
Enrique Villa-Diharce  Centro de Investigacion en Matematicas (CIMAT)
Salvador Botello-Rionda  Centro de Investigacion en Matematicas (CIMAT)

2:20PM
**A Population-based, Parent Centric Procedure for Constrained Real-parameter Optimization [CEC7708]**
Ankur Sinha  Indian Inst. of Tech.
Aravind Srinivasan  Indian Inst. of Tech.
Kalyanmoy Deb  Indian Inst. of Tech.

2:40PM
**A Self Adaptive Penalty Function Based Algorithm for Constrained Optimization [CEC7058]**
Biruk Tessema  Oklahoma State Univ.
Gary Yen  Oklahoma State Univ.

1:00PM
**MonMM-10**
**Evolving Learning Systems**
Chair: Graham Kendall
**Evolving a Learning Machine by Genetic Programming [CEC7161]**
Eva Alfaro-Cid  Instituto Tecnologico de Informatica
Ken Sharman  Instituto Tecnologico de Informatica
Anna I. Esparcia-Alcazar  Instituto Tecnologico de Informatica

1:20PM
**MonMM-11**
**Evolutionary Computation Theory II**
Chair: Alberto Moraglio
**Why Simulation-based Approaches with Combined Fitness are a Good Approach for Mining Spaces of Turing-equivalent functions [CEC7618]**
Olivier Teytaud  Universite Paris-Sud

1:40PM
**Changes in Prisoner’s Dilemma Strategies over Evolutionary Time with Different Population Sizes [CEC7310]**
Wendy Ashlock  Roseheart Biomath
Daniel Ashlock  Univ. of Guelph

2:00PM
**MonMM-12**
**Evolutionary Design**
Chair: Gwenn Volkert
**On Nonlinear Fitness Functions for Ranking-based Selection [CEC7437]**
Vincius Silva  Universidade Federal de Minas Gerais
Andre da Cruz  Universidade Federal de Minas Gerais
Eduardo Carrano  Universidade Federal de Minas Gerais
Frederico Guimaraes  Universidade Federal de Minas Gerais
Takahashi Ricardo  Universidade Federal de Minas Gerais

2:20PM
**A Bivariate Marginal Distribution Genetic Model [CEC7016]**
Marco Carpentieri  Universita’ di Salerno

2:40PM
**Using Very Small Population Sizes in Genetic Programming [CEC7326]**
Wendy Ashlock  Roseheart Biomath

1:00PM
**MonMM-13**
**Evolutionary Algorithms [CEC7404]**
Chair: Gwenn Volkert
**A New Multi-criteria Mechatronic Design Methodology Using Nicheing Genetic Algorithm [CEC7509]**
Saeed Behbahani  UBC
Clarence De Silva  UBC

1:20PM
**Improving Design Diversity Using Graph Based Evolutionary Algorithms [CEC7404]**
Steven Corns  Iowa State Univ.
Daniel Ashlock  Univ. of Guelph
Douglas McCorkle  Iowa State Univ.
Mark Bryden  Iowa State Univ.
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<tr>
<td>1:40PM</td>
<td>A Representation for Genetic-Algorithm-based Multiprocessor Task Scheduling [CEC7385]</td>
<td>Mehdi Salmani Jelodar (Univ. of Tehran), Najmeh Fakhraie (Univ. of Tehran), Faez Montazeri (Univ. of Tehran), S. Mehdi Fakhraie (Univ. of Tehran), Majid Nili Ahmadabadi (Univ. of Tehran)</td>
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<td>2:00PM</td>
<td>The Stag Hunt: A Vehicle for Evolutionary Cooperation [CEC7195]</td>
<td>Matthew Nokleby (Brigham Young Univ.), Wynn Stirling (Brigham Young Univ.)</td>
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<td>2:40PM</td>
<td>An Incremental-evolutionary Approach for Learning Deterministic Finite Automata [CEC7777]</td>
<td>Jonatan Gomez (Universidad Nacional de Colombia)</td>
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<td>1:00PM</td>
<td>SS-S2: Biometrics: Algorithms, Architectures &amp; Applications I</td>
<td>Yuheng Zhang &amp; Qinghan Xiao</td>
<td>Port Hardy</td>
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<td>1:00PM-2:00PM</td>
<td>An Overview of Biometrics I</td>
<td>Dean Barry (Public Safety &amp; Emergency Preparedness, Canada)</td>
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<td>2:00PM</td>
<td>An Optimized Approach for Fingerprint Binarization [IJCNN1051]</td>
<td>Yuheng Zhang (McGill Univ.), Qinghan Xiao (Defence Research &amp; Development Ottawa)</td>
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<td>1:00PM</td>
<td>Evolutionary Intelligent Agents</td>
<td>Chair: Luigi Barone</td>
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<td>1:40PM</td>
<td>Biologically Inspired Evolutionary Agent Systems in Dynamic Environments [CEC7276]</td>
<td>Ki-Won Yeom (Korea (South))Yeom, Ji-Hyung Park (Korea (South))Yeom</td>
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<td>An Immune-based Multilayered Cognitive Model for Autonomous Navigation [CEC7725]</td>
<td>Diego Romero (National Univ. of Colombia), Fernando Nino (National Univ. of Colombia)</td>
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<td>1:00PM</td>
<td>The Ersatz Brain Project: Neural Inspiration, Cognitive Application [IJCNN1237]</td>
<td>James Anderson (Brown Univ.), Paul Allopenna (Aptima, Inc.)</td>
<td>Port McNeill</td>
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1:20PM
The Mechanism of Thought [IJCNN1680]
Robert Hecht-Nielsen  Univ. of California

1:40PM
Constraints on the Design Process for Systems with Human Level Intelligence [IJCNN1862]
Andrew Coward  Australian national Univ.

2:00PM
Computational Creativity [IJCNN1754]
Wlodzislaw Duch  DI NCU

2:20PM
Computational Assessment of the 'Magic' of Human Cognition [IJCNN2035]
Alexei Samsonovich  George Mason Univ.
Giorgio Ascoli  George Mason Univ.
Kenneth De Jong  George Mason Univ.

2:40PM
Patterns, Hypergraphs and Embodied General Intelligence [IJCNN1348]
Ben Goertzel  Virginia Tech.

3:15PM
Improvements of the Traffic Signal Control by Complex-valued Hopfield [IJCNN1899]
Ikuko Nishikawa  Ritsumeikan Univ.
Takeshi Iritani  Ritsumeikan Univ.
Kazutoshi Sakakibara  Ritsumeikan Univ.

3:35PM
Contrast Functions for Non-circular and Circular Sources Separation in Complex-valued ICA [IJCNN1132]
Zhe Chen  RIKEN Brain Sci. Inst.
Jinwen Ma  RIKEN Brain Sci. Inst.

3:55PM
Multilayer Neural Network based on Multi-valued Neurons and the Blur Identification Problem [IJCNN1222]
Igor Aizenberg  Texas A & M Univ.
Dmitriy Paliy  Tampere Univ. of Tech.
Jaakko Astola  Tampere Univ. of Tech.

4:15PM
Snake in Phase Domain: A Method for Boundary Detection of Objects in Phase Images [IJCNN1757]
Andriyan Bayu Suksmono  Institut Teknologi Bandung
Astri Handayani  Institut Teknologi Bandung
Akira Hirose  Univ. of Tokyo

4:35PM
Artificial Neural Networks Using Complex Numbers and Phase Encoded Weights--Electronic and Optical Implementations [IJCNN1573]
Howard Michel  Univ. of Massachussetts Dartmouth
Abdul Awwal  Lawrence Livermore National Lab.
David Rancour  Univ. of Massachussetts Dartmouth

4:55PM
Holographic Three-dimensional Movie Generation with Frame Interpolation Using Coherent Neural Networks [IJCNN1818]
Akira Hirose  Univ. of Tokyo
Tomoaki Higo  Univ. of Tokyo
Ken Tanizawa  Univ. of Tokyo

MonPM-1
SS-S3: Complex-Valued Neural Networks II
Chair: Akira Hirose

3:15PM
Improvements of the Traffic Signal Control by Complex-valued Hopfield [IJCNN1899]
Ikuko Nishikawa  Ritsumeikan Univ.
Takeshi Iritani  Ritsumeikan Univ.
Kazutoshi Sakakibara  Ritsumeikan Univ.

3:35PM
Cellular SRN Trained by Extended Kalman Filter Shows Promise for ADP [IJCNN1390]
Roman Ilin  Univ. of Memphis
Robert Kozma  Univ. of Memphis
Paul Werbos  National Sci. Foundation

3:55PM
A Reinforcement Learning Framework for Medical Image Segmentation [IJCNN1968]
Farhang Sahba  Univ. of Waterloo
Hamid R. Tizhoosh  Univ. of Waterloo
Magdy M. A. Salama  Univ. of Waterloo

4:15PM
Automotive Engine Torque and Air-fuel Ratio Control Using Dual Heuristic Dynamic Programming [IJCNN1175]
Hossein Javaherian  General Motors R & D
Derong Liu  Univ. of Illinois
Kovalenko Olesia  Univ. of Illinois

4:35PM
Artificial Neural Networks Simulation of Learning of Auditory Equivalence Classes for Vowels [IJCNN2097]
Jan L. Eriksson  Univ. of Lausanne
Alessandro E.P. Villa  Univ. Joseph Fourier Grenoble1

4:55PM
Reward Adjustment Reinforcement Learning for Risk-averse Asset Allocation [IJCNN1248]
Jian Li  CUHK
Laiwan Chan  CUHK
Junior Ballroom B

**MonPM-3**

**Neuroscience & Computational Neuroscience II**

Chair: Jose Principe

**3:15PM**

*NARX Neural Networks for Dynamical Modelling of fMRI Data* [*IJCNN1181*]

Huainen Luo  National Univ. of Singapore
Sadasivan Puthusserypady  National Univ. of Singapore

**3:35PM**

*Clustered Neural Dynamics Identify Motifs for Chemotaxis in Caenorhabditis Elegans* [*IJCNN2011*]

Nathan Dunn  Univ of Oregon
Jon Pierce-Shimomura  Ernest Gallo Research Center, UCSF
John Conery  Univ of Oregon
Shawn Lockery  Univ of Oregon

**3:55PM**

*Motor Control-learning Model for Reaching Movements* [*IJCNN2069*]

Hiroyuki Kambara  Tokyo Inst. of Tech.
Kyoungsik Kim  Tokyo Inst. of Tech.
Duk Shin  Tokyo Inst. of Tech.
Makoto Sato  Tokyo Inst. of Tech.
Yasuharu Koike  Tokyo Inst. of Tech.

4:15PM

*About Biologically Plausible Trajectory Generators* [*IJCNN1309*]

Thierry Vieville  INRIA

4:35PM

*Shaping Realistic Neuronal Morphologies: An Evolutionary Computation Method* [*IJCNN1627*]

Benjamin Torben-Nielsen  Univ. Maastricht
Karl Tuyls  Univ. Maastricht
Eric Postma  Univ. Maastricht

4:55PM

*Modeling of Synchronized Burst in Dissociated Cortical Tissue: An Exploration of Parameter Space* [*IJCNN1973*]

II Park  Univ. of Florida
Dongming Xu  Univ. of Florida
Thomas DeMarse  Univ. of Florida
Jose Principe  Univ. of Florida

Junior Ballroom C

**MonPM-4**

**Support Vector Machines & Kernel Methods II**

Chairs: Thomas Trappenberg & Alessandro Zorat

**3:15PM**

*Support Vector Machine with Fuzzy Decision-making for Real-world Data Classification* [*IJCNN1409*]

Boyang Li  Waseda Univ.
Jinglu Hu  Waseda Univ.
Kotaro Hirasawa  Waseda Univ.
Pu Sun  ETAS Inc.
Marko Kenneth  ETAS Inc.

**3:35PM**

*Regularized Least Squares Fuzzy Support Vector Regression for Time Series Forecasting* [*IJCNN1250*]

Prof. Jayadeva  Indian Inst. of Tech.
Reshma Khemchandani  Indian Inst. of Tech.
Suresh Chandra  Indian Inst. of Tech.

**3:55PM**

*Pattern Selection for Support Vector Regression Based on Sparseness and Variability* [*IJCNN1482*]

Jiyoung Sun  Woori bank
Sungzoon Cho  Seoul National Univ.

4:15PM

*Wavelet-based Relevance Vector Machines for Stock Index Forecasting* [*IJCNN1746*]

Shian-Chang Huang  Natl Changhua Univ. of Education
Tung-Kuang Wu  Natl Changhua Univ. of Education

4:35PM

*A Heuristic for Free Parameter Optimization with Support Vector Machines* [*IJCNN1359*]

Matthew Boardman  Dalhousie Univ.
Thomas Trappenberg  Dalhousie Univ.

4:55PM

*FPGA Implementation of Support Vector Machines with Pseudo-Logarithmic Number Representation* [*IJCNN1825*]

Andrea Boni  Univ. of Trento
Alessandro Zorat  Univ. of Trento

Junior Ballroom D

**MonPM-5**

**SS-Sf: Neurodynamics of Higher-Level Cognitive Behavior II**

Chairs: Robert Kozma & Leonid Perlovsky

**3:15PM**

*Modeling the Evolution of Decision Rules in the Human Brain* [*IJCNN1927*]

Daniel Levine  Univ. of Texas at Arlington

**3:35PM**

*Influence of Criticality on 1/f Spectral Characteristics of Cortical Neuron Populations* [*IJCNN2090*]

Robert Kozma  Univ. of Memphis
3:55PM

**How to Prevent Spurious Data in a Chaotic Brain** [IJCNN1385]

Colin Molter  
DEI Lab. - RIKEN BSI

Utku Salihoglu  
IRIDIA - CoDE - ULB

Hugues Bersini  
IRIDIA - CoDE - ULB

4:15PM

**Fragmented Basins of Attraction of Recursive Processing Elements in Associative Neural Networks and its Impact on Pattern Recovery Performance** [IJCNN2119]

Emilio Del-Moral-Hernandez  
Univ. of Sao Paulo

4:35PM

**Application of Novel Chaotic Neural Networks to Mandarin Digital Speech Recognition** [IJCNN1790]

Jin Zhang  
Zhejiang Univ.

Guang Li  
National Lab. of Industrial Control Tech.

Walter J. Freeman  
Univ. of California

4:55PM

**A Fully CMOS Low-cost Chaotic Neural Network** [IJCNN1199]

Jose Luis Rossello  
Balearic Islands Univ.

Sebastia Bota  
Balearic Islands Univ.

Vicens Canals  
Balearic Islands Univ.

Ivan De Paul  
Balearic Islands Univ.

Jaume Segura  
Balearic Islands Univ.

———

**GFAM: A Genetic Algorithm Optimization of Fuzzy ARTMAP** [FUZZ4242]

Ahmad Al-Dairaseh  
Univ. of Central Florida

Michael Georgiopoulos  
Univ. of Central Florida

Annie Wu  
Univ. of Central Florida

Georgios Anagnostopoulos  
Florida Inst. of Tech.

Masoomreh Mollahasemi  
Univ. of Central Florida

3:55PM

**Improving the Performance of FLN by Using Similarity Measures and Evolutionary Algorithms** [FUZZ4112]

Al Cripps  
Middle Tennessee Univ.

Chisira Petey  
Middle Tennessee Univ.

Ngiep Nguyen  
Middle Tennessee Univ.

3:55PM

**Orthonormal Basis Lattice Neural Networks** [FUZZ4484]

Angelos Barmpoutis  
Univ. of Florida

Gerhard Ritter  
Univ. of Florida

4:15PM

**Application of Fuzzy Lattice Neurocomputing (FLN) for Environmental Data Estimation** [FUZZ4142]

Vassilios Petridis  
Aristotle Univ. of Thessaloniki

Vassilis Syrris  
Aristotle Univ. of Thessaloniki

John Theocharis  
Aristotle Univ. of Thessaloniki

4:35PM

**Aggregation of Fuzzy Classifiers Using Coupled Map Lattices** [FUZZ4518]

Jonatan Gomez  
Universidad Nacional de Colombia

Elizabeth Leon  
Universidad Nacional de Colombia

4:55PM

**Fuzzy Rule Interpolation Matlab Toolbox - FRI Toolbox** [FUZZ4265]

Zsolt Csaba Johanyak  
Kecskemet Univ. of Applied Sci.

Domonkos Tikk  
Budapest Univ. of Tech. & Economics

Szilveszter Kovacs  
Univ. of Miskolc, Hungary

Kok Wai Wong  
Murdoch Univ.

———

**MonPM-6**

SS-S4: Computational Intelligence Based on Lattice Theory-Applications III

Chairs: Vassilis Kaburlasos & Michael Georgiopoulos

3:15PM

**Efficient Fuzzy Cognitive Modeling for Unstructured Information** [FUZZ4290]

Kok Wai Wong  
Murdoch Univ.

Tamas Gedeon  
Australia National Univ.

Laszlo Koczy  
Budapest Univ. of Tech. & Economics

3:35PM

**Classifying Very Large Data Sets with Minimum Enclosing Ball Based Support Vector Machine** [FUZZ4531]

Bo Jin  
Georgia State Univ.

Yan-Qing Zhang  
Georgia State Univ.

3:55PM

**Decomposition of Contingency Table as Tensor Product** [FUZZ4393]

Shusaku Tsumoto  
Shimane Univ.

Shoji Hirano  
Shimane Univ.

4:15PM

**Grid-enabled Automatic Web Page Classification** [FUZZ4501]

Seema Metikurke  
Georgia State Univ.

Vijay Vaishnavi  
Georgia State Univ.

Art Vandenberg  
Georgia State Univ.

Lei Li  
Georgia State Univ.

4:35PM

**Roughness Bounds in Set-oriented Rough Set Operations** [FUZZ4027]

Yingjie Yang  
De Montfort Univ.

Robert John  
De Montfort Univ.

4:55PM

**Naive Bayes Modeling with Proper Smoothing for Information Extraction** [FUZZ4496]

Zhenmei Gu  
Univ. of Waterloo

Nick Cercone  
Dalhousie University
## TECHNICAL PROGRAM LISTING

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<td>3:15PM</td>
<td>MonPM-8</td>
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<td>J. M. C. Sousa</td>
<td><strong>Classification</strong></td>
<td>Maria Alessandra Torsello, Univ. of Bari</td>
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<td>A Meta-Classification Framework [FUZZ4465]</td>
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<td>Anna Maria Fanelli, Univ. of Bari</td>
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<td>Ciro Castiello, Univ. of Bari</td>
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<td><strong>Nonlinear Classification by Linear Programming with Signed Fuzzy Measures [FUZZ4359]</strong></td>
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<td>Nian Yan, Univ. of Nebraska</td>
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<td><strong>Similarity-driven Defuzzification of Fuzzy Tuples for Entropy-based Data Classification Purposes [FUZZ4525]</strong></td>
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<td>Rafał Angryk, Montana State Univ.</td>
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<td>4:15PM</td>
<td><strong>Fuzzy Entropy-assisted Fuzzy-Rough Feature Selection [FUZZ4108]</strong></td>
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<td>Neil Mac Parthalain, Univ. of Wales</td>
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<td>Richard Jensen, Univ. of Wales</td>
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<td>Qiang Shen, Univ. of Wales</td>
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<td>4:35PM</td>
<td><strong>Bayes-like Classifier with Fuzzy Likelihood [FUZZ4386]</strong></td>
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<td>Shounak Roychowdhury, Oracle USA</td>
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<td>4:55PM</td>
<td><strong>A New Feature Selection Criterion for Fuzzy Classification [FUZZ4272]</strong></td>
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<td>R. J. Almeida, Univ. of Lisbon</td>
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<td>C. A. Silva, Univ. of Lisbon</td>
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<td>J. M. C. Sousa, Univ. of Lisbon</td>
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<th>Thomas Runarsson</th>
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<td><strong>CEC Competition Program</strong></td>
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<td>3:15PM</td>
<td>MonPM-10</td>
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<td><strong>Particle Swarm &amp; Differential Evolution</strong></td>
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<td><strong>The Latest vs. Averaged Recent Experience: Which Better Guides a PSO Algorithm? [CEC7632]</strong></td>
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<th>Pavilion Ballroom D</th>
<th>Xiaoding Li</th>
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<td><strong>Pointwise Regularity of Fitness Landscapes and the Performance of a Simple ES [CEC7699]</strong></td>
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<td><strong>Bottom Up Approach for Deriving the Redundancy of Structured Genetic Algorithms [CEC7597]</strong></td>
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<td>4:15PM</td>
<td>Product Geometric Crossover for the Sudoku Puzzle [CEC7638]</td>
<td>Alberto Moraglio, Julian Togelius, Simon Lucas</td>
<td>Univ. of Essex</td>
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<td>4:55PM</td>
<td>Estimating the Degree of Neutrality in Fitness Landscapes by the Nei's Standard Genetic [CEC7634]</td>
<td>Yoshiaki Katada, Kazuhiro Ohkura</td>
<td>Setsunan Un., Hiroshima Univ.</td>
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<td>4:55PM</td>
<td>Analysis of Dental Images Using Artificial Immune Systems [CEC7679]</td>
<td>Zhou Ji, Dipankar Dasgupta, Zhiling Yang, Hongmei Teng</td>
<td>St. Jude Children's Research Hospital, Univ. of Memphis, Yinchuan Stomatological Hospital, Univ. of Memphis</td>
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<td>4:55PM</td>
<td>Advances in 3D-Based Face Recognition [IJCNN1674]</td>
<td>Robert Paquet, Abbas Kouzani</td>
<td>Univ. of Newcastle, Univ. of Newcastle</td>
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<td>4:55PM</td>
<td>Synthetic Biometrics: A Survey [IJCNN1722]</td>
<td>Svetlana Yanushkevich</td>
<td>Univ. of Calgary</td>
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<td>Off-line Signature Verification using the Enhanced Modified Direction Feature and Neural-based Classification [IJCNN1726]</td>
<td>Stephane Armand, Michael Blumenstein, Vallipuram Muthukumarasamy</td>
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<td>4:55PM</td>
<td>Resolution and Distortion Compensation Based on Sensor Evaluation for Interoperable Fingerprint Recognition [IJCNN1863]</td>
<td>Youngchan Han, Jungwoon Nam, Nohjun Park, Hakil Kim</td>
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<td>4:55PM</td>
<td>Neural and Statistical Classification to Families of Bio-sequences [IJCNN1857]</td>
<td>Mosaab Daoud, Stefan C. Kremer</td>
<td>Univ. of Guelph, Univ. of Guelph</td>
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**Fuzzy Neural Networks**

Chairs: Dipti Srinivasan & Woei Wan Tan

**3:15PM**

*GenSoFNN-Yager: A Novel Hippocampus-like Learning Memory System Realizing Yager Inference [IJCNN1356]*

- Richard Jayadi Oentaryo, Nanyang Tech. Univ.
- Michel Pasquier, Nanyang Tech. Univ.

**3:35PM**

*Hybrid Neuro-Fuzzy Technique for Automated Traffic Incident Detection [IJCNN2052]*

- Dipti Srinivasan, National Univ. of Singapore
- Saptak Sanyal, National Univ. of Singapore
- Woei Wan Tan, National Univ. of Singapore

**3:55PM**

*Experiments with Safe micro-ARTMAP and Comparisons to Other ART Networks [IJCNN1010]*

- Mingyu Zhong, Univ. of Central Florida
- Bryan Rosander, Univ. of Central Florida
- Michael Georgiopoulos, Univ. of Central Florida
- Georgios Anagnostopoulos, Florida Inst. of Tech.
- Mansooreh Mollaghasemi, Univ. of Central Florida
- Richie Samuel, Univ. of Central Florida

**4:15PM**

*Optimization of ANFIS with Applications in Machine Defect Severity Classification [IJCNN1397]*

- Shuangwen Sheng, Univ. of Massachusetts Amherst
- Robert Gao, Univ. of Massachusetts Amherst

**4:35PM**

*A Novel and Efficient Neuro-Fuzzy Classifier for Medical Diagnosis [IJCNN1621]*

- Chin-Ming Hong, National Taiwan Normal Univ.
- Chih-Ming Chen, National Hualien Univ. of Education
- Shyuan-Yi Chen, National Taiwan Normal Univ.
- Chao-Yen Huang, National Chiao Tung Univ.

**4:55PM**

*Rough Set-based Neuro-fuzzy System [IJCNN1087]*

- Kaikeng Ang, NTU
- Chai Quek, NTU

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**MonPM-15**

**PANEL: A Roadmap to Human Level Intelligence**

Chairs: Wlodek Duch & Nikola Kasabov

**5:30PM-6:30PM**

**IJCNN Invited Talk, Monday**

*Emergence of Semantics from Multimedia Databases* Erkki Oja

Chair: Lipo Wang

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**FUZZ-IEEE Invited Talk, Monday**

*Computation with Information Described in Natural Language: Generalized Constraint-Based* Lotfi Zadeh

Chair: Piero Bonissone

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**CEC Invited Talk, Monday**

*Reputation in Iterative Prisoner’s Dilemma* Xin Yao

Chair: Simon Lucas

---

**Plenary Poster Session, Monday**

**IJCNN Posters**

Chair: Ling Guan

**1001**

*Statistical Mechanics of Online Learning for Ensemble Teachers [IJCNN1082]*

- Seiji Miyoshi, Kobe City College of Tech.
- Masato Okada, Univ. of Tokyo

**1002**

*Training Radial Basis Functions by Gradient Descent [IJCNN1951]*

- Mercedes Fernandez-Redondo, Universitat Jaume I
- Joaquin Torres-Sospedia, Universitat Jaume I
- Carlos Hernandez-Espinosa, Universitat Jaume I

**1003**

*Hybrid Neural Network [IJCNN1896]*

- Sana’a Al-Sayegh, Palestine - Gaza

**1004**

*Using a Sensitivity Measure to Improve Training Accuracy and Convergence for Madalines [IJCNN1334]*

- Yingfeng Wang, Hohai Univ.
- Xiaojin Zeng, Hohai Univ.

**1005**

*A Comparison Between Recursive Neural Networks and Graph Neural Networks [IJCNN1749]*

- Vincenzo Di Massa, Univ. Siena
- Gabriele Monfardini, Univ. Siena
- Lorenzo Sarti, Univ. Siena
- Franco Scarselli, Univ. Siena
- Marco Maggini, Univ. Siena

**1006**

*A New Supervised Clustering Algorithm Based on Min-Max Modular Network with Gaussian-Zero-Crossing Functions [IJCNN1304]*

- Jing Li, Shanghai Jiao Tong Univ.
- Bao-Liang Lu, Shanghai Jiao Tong Univ.
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<td>1007</td>
<td>Hamiltonian Neural Networks Based Classifiers and Mappings</td>
<td>Wieslaw Sienko, Dariusz Zamojski</td>
<td>Gdynia Maritime Univ.</td>
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<td>Localized Support Vector Machines for Classification</td>
<td>Ming Dong, Jin Wu</td>
<td>Wayne State Univ.</td>
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<td>1009</td>
<td>Fast Neural Implementation of PCA for Face Detection</td>
<td>Hazem El-bakry, Qiangfu Zhao</td>
<td>Student, Japan</td>
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<td>1010</td>
<td>An Improved Minibrain That Learns Through Both Positive and Negative Feedback</td>
<td>Chee Phua, Alan Blair</td>
<td>National ICT Australia</td>
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<td>Prototype Based Outlier Detection</td>
<td>Seungtaek Kim, Sungzoon Cho</td>
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<td>A Novel Sequential Learning Algorithm for RBF Networks and Its Application to Dynamic System Identification</td>
<td>Jianchuan Yin, Fang Dong, Nini Wang</td>
<td>Dalian Maritime Univ.</td>
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<td>A Comparison between Soft Computing and Statistic Approaches to Identify Plasma Columns in Tokamak Reactors</td>
<td>Salvatore Calcagno, Antonino Greco, Francesco Carlo Morabito, Mario Versaci</td>
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<td>Juha Karhunen, Tomas Ukkonen</td>
<td>Helsinki Univ. of Tech.</td>
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<td>Small-catchment Flood Forecasting and Drainage Network Extraction Using Computational Intelligence</td>
<td>Erika Coppola, Barbara Tomassetti, Marco Verdeccia, Frank Marzano, Guido Visconti</td>
<td>Universita dell Aq</td>
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<td>Direct Estimation of Fault Tolerance of Feedforward Neural Networks in Pattern Recognition</td>
<td>Huilan Jiang, Tangsheng Liu, Mengbin Wang</td>
<td>Tianjin Univ.</td>
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<td>Structural Mapping with Identical Elements Neural Network</td>
<td>Jianghua Bao, Paul Munro</td>
<td>Univ. of Pittsburgh</td>
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<td>Electrical Eng. Dept., India</td>
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<td>1021</td>
<td>A Note on Conjugate Natural Gradient Training of Multilayer Perceptrons [IJCNN1578]</td>
<td>Ana Gonzalez, Jose Dorronsoro</td>
<td>Universidad Autonoma de Madrid</td>
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<td>A Neural Network Approach to Bearing Health Assessment</td>
<td>Robert Gao, Changting Wang, Ruqiang Yan, Arnaz Malhi</td>
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<td>Justin Bray, Brijesh Verma, Xue Li, Wade He</td>
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<td>A Variable Node-to-Node-Link Neural Network and Its Application to Hand-Written Recognition [IJCNN1207]</td>
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<td>Cuimei Bo, Zhiquan Wang, Jinguo Lin, Shi Zhang, Guangming Zhang</td>
<td>Nanjing Univ. of Tech., Nanjing Univ. of Tech., Nanjing Univ. of Tech., Nanjing Univ. of Tech.</td>
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<td>Elham Bavafa, M. J. Yazdanpanah</td>
<td>School of ECE, Iran, School of ECE, Iran</td>
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<td>Haruna Matsushita, Yoshifumi Nishio</td>
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<td>A Parallel Implementation of a Growing SOM Promoting Independent Neural Networks over Distributed Input Space [IJCNN1555]</td>
<td>John Hammond, Daniel MacLean, Iren Valova</td>
<td>Univ. of Massachusetts Dartmouth, Univ. of Massachusetts Dartmouth, Univ. of Massachusetts Dartmouth</td>
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Yaw-Hwang Chen  Assistant Professor, Taiwan
Chun-Min Wen Assistant  Graduate Student, Taiwan
Chun-Da Tu Graduate  Graduate Student, Taiwan
Kwang-Jow Gan  Professor, Taiwan

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Ahmad Banakar  Elec. Eng. Dept., India
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QiuLin Ding  Nanjing Univ. of Aeronautics & Astronauti

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De-Ling Liu  Jet Propulsion Lab/Caltech
Isik Kanik  Jet Propulsion Lab/Caltech

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Dar-Jen Chang  Univ. of Louisville
Yuan-Yan Chen  PNN technologies Inc.

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Bartlomiej Ufnalski  Warsaw Univ. of Tech.

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Jimin Chen  National Center of Laser Tech.
Yuhong Cheng  Beijing Univ.

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Evren Guner  Middle East Tech. Univ.
Canan Ozgen  Middle East Tech. Univ.
Ugur Halici  Middle East Tech. Univ.

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Rene V. Mayorga  Univ. of Regina

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Kazushi Ikeda  Kyoto Univ.

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Jose Johnson  Univ. of the Andes
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1078 Building Neural Network Ensembles using Genetic Programming [IJCNN1310]
Ulf Johansson    Univ. of Boras
Tuve Loefstroem   Univ. of Boras & Univ. of Skoevde
Rikard Koenig    Univ. of Boras & Univ. of Skoevde
Lars Niklasson    Univ. of Skoevde

1079 Pruning in Ordered Regression Bagging Ensembles [IJCNN1575]
Daniel Hernandez-Lobato Universidad Autonoma de Madrid
Gonzalo Martinez-Munoz Universidad Autonoma de Madrid
Alberto Suarez     Universidad Autonoma de Madrid

1080 On Combining Backpropagation with Boosting [IJCNN1634]
Marcin Korytkowski Czestochowa Univ. of Tech.
Leszek Rutkowski   Czestochowa Univ. of Tech.
Rafal Scherer      Czestochowa Univ. of Tech.

1081 Designing a Multilayer Feedforward Ensembles with Cross Validated Boosting Algorithm [IJCNN1458]
Joaquin Torres-Sospedra Universitat Jaume I
Carlos Hernandez-Espinosa Universitat Jaume I
Mercedes Fernandez-Redondo Universitat Jaume I

1082 Designing a New Multilayer Feedforward Modular Network for Classification Problems [IJCNN1816]
Joaquin Torres-Sospedra Universitat Jaume I
Carlos Hernandez-Espinosa Universitat Jaume I
Mercedes Fernandez-Redondo Universitat Jaume I

1083 Evolutionary Search for Interesting Behavior of Neural Network Ensembles [IJCNN1675]
Pavel Kordik       FEE, CTU in Prague
Jan Saidl         FEE, CTU in Prague
Mirosлав Snorek    FEE, CTU in Prague

1084 Variable Input Neural Network Ensembles in Generating Synthetic Well Logs [IJCNN1837]
Dingding Chen      Halliburton Energy Services
John Quirein      Halliburton Energy Services
Harry Smith       Halliburton Energy Services
Syed Hamid        Halliburton Energy Services
Jeff Grable       Halliburton Energy Services
Skip Reed         Halliburton Energy Services

1085 Neural-Network-based Metalearning for Distributed Text Information Retrieval [IJCNN1092]
Kin Keung Lai     City Univ. of Hong Kong
Lean Yu           City Univ. of Hong Kong
Shouyang Wang    Chinese Academy of Sci.s, China
Wei Huang         Huazhong Univ. of Sci. & Tech.

1086 Using Accuracy and Diversity to Select Classifiers to Build Ensembles [IJCNN1498]
Rodrigo G F Soares  Federal Univ. of Rio Grande do Norte
Aliandre Santana  Federal Univ. of Rio Grande do Norte
Anne Canuto      Federal Univ. of Rio Grande do Norte
Marcilio Souto   Federal Univ. of Rio Grande do Norte

1087 A Simple Design for High Speed Normalized Neural Networks Implemented in the Frequency Domain for Pattern Detection [IJCNN1484]
Hazem El-bakry    Student, Egypt

1088 Fast Co-operative Modular Neural Processors for Human Face Detection [IJCNN1346]
Hazem El-bakry    Student, Egypt

1089 Kernel Fisher Discriminants and Kernel nearest Neighbor Classifiers: A Comparative Study for Large-scale Learning Problems [IJCNN1526]
Daqi Gao         East China Univ. of Sci. & Tech.
Jie Li           East China Univ. of Sci. & Tech.

1090 Visualization of High Dimensional Data Using an Automated 3D Star Co-ordinate System [IJCNN1364]
Jahangheer Shaik Univ. of Memphis
Mohammed Yeasin  Univ. of Memphis

1091 Extending Manifold Learning Algorithms by Neural Networks [IJCNN1139]
Jiayan Jiang      Fudan Univ.
Liming Zhang      Fudan Univ.

1092 Improving Classification Precision by Implicit Kernels Motivated by Manifold Learning [IJCNN1280]
Yuexian Hou      Tianjin Univ.
Jingyi Wu        Tianjin Univ.
Pilian He         Tianjin Univ.

1093 Recursive Feature Addition for Gene Selection [IJCNN2067]
Qingzhong Liu    New Mexico Tech.
Andrew H. Sung   New Mexico Tech.

1094 Mutual-information Noise Benefits in Brownian Models of Continuous and Spiking Neurons [IJCNN2064]
Bart Kosko       Univ. of Southern California
Ashok Patel      Univ. of Southern California
1095
Classifying Single-trial ERPs from Visual and Frontal Cortex during Free Viewing [IJCNN1804]
Akaysha Tang  Univ. of New Mexico
Matthew Sutherland  Univ. of New Mexico
McKinney Christopher  Univ. of New Mexico
Jing-Yu Liu  Univ. of New Mexico
Yan Wang  Univ. of New Mexico
Lucas C. Parra  City College of New York,
Adam D. Gerson  Columbia University
Paul Sajda  Columbia University

1096
Spatially Adaptive Kernels for Adaptive Spatial Filtering of fMRI Data [IJCNN1716]
Vahid Taimouri  Univ. of Tehran
Gholam-Ali Hossein-Zadeh  Univ. of Tehran
Hamid Soltanian-Zadeh  Univ. of Tehran

1097
Fixed and Random Effect Analysis of Multi-subject Spatial Activation Maps in Wavelet Domain [IJCNN1717]
Mohammad Soleymani  Univ. of Tehran
Gholam-Ali Hossein-Zadeh  Univ. of Tehran
Hamid Soltanian-Zadeh  Univ. of Tehran

1098
Hard-limiter Neuron based Turing Machine Simulation with Constant Time Read/Write Operation [IJCNN1292]
Narendra Chaudhari  Nanyang Tech. Univ.
Nirmal Dagdee  Shri G.S. Inst. of Tech. & Sci.
Meng Joo Er  Nanyang Tech. Univ.

1099
Diagnosis of Power Transformer Using Fuzzy Clustering and Radial Basis Function Neural Network [IJCNN1436]
Jong-pil Lee  Chungbuk National Univ.
Dae-jong Lee  Chungbuk National Univ.
Pyeong-shik Ji  Chungju National Univ.
Jae-yoon Lim  Daeduk College
S. S. Kim  Chungbuk Nat’l University

1100
Automated Detection of Color Non-uniformity Defects in TFT-LCD [IJCNN1889]
Hong-Dar Lin  Chaoyang Univ. of Tech.
Chih-Hao Chien  Chaoyang Univ. of Tech.

1101
A Region of Interest Based Image Segmentation Method Using a Biologically Motivated Selective Attention Model [IJCNN1453]
Seung-Hyun Lee  Kyungpook National Univ.
Jaekyoung Moon  Kyungpook National Univ.
Minho Lee  Kyungpook National Univ.

1102
A Neural Network Model for the Decision-Making Process Based on ANP [IJCNN1305]
Satoshi Matsuoka  Nihon Univ.
Plenary Poster Session, Monday
FUZZ-IEEE Posters

Chair: Ling Guan

4001
Adaptive Critic Neuro-fuzzy Control of Two-wheel Vehicle [FUZZ4002]
Wei-Song Lin National Taiwan Univ.
Glorious Tien National Taiwan Univ.
Chia-Hsiang Tu National Taiwan Univ.

4002
A New Fuzzy Autopilot for Way-point Tracking Control of Ships [FUZZ4049]
Jin Cheng China Academy of Sci.
Jianqiang Yi China Academy of Sci.
Dongbin Zhao China Academy of Sci.

4003
Intelligent Control for DC-DC Power Converter with Recurrent Fuzzy Neural Network Approach [FUZZ4063]
Chun-Fei Hsu National Chiao-Tung Univ.
Ts-Tian Lee National Taipei Univ. of Tech
Yao-Wei Wen Yuan-Ze Univ.
Fu-Shan Ding Yuan-Ze Univ.

4004
Adaptive Fuzzy Controller Design for Time-delay Systems with Input Containing Sector Nonlinearities and Dead-zone [FUZZ4070]
Chung-Chun Kung Tatung Univ.
Ti-Hung Chen National Taipei Univ.

4005
Piecewise H-infinity Controller Design for a Class of T-S Fuzzy Systems with Time Delay [FUZZ4071]
Ti-Hung Chen LHU
Chung-Chun Kung Tatung Univ.

4006
Fuzzy Potential Energy for a Map Approach to Robot navigation [FUZZ4074]
Kuo-Yang Tu National Kaohsiung Univ. of Sci. & Tech.

4007
Design and Implement of the Self-dynamic Controller for Two-wheel Transporter [FUZZ4079]
Chih-Hui Chiu Ching-Yun Univ.
Ya-Fu Peng Ching-Yun Univ.

4008
Robust Stabilization of Fuzzy Control for Nonlinear Multiple Time-Delay Interconnected Systems via Neural-Network-based Approach [FUZZ4087]
Feng-Hsiag Hsiao National Univ. of Tainan
Yew-Wen Liang National Chiao-Tung Univ.
Sheng-Dong Xu National Chiao-Tung Univ.
Chia-Yen Lin National Univ. of Tainan
Zhi-Ren Tsai Chang Gung Univ.

4009
Robust Adaptive Fuzzy Sliding Mode Control for a Class of Uncertain Nonlinear Systems with Unknown Dead-Zone [FUZZ4124]
Chiang-Cheng Chiang Tatung Univ.
Chih-Cheng Yang Tatung Univ.

4010
Decentralized Robust Fuzzy-Model-Based Control of Uncertain Large-Scale Systems with Input Delay [FUZZ4132]
Chiang-Cheng Chiang Tatung Univ.

4011
Decoupled Adaptive Type-2 Fuzzy Controller (DAT2FC) Design for Nonlinear TORA Systems [FUZZ4305]
Ching-Hung Lee Yuan-Ze Univ.
Hung-Yi Pan Yuan-Ze Univ.
Hua-Hsiang Chang Yuan-Ze Univ.
Bor-Hang Wang Yuan-Ze Univ.

4012
On-line Learning Rules for Type-2 Fuzzy Controller [FUZZ4343]
Woei Wan Tan National Univ. of Singapore
Danesh Hasan Kamal National Univ. of Singapore

4013
Robust Automatic Parking without Odometry Using Enhanced Fuzzy Logic Controller [FUZZ4379]
Young-Woo Ryu Pohang Univ. of Sci. & Tech.
Se-Young Oh Pohang Univ. of Sci. & Tech.
SamYong Kim Pohang Univ. of Sci. & Tech.

4014
Intelligent Tracking Control for Duffing Oscillator Using a Self-Organizing Fuzzy Neural Network [FUZZ4064]
Te-Yu Chen Yuan-Ze Univ.
Chun-Fei Hsu National Chiao-Tung Univ.
Ts-Tian Lee National Taipei Univ. of Tech.
Fu-Shan Ding Yuan-Ze Univ.
Chih-Hui Chiu Ching-Yun Univ.

7:30PM-9:30PM Grand Ballroom
Plenary Poster Session, Monday
CEC Posters

Chair: Ling Guan

7001
A Novel Binary Variable Representation for Genetic and Evolutionary Algorithms [CEC7070]
Yong Liang Chinese Univ. of Hong Kong
Kwong-Sak Leung Chinese Univ. of Hong Kong
Kin-Hong Lee Chinese Univ. of Hong Kong

7002
Exponential Evolutionary Programming without Self-adaptive Strategy Parameter [CEC7163]
Hiroyuki Narihisa Okayama Univ. of Sci.
Takahiro Taniguchi Okayama Univ. of Sci.
Mayumi Ohta Okayama Univ. of Sci.
Kengo Katayama Okayama Univ. of Sci.
7003 Evolutionary Programming with Only Using Exponential Mutation [CEC7164]
Hiroyuki Narihisa Okayama Univ. of Sci.
Keiko Kohmoto Kinki Univ.
Takahiro Taniguchi Okayama Univ. of Sci.
Mayumi Ohta Okayama Univ. of Sci.
Kengo Katayama Okayama Univ. of Sci.

7004 Exploiting Landscape Information to Avoid Premature Convergence in Evolutionary Search [CEC7735]
Maumita Bhattacharya Charles Sturt Univ.

7005 Minimum Number of Generations Required for Convergence of Genetic Algorithms [CEC7221]
Matthew Gibbs Univ. of Adelaide
Holger Maier Univ. of Adelaide
Graeme Dandy Univ. of Adelaide
John Nixon United Water International

7006 A Dynamic Multi-objective Evolutionary Algorithm Based on an Orthogonal Design [CEC7067]
Guang Chen China Univ. of Geosci.
Sanyou Zeng China Univ. of Geosci.
Hui Shi China Univ. of Geosci.
Hugo de Garis Wuhan Univ.
Lihan Kang Wuhan Univ.
Liang ZHENG China Univ. of Geosci.
Lixin DING Wuhan Univ.

7007 Distributed Genetic Algorithm with Bi-coded Chromosomes and a New Evaluation Function for Features Selection [CEC7484]
Tarek M. Hamdani Research Group on Intelligent Machines
Adel M. Alimi Research Group on Intelligent Machines
Fakhri Karray Pattern Analysis and Machine Intelligence Resear

7008 Ant-Based Approach to the Quality Aware Application Service Partitioning in a Grid Environment [CEC7581]
Sharath Babu Musunoori Simula Research Lab.
Geir Horn Simula Research Lab.

7009 An Evolutionary Approach for Dynamic Reconfiguration in Heterogeneous Database Schemas [CEC7274]
Ki-Won Yeom Korea (South)Yeom
Ji-Hyung Park Korea (South)Yeom

7010 Evolving Musical Sequences with N-Gram Based Trainable Fitness Functions [CEC7765]
Man Yat Lo Univ. of Essex
Simon Lucas Univ. of Essex

7011 Evolving Letter Recognition with an Extended Analog Computer [CEC7771]
Matt Parker Indiana Univ.
Chen Zhang Indiana Univ.
Jonathan Mills Indiana Univ.
Bryce Himebaugh Indiana Univ.

7012 Neutrality and Gradualism: Encouraging Exploration and Exploitation Simultaneously with Binary Decision Diagrams [CEC7777]
Richard Downing Univ. of Birmingham

7013 Evolving NNTrees More Efficiently [CEC7695]
Hirotomo Hayashi Univ. of Aizu
Qiangfu Zhao Univ. of Aizu

7014 Aerodynamic Parameter Estimation Using Genetic Algorithms [CEC7080]
Yang Shi Univ. of Saskatchewan
Weiqi Qian Inst. of Computational Aerodynamics
Qing Wang Inst. of Computational Aerodynamics
Kaifeng He Inst. of Computational Aerodynamics

7015 Self-Organizing Swarm (SoSwarm): A Particle Swarm Algorithm for Unsupervised Learning [CEC7179]
Michael O’Neill Univ. College Dublin
Anthony Brabazon Univ. College Dublin

7016 A Self-controlled Genetic Algorithm for Reliable Communication Network Design [CEC7268]
Lin Lin Waseda Univ.
Mitsuo Gen Waseda Univ.

7017 Introducing Grammar Based Extensions for Grammatical Evolution. [CEC7621]
Miguel Nicolau Univ. of Limerick
Ian Dempsey Univ. College Dublin

7018 A Genetic Binary Particle Swarm Optimization Model [CEC7696]
Javad Sadri Concordia Univ.
Ching Y. Suen Concordia Univ.

7019 Dendritic Cells for Anomaly Detection [CEC7337]
Julie Greensmith Univ. of Nottingham
Jamie Twycross Univ. of Nottingham
Uwe Aickelin Univ. of Nottingham

7020 Simultaneous Perturbation Particle Swarm Optimization [CEC7113]
Yutaka Maeda Kansai Univ.
Toru Kuratani Kansai Univ.
7021  Cryptanalysis of Simple Substitution Ciphers Using Particle Swarm Optimization [CEC7035]
    Amr Youssef  Concordia univ.
    Mohammad Faisal Uddin  Concordia univ.

7022  DNA Encoding Method of Weight for Chinese Postman Problem [CEC7055]
    Aili Han  Shandong Univ.
    Daming Zhu  Shandong Univ.

7023  A Learning OCR System Using Short/Long-term Memory Approach and Hardware Implementation in FPGA [CEC7167]
    Ali Ahmadi  Hiroshima Univ.
    M. Arifin Ritonga  Hiroshima Univ.
    M. Anwarul Abedin  Hiroshima Univ.
    Hans Jurgen Mattausch  Hiroshima Univ.
    Tetsus Koide  Hiroshima Univ.

7024  Comparing Particle Swarm Optimization and Genetic Algorithms for Nonlinear Mapping [CEC7321]
    Auralia Edwards  Univ. of Pretoria
    Andries Engelbrecht  Univ. of Pretoria

7025  Learning Non-overlapping Rules A method Based on Functional Dependency Network and MDL Genetic Programming [CEC7373]
    Wing-Ho Shum  Chinese Univ. of Hong Kong
    Kwong-Sak Leung  Chinese Univ. of Hong Kong
    Man-Leung Wong  Lingnan Univ.

7026  Improving Metamodel-based Optimization of Water Distribution Systems with Local Search [CEC7222]
    Darren Broad  Univ. of Adelaide
    Graeme Dandy  Univ. of Adelaide
    Holger Maier  Univ. of Adelaide
    John Nixon  United Water International

7027  Two-staged Tabu Search for Floorplan Problem Using O-tree Representation [CEC7395]
    Hiroshi Ninomiya  Shonan Inst. of Tech.
    Kimihiko Numayama  Shizuoka Univ.
    Hideki Asai  Shizuoka Univ.

7028  A Genetic Algorithm for the Capacitated Minimum Spanning Tree [CEC7454]
    Estefane Lacerda  Universidade Federal do Rio Grande do Norte
    Manoel Medeiros, Jr  Universidade Federal do Rio Grande do Norte

7029  Multiobjective Optimal VAR Dispatch Using Strength Pareto Evolutionary Algorithm [CEC7498]
    Mohammad Abido  King fahd Univ. of Petroleum & Minerals

7030  Co-evolutionary Algorithm for Hierarchical Fuzzy Control of the Inverted Pendulum [CEC7299]
    Russel Stonier  Central Queensld Univ.
    Julius Zajaczkowski  Central Queensld Univ.

7031  Approximate Evolution Strategy Using Stochastic Ranking [CEC7592]
    Thomas Runarsson  Sci. Inst.

7032  New Perspectives for the Biclustering Problem [CEC7648]
    Fabricio O. de Franca  LBiC/FEEC/Unicamp
    George Bezerra  LBiC/FEEC/Unicamp
    Fernando Von Zuben  Unicamp

7033  Medical Data Mining Using Particle Swarm Optimization for Temporal Lobe Epilepsy [CEC7765]
    Mostafa Ghannad-Rezaie  Henry Ford Health Sys.
    Hamid Soltanian-Zadeh  Henry Ford Health Sys.
    Mohammad-Reza Siadat  Henry Ford Health Sys.
    Kost Elisevich  Henry Ford Health Sys.

7034  Co-Evolutionary Multi-agent System with Sexual Selection Mechanism for Multi-Objective Optimization [CEC7688]
    Rafal Drezewski  AGH Univ. of Sci. & Tech.
    Leszek Siwik  AGH Univ. of Sci. & Tech.

TueAM-1
Neural Hardware II

8:00AM  A Mobile Vision System with Reconfigurable Intelligent Agents [IJCNN1615]
    Yan Meng  Stevens Inst. of Tech.

8:20AM  Vector Quantization System Based on Scalar SOM/AND-OR Hybrid Network [IJCNN1297]
    Hiroomi Hikawa  Oita Univ.

8:40AM  AER Neuro-inspired Interface to Anthropomorphic Robotic Hand [IJCNN1467]
    Alejandro Linares-Barranco  Univ. of Seville
    Juan Luis Pedreno-Molina  Tech. Univ. of Cartagena
    Rafael Paz-Vicente  Univ. of Seville
    Javier Molina-Vilaplana  Tech. Univ. of Cartagena
    Gabriel Jimenez  Univ. of Seville
    J. López-Coronado  Tech. Univ. of Cartagena

9:00AM  Extraction of Phase Information Buried in Fluctuation of a Pulse-type Hardware Neuron Model Using STDP [IJCNN1909]
    Katsutoshi Saeki  Nihon Univ.
    Yugo Hayashi  Nihon Univ.
    Yoshifumi Sekine  Nihon Univ.
9:20AM
On the Design of a Low Power Compact Spiking Neuron Cell Based on Charge-coupled Synapses [IJCNN1470]
Yajie Chen  Univ. of Liverpool
Steve Hall  Univ. of Liverpool
Liam McDaid  Univ. of Ulster
Octavian Buiu  Univ. of Liverpool
Peter Kelly  Univ. of Ulster

9:40AM
Implementation of Artificial Neural Network for Real Time Applications Using Field Programmable Analog Arrays [IJCNN1171]
Puxuan Dong  North Carolina State Univ.
Griff Bilbro  North Carolina State Univ.
Mo-Yuen Chow  North Carolina State Univ.

9:40AM
Vector-valued Support Vector Regression [IJCNN1751]
Mark Brudnak  U.S. Army TARDEC

TueAM-3
SS-Sn: Modeling the Evolution & Acquisition of Language
Chairs:  Angelo Cangelosi, Leonid Perlovsky, & Jose Fontanari

8:00AM
Integrated Emotions, Cognition, and Language [IJCNN1055]
Leonid Perlovsky  Air Force Research Lab.

8:20AM
Language Acquisition and Symbol Grounding Transfer with Neural Networks and Cognitive Robots [IJCNN1323]
Angelo Cangelosi  Univ. of Plymouth
Emmanouil Hourtakis  Univ. of Plymouth
Vadim Tikhanoff  Univ. of Plymouth

8:40AM
Meaning Creation and Communication in a Community of Agents [IJCNN1349]
Jose Fontanari  Universidade de Sao Paulo
Leonid Perlovsky  Air Force Research Lab.

9:00AM
From Signaling to Word-combination, a Layered Approach [IJCNN1485]
Anastasios-Antonios Toulkeridis  Aristotle Univ. of Thessaloniki
Vassilios Petridis  Aristotle Univ. of Thessaloniki

9:20AM
Reassessing Combinatorial Productivity Exhibited by Simple Recurrent Networks in Language Acquisition [IJCNN1639]
Francis Wong  Chinese of Hong Kong
James Minett  Chinese of Hong Kong
William Wang  Chinese of Hong Kong

9:40AM
A Structured Context Model for Grammar Learning [IJCNN2096]
Nancy Chang  UC Berkeley
Eva Mok  UC Berkeley

TueAM-4
Applications of Support Vector Machines & Kernel Methods
Chairs:  Vasant Honavar & Eduardo Bayro-Corrochano

8:00AM
Comparing Kernels for Predicting Protein Binding Sites from Amino Acid Sequence [IJCNN1644]
Feihong Wu  Iowa State Univ.
Byron Olson  Iowa State Univ.
Drena Dobbs  Iowa State Univ.
Vasant Honavar  Iowa State Univ.
8:20AM
Highway Traffic Forecasting by Support Vector Regression Model with Tabu Search Algorithms [IJCNN1143]
Hong Wei-Chiang  Da-Yeh Univ.
Pai Ping-Feng  Chi Nan Univ.
Yang Shun-Lin  Da-Yeh Univ.
Theng Robert  Da-Yeh Univ.

8:40AM
Local Support Vector Regression for Financial Time Series Prediction [IJCNN1850]
Kaizhu Huang  Fujitsu Research & Devt. Center
Haiqin Yang  Titanium Tech. Ltd.
Irwin King  Chinese Univ. of Hong Kong
Michael R. Lyu  Chinese Univ. of Hong Kong

9:00AM
MIMO SVMs for 3D Object Classification [IJCNN1584]
Nancy Arana-Daniel  Unidad Guadalajara, Jalisco
Eduardo Bayro-Corrochano  Unidad Guadalajara, Jalisco

9:20AM
Kernel based Clustering and Vector Quantization for Speech Segmentation [IJCNN1829]
Satish D.S.  Indian Inst. of Tech. Madras
Chandra Sekhar C  Indian Inst. of Tech. Madras

9:40AM
Support Vector Clustering Applied to Digital Communications [IJCNN2014]
C.A.M. Lima  LBiC/FEEC/Unicamp
R. Ferrari  DSPCom/FEEC/Unicamp
H. Knidle  LBiC/FEEC/Unicamp
C. Junqueira  CTA/iae
R.R.F. Attux  DSPCom/FEEC/Unicamp
João Marcos T. Romano  DSPCom/FEEC/Unicamp
Fernando J. Von Zuben  LBiC/FEEC/Unicamp

8:00AM
Classification with Tree-based Ensembles Applied to the WCCI 2006 Performance Prediction Challenge Datasets [IJCNN1617]
Corinne Dahinden  ETH, Zurich

8:20AM
Model Selection: An Empirical Study on Two Kernel Classifiers [IJCNN2141]
Wei Chu  Columbia Univ.

9:00AM
SS-Se: Data Summarization I
Chair:  Marie-Jeanne Lesot

8:00AM
Summarization of Patient Groups Using the Fuzzy C-Means and Ontology Similarity Measures [FUZZ4418]
Mihail Popescu  Univ. of Missouri-Columbia
James Keller  Univ. of Missouri-Columbia

8:20AM
Data Summarisation by Typicality-based Clustering for Vectorial and Non Vectorial Data [FUZZ4446]
Marie-Jeanne Lesot  Otto-von-Guericke Univ. of Magdeburg
Rudolf Kruse  Otto-von-Guericke Univ. of Magdeburg

8:40AM
The Linguistic Weighted Average [FUZZ4040]
Dongrui Wu  Univ. of Southern California
Jerry Mendel  Univ. of Southern California
TECHNICAL PROGRAM LISTING

Pavilion Ballroom A

TueAM-7
SS-Si: Model & Algorithms for Fuzzy Clustering & Classification I
Chair:  Sadaaki Miyamoto

8:00AM
A Methodology for Extracting and Representing Actions in Texts [FUZZ4143]
Richard Khoury  Univ. of Waterloo
Fakhreddine Karray  Univ. of Waterloo
Mohamed Kamel  Univ. of Waterloo

8:20AM
Extracting Web User Profiles Using a Modified CARD Algorithm [FUZZ4331]
Shahram Rahimi  Southern Illinois Univ.
Lisa Gandy  Southern Illinois Univ.
Biduyt Gupta  Southern Illinois Univ.

8:40AM
Fusion Model and Human-Machine Collaborative Solution for Automated Sensory Inspection Systems [FUZZ4236]
Hiroshi Nakajima  OMRON Corporation
Hiroshi Tasaki  OMRON Corporation
Kazuto Kojitani  OMRON Corporation
Masaki Aroo  OMRON Corporation
Shigeyasu Kawaji  Kumamoto Univ.

9:00AM
Epileptic Seizure Detection Using Neural Fuzzy Networks [FUZZ4269]
Nasser Sadati  Professor, Iran
Hamid Reza Mohseni  Student, Iran
Arash Maghsoudi  Student, Iran

Pavilion Ballroom B

TueAM-8
SS-Sh: Intelligent & Optimal Control Applications I
Chair:  C.W. Tao

8:00AM
Fuzzy Optimization Control System and its Application in Ball Mill Pulverizing System [FUZZ4413]
Xiao-Feng Li  Guangdong Power Test and Research Inst.
Yu-Xing Zeng  Guangdong Univ. of Tech.
Jian Sun  Guangdong Univ. of Tech.

8:20AM
Analysis on Proper Clustering Structure Fuzzy Controllers [FUZZ4098]
Chih-Ching Hsiao  Kao Yuan Univ.
Shun-Feng Su  National Taipei Univ. of Tech.

8:40AM
A General Anti-swing Fuzzy Controller for an Overhead Crane with Hoisting [FUZZ4054]
Mohamed Trabia  University
Jamil Renno  Center for Intelligent Material Sys. & Stru.
Kamal Moustafa  United Ara

9:00AM
Decentralized Guaranteed Cost Control for Discrete-time Uncertain Large-scale Systems Using Fuzzy Control [FUZZ4340]
Gwo-Ruey Yu  National Ilan Univ.
C. W. Tao  National Ilan Univ.

9:20AM
Optimal Fuzzy Design for the Positioning Control of a DC Servomotor Using DSP Chips [FUZZ4253]
Umesh Pareek  NTPC Ltd.
Indra Narayan Kar  Indian Inst. of Tech.

Pavilion Ballroom C

TueAM-9
SS-Zc: Evolutionary Computation & Games I
Chair:  Alan Blair

8:00AM-8:40AM
Special Talk
David Fogel  Natural Selection Inc.

8:40AM
Evolution of Human-competitive Agents in Modern Computer Games [CEC7317]
Steffen Priesterjahn  Univ. of Paderborn
Oliver Kramer  Univ. of Paderborn
Alexander Weimer  International Graduate School (Paderborn)
Andreas Goebels  International Graduate School (Paderborn)

9:00AM
Flexible and Purposeful NPC Behaviors using Real-time Genetic Control [CEC7776]
Talib Hussain  BBN Tech.
Gordon Vidaver  BBN Tech.
9:40AM
**Learning Control for Xpilot Agents in the Core [CEC7226]**
Matt Parker Indiana Univ.
Gary Parker Connecticut College

TueAM-10
**SS-Z2: Swarm Intelligence I**
Chair: Xiaodong Li

8:00AM
**The Levy Particle Swarm [CEC7415]**
Toby Richer Goldsmiths College
Tim Blackwell Goldsmiths College

8:20AM
**Locating All the Global Minima Using Multi-species Particle Swarm Optimizer: The Inertia Weight and the Constriction Factor Variants [CEC7156]**
Masao Iwamatsu Musashi Inst. of Tech.

8:40AM
**An Empirical Study on the Settings of Control Coefficients in Particle Swarm Optimization [CEC7064]**
Ngai Ming Kwok Univ. of Tech.
Di Kai Liu Univ. of Tech.
Kay Chen Tan National Univ. of Singapore
Quang Phuc Ha Univ. of Tech.

9:00AM
**Can Ants Design Mechanical Engineering Systems? [CEC7072]**
Felipe Antonio Chegury Viana Federal Univ. of Uberlandia
Giovanni Iamin Kotinda Federal Univ. of Uberlandia
Domingos Alves Rade Federal Univ. of Uberlandia
Valder Steffen, Jr Federal Univ. of Uberlandia

9:20AM
**Swarm Intelligence for the Self-Organization of Wireless Sensor Network [CEC7068]**
Wang Rui Northwestern Polytechnical Univ.
Liang Yan Northwestern Polytechnical Univ.
Ye Gangqiang Northwestern Polytechnical Univ.
Lu Chaoxia Northwestern Polytechnical Univ.
Pan Quan Northwestern Polytechnical Univ.

9:40AM
**Enhancing the Robustness of a Speciation-based PSO [CEC7519]**
Stefan Bird RMIT Univ.
Xiaodong Li RMIT Univ.

TueAM-11
**Applications to Testing**
Chair: Giovanni Squillero

8:00AM
**Evolutionary Unit Testing of Object-oriented Software Using a Hybrid Evolutionary Algorithm [CEC7248]**
Stefan Wappler DaimlerChrysler AG
Joachim Wegener DaimlerChrysler AG

8:20AM
**An Evolutionary Methodology to Enhance Processor Software-based Diagnosis [CEC7365]**
Paolo Bernardi Politecnico di Torino
Ernesto Sanchez Politecnico di Torino
Massimiliano Schillaci Politecnico di Torino
Giovanni Squillero Politecnico di Torino
Matteo Sonza Reorda Politecnico di Torino

8:40AM
**Enhanced Test Program Compaction Using Genetic Programming [CEC7166]**
Ernesto Sanchez Politecnico di Torino
Massimiliano Schillaci Politecnico di Torino
Giovanni Squillero Politecnico di Torino

9:00AM
**Swarmed Neuro-Artificial Features from Vibration Data for Fault Detection and Isolation [CEC7009]**
Hiram Firpi Georgia Inst. of Tech.

9:20AM
**A Two-phase Genetic Algorithm for VLSI Test-vector Selection [CEC7388]**
Walid Ibrahim UAE Univ.
Amr Elchouemi UAE Univ.
Hoda Amer UAE Univ.

9:40AM
**Improving Evolutionary Real-time Testing by Seeding Structural Test Data [CEC7197]**
Marouane Tlili Daimler Chrysler AG, Software Tech.
Harmen Shamer Daimler Chrysler AG, Software Tech.
Stefan Wappler Daimler Chrysler AG, Software Tech.
Joachim Wegener Daimler Chrysler AG, Software Tech.

TueAM-12
**SS-Z9: Evolutionary Algorithms Based on Probabilistic Models**
Chair: Qingfu Zhang

8:00AM
**Combining Model-based and Genetics-based Offspring Generation for Multi-objective Optimization Using a Convergence Criterion [CEC7278]**
Aimin Zhou Univ. of Essex
Yaochu Jin Honda Research Inst. Europe GmbH
Qingfu Zhang Univ. of Essex
Bernhard Sendhoff Honda Research Inst. Europe
Edward Tsang Honda Research Inst. Europe
8:20AM
Learning Weighted Linguistic Fuzzy Rules with Estimation of Distribution Algorithms [CEC7541]
Luis de la Ossa  Univ. of Castilla-La Mancha
Jose A. Gamez  Univ. of Castilla-La Mancha
Jose M. Puerta  Univ. of Castilla-La Mancha

8:40AM
Solving the Ising Spin Glass Problem using a Bivariate EDA based on Markov Random Fields [CEC7193]
Siddhartha Shakya  Robert Gordon Univ.
John McCall  Robert Gordon Univ.
Deryck Brown  Robert Gordon Univ.

9:00AM
A Novel Hybrid Evolutionary Algorithm for Learning Bayesian Networks from Incomplete Data [CEC7237]
Yuan-Yuan Guo  China Uni. of Geosci.
Men-Leung Wong  China Uni. of Geosci.
Zhi-Hua Cai  Lingnan Univ.

9:20AM
Iterated Local Search with Guided Mutation [CEC7301]
Qingfu Zhang  Univ. of Essex
Jianyong Sun  Univ. of Birmingham

9:00AM
Reducing Human Fatigue in Interactive Evolutionary Computation Through Fuzzy Systems and Machine Learning Systems [FUZZ4426]
Raffi Kamalian  Kyushu Univ.
Eric Yeh  SRI International
Ying Zhang  UC Berkeley
Alice M. Agogino  UC Berkeley
Hideyuki Takagi  Kyushu Univ.

9:20AM
Structural Vibration Modeling Using a Neuro-Fuzzy Approach [FUZZ4195]
Farbod Khoshnoud  Univ. of British Columbia
Farhoud Khoshnoud  Brunel Univ.
Aloreza Sadeghi  Brunel Univ.
Ibrahim I. Esat  Brunel Univ.
Carlos E. Ventura  Univ. of British Columbia
Clarence W. de Silva  Univ. of British Columbia

9:40AM
Developing Credit Scoring Models with SOM and Fuzzy Rule Based k-NN Classifiers [FUZZ4240]
Arijit Laha  Inst. for Dev. & Res. in Banking Tech.

TueAM-13
Hybrid Systems Applications
Chair:  Ismail Burhan Turksen

8:00AM
A Fuzzy Neural JRRM in a Heterogeneous Scenario Supported by Prediction Strategies for Horizontal and Vertical Handovers [FUZZ4302]
Lorenza Giupponi  Universitat Politecnica de Catalunya
Ramon Agusti  Universitat Politecnica de Catalunya
Jordi Perez-Romero  Universitat Politecnica de Catalunya
Oriol Sallent  Universitat Politecnica de Catalunya

8:20AM
An Intelligent Agent-based System for Reduction of Bullwhip Effect in Supply Chains [FUZZ4162]
Mohammad Hossein Fazel Zarandi  Amirkabir Univ. of Tech.
Morteza Pourakbar  Amirkabir Univ. of Tech.
Ismail Burhan Turksen  Univ. of Toronto

8:40AM
Prediction of Failure in Pin-joints Using Hybrid Adaptive Neuro-Fuzzy Approach [FUZZ4527]
Shima Shirazi Kia  Univ. of the West of England
Siamak Noroozi  Univ. of the West of England
Brian Carse  Univ. of the West of England
John Vinney  Univ. of the West of England
Masoud Rabbani  Univ. of the West of England

8:20AM
On-line Estimation of Electric Power System Active Loads [IJCNN1941]
Ekrem Gursoy  Drexel Univ.
Dagmar Niebur  Drexel Univ.

8:20AM
Echo State Networks for Determining Harmonic Contributions from Nonlinear Loads [IJCNN1840]
Joy Mazumdar  Georgia Inst. of Tech.
Ganesh Venayagamoorthy  Univ. of Missouri - Rolla
Ronald Harley  Georgia Inst. of Tech.
Franklin Lambert  Georgia Inst. of Tech.

8:40AM
System-type Neural Network Architectures for Power Systems [IJCNN1407]
Kwang Y. Lee  Pennsylvania State Univ.

9:00AM
Sensorless ANN-based Speed Estimation of Synchronous Generators: Improved Performance through Physically Motivated Pre-filters [IJCNN1164]
Innocent Kamwa  Hydro-Quebec/IREQ
Baraboi Bogdan  Universite Laval
Rene Wamkeue  Universite du Quebec (UQAT)
9:20AM  

**Particle Swarm Optimization based Defensive Islanding of Large Scale Power System** [IJCNN1381]

- Wenxin Liu  Florida State Univ
- David Cartes  Florida State Univ
- Ganesh Venayagamoorthy  Univ. MO- Rolla

**Chair:** Port McNeill

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**TueAM-15**

**SS-Zm: Evolutionary Multi-Objective Optimization I**

**Chair:** Carlos Fonseca

8:00AM  

**Searching For Pareto-optimal Solutions Through Dimensionality Reduction for Certain Large-dimensional Multi-objective Optimization Problems** [CEC7034]

- Kalyanmoy Deb  Indian Inst. of Tech., Kanpur
- Dhish Saxena  Indian Inst. of Tech., Kanpur

8:20AM  

**A Quadratic Approximation-Based Local Search Procedure for Multiobjective Genetic Algorithms** [CEC7345]

- Elizabeth Wanner  Federal Univ. of Minas Gerais
- Frederico Guimaraes  Federal Univ. of Minas Gerais
- Ricardo Takahashi  Federal Univ. of Minas Gerais
- Peter Fleming  Univ. of Sheffield

8:40AM  

**Stochastic Evolutionary Multiobjective Environmental/Economic Dispatch** [CEC7261]

- Robert T. F. Ah King  Univ. of Mauritius
- Harry C. S. Rughooputh  Univ. of Mauritius
- Kalyanmoy Deb  Indian Inst. of Tech.

9:00AM  

**Fixture-scheduling for the Australian Football League using a Multi-objective Evolutionary Algorithm** [CEC7478]

- Luigi Barone  Univ. of Western Australia
- Lyndon While  Univ. of Western Australia
- Paul Hughes  Univ. of Western Australia
- Phillip Hingston  Edith Cowan Univ.

9:20AM  

**Preference Incorporation in Multi-objective Evolutionary Algorithms: A Survey** [CEC7729]

- Dipti Srinivasan  National Univ. of Singapore
- Lily Rachmawati  National Univ. of Singapore

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10:30AM-11:30AM  

**WCCI Plenary Talk, Tuesday**

**Computational Intelligence in Games**

**Chair:** Risto Mikkulainen

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**1:00PM**

**A Binaural Synthesis with Multiple Sound Sources Based on Spatial Features of Head-related Transfer Functions** [IJCNN1208]

- Pinaki Shankar Chanda  LG Soft India Pvt. Ltd.
- Sungjin Park  LG Mobile Handset R & D Center
- Tae Ik Kang  LG Mobile Handset R & D Center

1:20PM  

**Environmental Sound Classification Using Hybrid SVM/KNN Classifier and MPEG-7 Audio Low-level Descriptor** [IJCNN1344]

- Jia-Ching Wang  National Cheng Kung Univ.
- Jhing-Fa Wang  National Cheng Kung Univ.
- Wai-He Kuok  National Cheng Kung Univ.
- Cheng-Shu Hsu  National Cheng Kung Univ.

1:40PM  

**BER Performance Improvement of Biased PCC-OFDM with Neural Phase Rotator by Suppressing ICI** [IJCNN1318]

- Masaya Ohta  Osaka Prefecture Univ.
- Hideyuki Yamada  Osaka Prefecture Univ.
- Katsumi Yamashita  Osaka Prefecture Univ.

2:00PM  

**Adaptive Estimation for Spectral-temporal Characterization of Energetic Transient Events** [IJCNN1160]

- Ross Deming  Anteon Corporation
- Shawn Higbee  Air Force Research Lab.
- Derek Dwyer  Air Force Research Lab.
- Michael Welser  Air Force Research Lab.
- Leonid Perlovsky  Air Force Research Lab.

2:20PM  

**A DWT-based Robust Watermarking Scheme with Fuzzy ART** [IJCNN1943]

- Hung-Jen Wang  National Yunlin Univ. of Sci. & Tech.
- Chuan-Yu Chang  National Yunlin Univ. of Sci. & Tech.
- Sheng-Wen Pan  National Yunlin Univ. of Sci. & Tech.

2:40PM  

**Neutral Network-based Robust Adaptive Beamforming** [IJCNN1038]

- Xin Song  Northeastern Univ.
- Jinkuan Wang  Northeastern Univ.
- Yinghua Han  Northeastern Univ.
- Dan Tian  Northeastern Univ.
Tuesday MM-2

Junior Ballroom A

1:00PM

Supervised Learning II

Chairs: Lars Niklasson & Andreas Hansson

1:00PM

Using Segmentation to Control the Retrieval of Data

Andreas Hansson  Univ. of Skovde
Lars Niklasson  Univ. of Skovde

1:20PM

Efficient Classification of Multi-label and Imbalanced Data

Using Min-Max Modular Classifiers [IJCNN1354]

Ken Chen  Shanghai Jiao Tong Univ.
Bao-Liang Lu  Shanghai Jiao Tong Univ.
James Kwok  Hong Kong Univ. of Sci. & Tech.

1:40PM

The Generalization of the Recursive Deterministic Perception

[IJCNN1465]

David Elizondo  De Montfort Univ.
Ralph Birkenhead  De Montfort Univ.
Eric Taillard  EIVD, Yverdon

2:00PM

A Multi-layer ADaptive FUncion Neural Network

(MADFUNN) for Function Recognition [IJCNN1591]

Miao Kang  Leeds Metropolitan Univ.
Dominic Palmer-Brown  Univ. of East London

2:20PM

Supervised Information Maximization by Weighted Distance

[IJCNN1375]

Ryotaro Kamimura  Tokai Univ.

2:40PM

Backpropagation for Population-temporal Coded Spiking

Neural Networks [IJCNN1384]

Benjamin Schrauwen  Ghent Univ.
Jan Van Campenhout  Ghent Univ.

Tuesday MM-3

Junior Ballroom C

1:00PM

Data Mining & Knowledge Discovery

Chairs: Alessandro Sperduti & Franco Scarselli

1:00PM

A Self-Organising Map Approach for Clustering of XML Documents [IJCNN1558]

Francesca Trentini  Univ. of Siena
Markus Hagenbuchner  Univ. of Wollongong
Alessandro Sperduti  Univ. of Padova
Franco Scarselli  Univ. of Siena
Ah Chung Tsoi  Univ. of Monash

1:20PM

Cooperation-based Clustering for Profit-maximizing Organizational Design [IJCNN2056]

Nghia Tran  Brigham Young Univ.
Christophe Giraud-Carrier  Brigham Young Univ.
Kevin Seppi  Brigham Young Univ.
Sean Warnick  Brigham Young Univ.

1:40PM

Data Analysis and Confidence based on SVM Density Estimation [IJCNN1454]

Elsa Jordaan  Dow Benelux BV
Iryna Nishchenko  Eindhoven Univ. of Tech.

2:00PM

Predictive Random Graph Ranking on the Web [IJCNN1859]

Haixuan Yang  Chinese Univ. of Hong Kong
Irwin King  Chinese Univ. of Hong Kong
Michael R. Lyu  Chinese Univ. of Hong Kong

2:20PM

Greedy Rule Generation from Discrete Data and its Use in Neural Network Rule Extraction [IJCNN1216]

Koichi Odajima  Meiji Univ.
Yoichi Hayashi  Meiji Univ.
Rudy Setiono  National Univ. of Singapore

2:40PM

Using MLP to Determine Abiotic Factors Influencing the Establishment of Insect Pest Species [IJCNN1463]

Michael Watts  Lincoln Univ.
Susan Worner  Lincoln Univ.

Tuesday MM-4

Probabilistic & Information-Theoretic Methods

Junior Ballroom B

1:00PM

Nonlinear Component Analysis Based on Correntropy

[IJCNN2058]

Jian-Wu Xu  Univ. of Florida
Puskal Pokharel  Univ. of Florida
Antonio Paiva  Univ. of Florida
Jose C. Principe  Univ. of Florida

1:20PM

Nonlinear Component Analysis Based on Correntropy

[IJCNN1965]

Aysegul Gunduz  Univ. of Florida
Anant Hegde  Univ. of Florida
Jose Principe  Univ. of Florida
2:00PM
**Semi-Autonomous Neural Networks Differential Equation Solver [IJCNN1776]**
Jose Delpiano  Univ. of the Andes
Pablo Zegers  Univ. of the Andes

2:20PM
**Gap-Based Estimation: Choosing the Smoothing Parameters for Probabilistic and General Regression Neural Networks [IJCNN1235]**
Mingyu Zhong  Univ. of Central Florida
Dave Coggeshall  Univ. of Central Florida
Ehsan Ghaneie  Univ. of Central Florida
Thomas Pope  Univ. of Central Florida
Mark Rivera  Univ. of Central Florida

2:40PM
**Co-training Using RBF Nets and Different Feature Splits [IJCNN1466]**
Felix Feger  Otto-Friedrich-Universitat Bamberg
Irena Koprinska  Univ. of Sydney

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**TueMM-5**
**SS-S4: Model Selection**
Chair:  Isabelle Guyon

1:00PM
**Nonlinear Model Selection Based on the Modulus of Continuity [IJCNN1138]**
Imhoi Koo  KAIST
Rhee Kil  KAIST

1:20PM
**Semi-supervised Model Selection Based on Cross-Validation [IJCNN1382]**
Matti Kaariainen  Univ. of Helsinki

1:40PM
**New Formulation of SVM for Model Selection [IJCNN1398]**
Mathias Adankon  Univ. of Quebec
Mohamed Cheriet  Univ. of Quebec

2:00PM
**Common Subset Selection of Inputs in Multiresponse Regression [IJCNN1439]**
Timo Simila  Helsinki Univ. of Tech.
Jarkko Tikka  Helsinki Univ. of Tech.

2:20PM
**Breakdown Point of Model Selection When the Number of Variables Exceeds the Number of Observations [IJCNN1700]**
David Donoho  Stanford Univ.
Victoria Stodden  Stanford Univ.

2:40PM
**Model Selection via Bilevel Optimization [IJCNN2003]**
Kristin Bennett  Rensselaer Polytechnic Inst.
Jing Hu  Rensselaer Polytechnic Inst.
Xiaoyun Ji  Rensselaer Polytechnic Inst.
Gautam Kunapuli  Rensselaer Polytechnic Inst.
1:20PM
**Fuzzy K-nearest Neighbor and its Application to Recognize of the Driving Environment [FUZZ4223]**

Koji Toduka  
Univ. of Tsukuba  
Yasunori Endo  
Univ. of Tsukuba

1:40PM
**Generalized Fuzzy Cluster Loading Model [FUZZ4129]**

Mika Sato-Ilic  
Univ. of Tsukuba  
Toshiya Shijo  
Univ. of Tsukuba

2:00PM
**Kernelized Cluster Validity Measures and Application to Evaluation of Different Clustering Algorithms [FUZZ4166]**

Ryo Inokuchi  
Univ. of Tsukuba  
Tetsuya Nakamura  
Univ. of Tsukuba  
Sadaaki Miyamoto  
Univ. of Tsukuba

2:20PM
**L1-Norm based Fuzzy Clustering for Data with Tolerance [FUZZ4237]**

Yasunori Endo  
Univ. of Tsukuba  
Ryuichi Murata  
Univ. of Tsukuba  
Hiromi Toyoda  
Univ. of Tsukuba  
Sadaaki Miyamoto  
Univ. of Tsukuba

2:40PM
**Linear Fuzzy Clustering for Mixed Databases Based on Optimal Scaling [FUZZ4148]**

Ryo Uesugi  
Osaka Prefecture Univ.  
Katsuhito Honda  
Osaka Prefecture Univ.  
Hidetomo Ichihashi  
Osaka Prefecture Univ.

1:20PM
**T-S Fuzzy Control for Uncertain Nonlinear Systems Using Adaptive Fuzzy Approach [FUZZ4060]**

Li-Hsuan  
Fu-Jen Catholic Univ.  
Wei-Yen Wang  
Fu-Jen Catholic Univ.  
I-Hsun Li  
National Taiwan Univ. of Sci. & Tech.  
Shun-Feng Su  
National Taiwan Univ. of Sci. & Tech.

2:20PM
**Discretizing Continuous-time Controllers via Annealing Robust Walsh Function Networks [FUZZ4094]**

Shun-Feng Su  
National Taiwan Univ. of Sci. & Tech.  
Jin-Tsong Jeng  
National Formosa Univ.  
Tsu-Tian Lee  
National Taipei Univ. of Tech.

2:40PM
**Support Vector Regression for Controller Approximation [FUZZ4128]**

C. W. Tao  
National Ilan Univ.  
T. H. Su  
National Ilan Univ.  
C. C. Chuang  
National Ilan Univ.  
J. T. Jeng  
National Formosa Univ.

Pavilion Ballroom C

**TueMM-9**

SS-Zc: Evolutionary Computation & Games II

Chair:  
Sung-Bae Cho

1:00PM
**The Incremental Evolution of Attack Agents in Xpilot [CEC7768]**

Gary Parker  
Connecticut College  
Matt Parker  
Indiana Univ.

1:20PM
**Effects of Spatial Structures on Evolution of Iterated Prisoner's Dilemma Game Strategies in Single-dimensional and Two-dimensional Grids [CEC7718]**

Hisaori Ishibuchi  
Prefecture Univ.  
Naoki Namikawa  
Prefecture Univ.  
Ohara Ken  
Prefecture Univ.

1:40PM
**Evolutionary Othello Players Boosted by Opening Knowledge [CEC7778]**

Kyung-Joong Kim  
Yonsei Univ.  
Sung-Bae Cho  
Yonsei Univ.

2:00PM
**Co-evolving Real-time Strategy Game Playing Influence Map Trees with Genetic Algorithms [CEC7103]**

Chris Miles  
Univ. of Nevada  
Sushil Louis  
Univ. of Nevada

2:20PM
**Language Origin and the Effects of Individuals' Popularity [CEC7253]**

Tao Gong  
Chinese Univ. of Hong Kong  
James W. Minett  
Chinese Univ. of Hong Kong  
William S-Y Wang  
Chinese Univ. of Hong Kong
### TECHNICAL PROGRAM LISTING

**2:40PM**

**Evolving Stochastic Controller Networks for Intelligent Game Agents [CEC7779]**

Bobby Bryant  Univ. of Texas at Austin  
Risto Miikkulainen  Univ. of Texas at Austin

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**TueMM-10**  
**Pavilion Ballroom D**

**SS-Z2: Swarm Intelligence II**  
Chair: Xiaodong Li

**1:00PM**

**A Particle Swarm Algorithm for Complex Quantized Problem Spaces [CEC7226]**

Tim Hendtlass  Swinburne Univ. of Tech.

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**1:20PM**

**An Algorithm for Site Selection in GIS Based on Swarm Intelligence [CEC7256]**

Ajay Sharma  Centre for Artificial Intelligence and Robotics  
Vishnu Vyas  SRM Eng. College  
Dipti Deodhare  Centre for Artificial Intelligence and Robotics

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**1:40PM**

**Effective Diversification of Ant-based Search Using Colony Fission and Extinction [CEC7258]**

Akira Hara  Hiroshima City Univ.  
Takumi Ichimura  Hiroshima City Univ.  
Nobuyuki Fujita  Hiroshima City Univ.  
Tetsuyuki Takahama  Hiroshima City Univ.

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**2:00PM**

**A PSO-based Mobile Sensor Network for Odor Source Localization in Dynamic Environment: Theory, Simulation and Measurement [CEC7228]**

Wisnu Jatmiko  Nagoya Univ.  
Kosuke Sekiyama  Nagoya Univ.  
Toshio Fukuda  Nagoya Univ.

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**2:20PM**

**An Investigation into Mutation Operators for Particle Swarm Optimization [CEC7342]**

Paul Andrews  Univ. of York

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**2:40PM**

**On The Convergence of Information Exchange Methods in Multiple Cooperating Swarms [CEC7307]**

Mohammed El-Abd  Univ. of Waterloo  
Mohamed Kamel  Univ. of Waterloo

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**TueMM-11**  
**Orca**

**Applications to Art, Music & Design**

Chair: Dan Ashlock

**1:00PM**

**Genetic Algorithm-based Brush Stroke Generation for Replication of Chinese Calligraphic Character [CEC7284]**

Ka Wai Kwok  Chinese Univ. of Hong Kong  
Keung Man Wong  Chinese Univ. of Hong Kong  
Ka Wah Lo  Chinese Univ. of Hong Kong  
Yeung Yam  Chinese Univ. of Hong Kong

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**1:20PM**

**GA-based Music Arranging for Guitar [CEC7192]**

Daniel Tuohy  Univ. of Georgia AI Center  
Walter Potter  Univ. of Georgia AI Center

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**1:40PM**

**Resolution of the Inverse Problem for Iterated Function Systems using Evolutionary Algorithms [CEC7757]**

Anargyros Sarafopoulos  NCCA Bournemouth Univ.  
Bernard Buxton  Univ. College London

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**2:00PM**

**Optimal Parameter Selection in Image Similarity Evaluation Algorithms Using Particle Swarm Optimization [CEC7780]**

Keisuke Kameyama  Univ. of Tsukuba  
Nozomi Oka  Univ. of Tsukuba  
Kazuo Toraichi  Univ. of Tsukuba

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**2:20PM**

**Evolutionary Image Synthesis Using a Model of Aesthetics [CEC7005]**

Brian Ross  Brock Univ.  
William Ralph  Brock Univ.  
Hai Zong  Teilhard Tech.

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**2:40PM**

**Optimization of Pavement Design Using a Genetic Algorithm [CEC7537]**

Andy Pryke  Univ. of Birmingham  
Harry Evdorides  Univ. of Birmingham  
Rawya Ermaileh  Univ. of Birmingham

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**TueMM-12**  
**Finback**

**SS-Z4: Cultural Algorithms & the Emergence of Social Intelligence**

Chair: Robert Reynolds

**1:00PM**

**An Efficient Particle Swarm Optimization Approach Based on Cultural Algorithm Applied to Mechanical Design [CEC7471]**

Leandro dos Santos Coelho  Pontifical Catholic Univ. of Parana  
Viviana Cocco Marian  Pontifical Catholic Univ. of Parana
1:20PM
**Norms and Cultural Learning in the N-player Prisoner's Dilemma [CEC7636]**
Colm O'Riordan  NUI
Josephine Griffith  NUI
Dara Curran  NUI
Humphrey Sorensen  Univ. College Cork

1:40PM
**A Cultural Algorithm to Guide Driver Learning in Applying Child Vehicle Safety Restraint [CEC7720]**
Ziad Kobti  Univ. of Windsor
Anne W. Snowdon  Univ. of Windsor
Shumual Rahaman  Univ. of Windsor
Tina Dunlop  Univ. of Windsor
Robert D. Kent  Univ. of Windsor

2:00PM
**Cultural Evolution of Ensemble Learning for Problem Solving [CEC7769]**
Robert Reynolds  Wayne State Univ.
Bin Peng  Wayne State Univ.
Raja' Alomari  Wayne State Univ.

2:20PM
**Evolutionary Modeling of Larval Dispersal in Blowflies [CEC7631]**
Ana Romano  LBIC - FECC - UNICAMP
Leonardo Gomes  Sao Paulo State Univ.
Guilherme Gomes  Sao Paulo State Univ.
Wilfredo Puma  LBIC - FECC - UNICAMP
Marcelo Zanetti  LBIC - FECC - UNICAMP

2:40PM
**Agent-based Modeling of Early Cultural Evolution [CEC7707]**
Robert Reynolds  Wayne State Univ.
Robert Whallon  Univ. of Michigan-Ann Arbor
Mostafa Ali  Wayne State Univ.
Behnooshi Zadegan  Wayne State Univ.

2:00PM
**Continuous Heartbeat Monitoring Using Evolvable Block-based Neural Networks [IJCNN1838]**
Wei Jiang  Univ. of Tennessee
Seong Kong  Univ. of Tennessee
Gregory Peterson  Univ. of Tennessee

2:40PM
**Finding Phylogenetically Informative Genes by Estimating Multispecies Gene Entropy [IJCNN1779]**
Xiaoxu Han  Eastern Michigan Univ.
2:20PM
Discrete-Time Recurrent Neural Induction Motor Control using Kalman Learning [IJCNN1388]
Alma Y. Alanis  Unidad Guadalajara
Edgar N. Sanchez  Unidad Guadalajara
Alexander G. Loukianov  Unidad Guadalajara

TueMM-15
SS-Zm: Evolutionary Multi-Objective Optimization II
Chair:  Kalyanmoy Deb

1:00PM
Comparison Between Single-objective and Multi-objective Genetic Algorithms: Performance Comparison and Performance Measures [CEC7608]
Hisao Ishibuchi  Osaka Prefecture Univ.
Yuusuke Nojima  Osaka Prefecture Univ.
Tsutomu Doi  Osaka Prefecture Univ.

1:20PM
Visualization of Search Process and Improvement of Search Performance in Multi-Objective Genetic Algorithm [CEC7218]
Daisuke Yamashiro  Nagoya Univ.
Tomohiro Yoshikawa  Nagoya Univ.
Takeshi Furuhashi  Nagoya Univ.

1:40PM
An Improved Dimension-sweep Algorithm for the Hypervolume Indicator [CEC7770]
Carlos M. Fonseca  Univ. of Algarve
Luis Paquete  Univ. of Algarve
Manuel Lopez-Ibanez  Napier Univ.

2:00PM
Effects of Delta-similar Elimination and Controlled Elitism in the NSGA-II Multiobjective Evolutionary Algorithm [CEC7583]
Masahiko Sato  Shinshu Univ.
Hernan Aguirre  Shinshu Univ.
Kiyoshi Tanaka  Shinshu Univ.

2:20PM
An Electromagnetism-like Meta-heuristic for Multi-objective Optimization [CEC7240]
Ching-Shih Tsou  National Taipei College of Business
Chia-Hung Kao  Shih Hsin Univ.

2:40PM
Improved Pruning of Non-dominated Solutions Based on Crowding Distance for Bi-objective Optimization Problems [CEC7360]
Saku Kukkonen  Lappeenranta Univ. of Tech.
Kalyanmoy Deb  Indian Inst. of Tech.
TuePM-2
Evolutionary Approaches for Supervised Learning
Chairs: Michael Watts & Leandro Nunes de Castro

3:15PM
Fast Incremental Learning Algorithm Using Evolutionary Logic Networks For Real-Value Inputs [IJCNN1876]
Myoung Soo Park, Seoul National Univ.
Jin Young Choi, Seoul National Univ.

3:35PM
Nominal-scale Evolving Connectionist Systems [IJCNN1464]
Michael Watts, Lincoln Univ.

3:55PM
Combining Gradient and Evolutionary Approaches to the Artificial Neural Networks Training According to Principles of Support Vector Machines [IJCNN1590]
Mark Bundzel, Tech. Univ. of Kosice
Peter Sincak, Tech. Univ. of Kosice

4:15PM
Attack Characterization and Intrusion Detection Using an Ensemble of Self-Organizing Maps [IJCNN1361]
Lori DeLooze, United States Naval Academy

4:35PM
Market Risk Measurement for Crude Oil: A Wavelet Based VaR Approach [IJCNN1178]
Kin Keung Lai, City Univ. of Hong Kong
Kaijian He, Hunan Univ.
Chi Xie, Hunan Univ.
Shou Chen, Hunan Univ.

TuePM-3
Financial Engineering
Chairs: Lori DeLooze & Jagdish C. Patra

3:15PM
A Novel Recurrent Neural Network Based Prediction System for Trading [IJCNN1557]
Chai Quek, Nanyang Tech. Univ.
Michel Pasquier, Nanyang Tech. Univ.
Neha Kumar, Nanyang Tech. Univ.

3:35PM
How Good ANN Identification of Post-stabilization Inflation Dynamics Can Be? [IJCNN1554]
Georgi Dimirovski, Dogus Univ. of Istanbul
Cvetko Andreeski, Faculty of Tourism Ohrid

3:55PM
Designing a Neural Network Decision System for Automated Insurance Underwriting [IJCNN1090]
Weizhong Yan, GE Global Research Center
Piero Bonissone, GE Global Research Center

4:15PM
Financial Prediction of Major Indices Using Computational Efficient Artificial Neural Networks [IJCNN1537]
Jagdish C. Patra, Nanyang Tech. Univ.
Weineng Lim, Nanyang Tech. Univ.
Pramod K. Meher, Nanyang Tech. Univ.
Ee Luang Ang, Nanyang Tech. Univ.

TuePM-4
Ensemble & Other Meta-Learning Algorithms
Chairs: Lawrence Hall & Piero Bonissone

3:15PM
Locally Weighted Fusion of Multiple Predictive Models [IJCNN1758]
Feng Xue, General Electric Global Research Center
Raj Subbu, General Electric Global Research Center
Piero Bonissone, General Electric Global Research Center

3:35PM
Combining Diversity and Classification Accuracy for Ensemble Selection in Random Subspaces [IJCNN1033]
Albert Hung-Ren Ko, Univ. of Quebec
Robert Sabourin, Univ. of Quebec
Alceu de Souza Britto, Pontifical Catholic Univ. of Parana

3:55PM
Toward an Optimal Ensemble of Kernel-based Approximations with Engineering Applications [IJCNN1265]
Edgar Sanchez, Univ. of Zulia
Salvador Pintos, Univ. of Zulia
Nestor Queipo, Univ. of Zulia

4:15PM
Predicting Juvenile Diabetes from Clinical Test Results [IJCNN1023]
Shibendra Pobi, USF
Lawrence Hall, USF
4:35PM

Data Fusion for Outlier Detection through Pseudo-ROC Curves and Rank Distributions [IJCNN1957]

Paul Evangelista  United States Military Academy
Mark Embrechts  Rensselaer Polytechnic Inst.
Boleslaw Szymanski  Rensselaer Polytechnic Inst.

4:55PM

Cluster Ensemble for Gene Expression Microarray Data: Accuracy and Diversity [IJCNN1231]

Marcilio de Souto  DIMAp/Federal Univ. of R. Grande do Norte
Daniel de Araujo  DIMAp/Federal Univ. of R. Grande do Norte
Bruno da Silva  DIMAp/Federal Univ. of R. Grande do Norte

4:35PM

Feature Selection Using Ensemble Based Ranking against Artificial Contrasts [IJCNN2071]

Eugene Tuv  Intel
Alexander Borisov  Intel
Kari Torkkola  Motorola

3:15PM

A Study of Supervised Learning with Multivariate Analysis on Unbalanced Datasets [IJCNN1550]

Yu-Yen Ou  Yuan-Ze Univ.
Hao-Geng Hung  National Taiwan Univ.
Yen-Jen Oyang  National Taiwan Univ.

4:55PM

Learning with Mean-variance Filtering, SVM and Gradient-based Optimization [IJCNN1730]

Vladimir Nikulin  CSL, CECS, ANU

3:35PM

A Method for the Fuzzification of Categorical Variables [FUZZ4292]

Etienne Jodoin  Swiss Federal Inst. of Tech. at Lausanne
Carlos Andres Pena Reyes  Novartis Inst. for Biomedical Research
Eduardo Sanchez  Swiss Federal Inst. of Tech. at Lausanne

4:55PM

A Less Domain-dependent Fuzzy Mining Algorithm for Frequent Trends [FUZZ4214]

Chun-Hao Chen  National Cheng-Kung Univ.
Tzung-Pei Hong  National Univ. of Kaohsiung
Vincent S. Tseng  National Cheng-Kung Univ.

4:35PM

Data Mining Based Fuzzy Classification Algorithm for Imbalanced Data [FUZZ4206]

Le Xu  North Carolina State Univ.
Mo-Yuen Chow  North Carolina State Univ.
Leroy Taylor  Duke Energy

3:35PM

A linguistic Strategy Model Combined with Genetic Algorithms for Promotion Mix Choice [FUZZ4212]

Hsu Tsuen-Ho  National Kaohsuing First Univ. of S and T
Chiang Li-Tzu  National Kaohsuing First Univ. of S and T

3:35PM

A Study of Supervised Learning with Multivariate Analysis on Unbalanced Datasets [IJCNN1550]

4:35PM-5:15PM

Competition Panel

Isabelle Guyon  Independent Consultant, Berkeley

Pavilion Ballroom A

3:15PM

Local Independent Component Analysis with Fuzzy Clustering and Regression-principal Component Analysis [FUZZ4151]

Tatsuya Maenaka  Osaka Prefecture Univ.
Katsuhiro Honda  Osaka Prefecture Univ.
Hidetomo Ichihashi  Osaka Prefecture Univ.

3:35PM

On the Relation between Bayes and Fuzzy Classifiers [FUZZ4532]

Sofia Visa  Univ. of Cincinnati
Anca I. Ralescu  Univ. of Cincinnati

3:35PM

Possibilistic and Fuzzy c-Means Clustering with Weighted Objects [FUZZ4164]

Sadaaki Miyamoto  Univ. of Tsukuba
Ryo Inokuchi  Univ. of Tsukuba
Youhei Kuroda  Univ. of Tsukuba
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>4:35PM</td>
<td>Simultaneous Application of PLS Regression and FCM-type Clustering [FUZZ4147]</td>
<td>Katsuhiko Honda, Hidetomo Ichihashi, Akira Notsu, Osaka Prefecture Univ.</td>
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<td>4:55PM</td>
<td>Establishing a Benchmark for Re-identification Methods and its Validation using Fuzzy Clustering [FUZZ4234]</td>
<td>Vicenc Torra, Josep Domingo-Ferrer, Institut d'Inv. Intel.ligencia Artificial, Universitat Rovira i Virgili</td>
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</table>

**TuePM-8**

**SS-S3: Computational Intelligence for Ambient Intelligence**

Chair: Vincenzo Loia

3:15PM  | Fuzzy Ambient Intelligence for Next Generation Telecare [FUZZ4228] | Trevor Martin, Basim Majeed, Beum-Seuk Lee, Nick Clarke, Univ. of Bristol, BT Research & Venturing |


3:55PM  | DigitalBeing: An Ambient Intelligent Dance Space [FUZZ4093] | Magy Seif El-Nasr, Thanos Vasilakos, Penn State Univ., Univ. of Thessaly |

4:15PM  | Life Long Learning Approach for Type-2 Fuzzy Embedded Agents in Ambient Intelligent Environments [FUZZ4145] | Faiyaz Doctor, Hani Hagras, Victor Callaghan, Univ. of Essex, Univ. of Essex, Univ. of Essex |

4:35PM  | Ubiquitous Fuzzy Computing in Open Ambient Intelligence Environments [FUZZ4262] | Giovanni Acampora, Vincenzo Loia, Univ. of Salerno, Univ. of Salerno |

**TuePM-9**

**SS-Zc: Evolutionary Computation & Games III**

Chair: Bobby Bryant

3:15PM  | Evolving Robust and Specialized Car Racing Skills [CEC7747] | Julian Togelius, Simon M. Lucas, Univ. of Essex, Univ. of Essex |

3:35PM  | Using a Queue Genetic Algorithm to Evolve Xpilot Control Strategies on a Distributed System [CEC7734] | Matt Parker, Gary Parker, Indiana Univ., Connecticut College |

3:55PM  | Learning Multiple Search, Utility, and Goal Parameters for Game RISK [CEC7635] | James Vaccaro, Clark Guest, Univ. of California San Diego, Univ. of California San Diego |


4:55PM  | The Impact of Group Reputation in Multiagent Environments [CEC7616] | Bastian Baranski, Thomas Bartz-Beielstein, Ruediger Ehlers, Thuisianth Kajendran, Univ. of Dortmund, Univ. of Dortmund, Univ. of Dortmund, Univ. of Dortmund |

**Pavilion Ballroom C**

**Pavilion Ballroom B**
Pavilion Ballroom D

TuePM-10
SS-Z2: Swarm Intelligence III
Chair: Xiaodong Li

3:15PM
**Particle Swarm Optimization in Dynamic Pricing [CEC7677]**
Patrick Mullen  Brigham Young Univ.
Christopher Monson  Brigham Young Univ.
Kevin Seppi  Brigham Young Univ.
Sean Warnick  Brigham Young Univ.

3:35PM
**Bilevel Optimization of Multi-component Chemical Systems Using Particle Swarm Optimization [CEC7545]**
Werner Halter  ETH Zurich, Switzerland
Sanaz Mostaghim  ETH Zurich, Germany

3:55PM
**Solving Problems with Hidden Dynamics - Comparison of Extremal Optimization and Ant Colony System [CEC7560]**
Irene Moser  Swinburne Univ. of Tech.
Tim Hendtlass  Swinburne Univ. of Tech.

4:15PM
**Human Body Pose Estimation with PSO [CEC7400]**
Spela Ivekovic  Heriot-Watt Univ.
Emanuele Trucco  Heriot-Watt Univ.

4:35PM
**Analysis of the Superiority of Parameter Optimization over Genetic Programming for a Difficult Object Detection Problem [CEC7574]**
Vic Ciesielski  RMIT Univ.
Gayan Wijesinghe  RMIT Univ.
Andrew Innes  RMIT Univ.
Sabu John  RMIT Univ.

4:55PM
**A Novel Group Search Optimizer Inspired by Animal Behavioral Ecology [CEC7264]**
S. He  Univ. of Liverpool
Q.H. Wu  Univ. of Liverpool
J.R. Saunders  Univ. of Liverpool

TuePM-11
SS-Zf: Evolutionary Computation in Dynamic & Uncertain Environment
Chair: Shengxiang Yang

3:15PM
**Bacterial Foraging Algorithm for Dynamic Environments [CEC7413]**
W.J. Tang  Univ. of Liverpool
Q.H. Wu  Univ. of Liverpool
J.R. Saunders  Univ. of Liverpool

3:35PM
**Orthogonal Dynamic Hill-climbing Algorithm for Dynamic Optimization Problems [CEC7065]**
Hui Shi  China Univ. of Geosci.
Sanyou Zeng  China Univ. of Geosci.
Guang Chen  China Univ. of Geosci.
Hugo de Garis  Utah State Univ.
Lishan Kang  China Univ. of Geosci.

3:55PM
**Analysis of Passenger Movement at Birmingham International Airport using Evolutionary Techniques [CEC7198]**
Mario Gongora  De Montfort Univ.
Wasiq Ashfaq  De Montfort Univ.
**TECHNICAL PROGRAM LISTING**

4:15PM  
*Evolution Strategies for Robust Optimization [CEC7073]*  
Hans-Georg Beyer  
Univ. of Applied Sci.  
Bernhard Sendhoff  
Univ. of Applied Sci.  

4:35PM  
*Noise Handling in Evolutionary Multi-objective Optimization [CEC7086]*  
Chi Keong Goh  
National Univ. of Singapore  
Kay Chen Tan  
National Univ. of Singapore  

4:55PM  
*On the Design of Diploid Genetic Algorithms for Problem Optimization in Dynamic Environments [CEC7508]*  
Shengxiang Yang  
Univ. of Leicester  

---

3:15PM  
**Bioinformatics & Bio-Medical Engineering II**  
Chair:  
Kay Chen Tan  

3:15PM  
*Classification of Four Types of Common Murmurs using Wavelets and a Learning Vector Quantization Network [IJCNN1104]*  
Fernando Rios-Gutierrez  
Univ. of Minnesota Duluth  
Rocio Alba-Flores  
Univ. of Minnesota Duluth  
Khaled Ejaz  
Univ. of Minnesota Duluth  
Glenn Nordehn  
Univ. of Minnesota Duluth  
Nicholas Andrsevic  
Univ. of Minnesota Duluth  

3:35PM  
*Compact Electronic Nose Systems Using Metal Oxide Gas Sensors for Fire Detection Systems [IJCNN1657]*  
Bancha Charumporn  
Osaka Prefecture Univ.  
Toru Fujinaka  
Osaka Prefecture Univ.  
Michifumi Yoshioka  
Osaka Prefecture Univ.  
Sigeru Omatu  
Osaka Prefecture Univ.  

3:55PM  
*Function Approximation Approach to the Inference of Normalized Gaussian Network Models of Genetic Networks [IJCNN1307]*  
Shuhei Kimura  
Tottori Univ.  
Katsuki Sonoda  
JFE Engineering Corporation  
Soichiro Yamane  
JFE Engineering Corporation  
Koki Matsumura  
Tottori Univ.  
Mariko Hatakeyama  
RIKEN Genomic Sci.s Center  

4:15PM  
*An Evolving Automaton for RNA Secondary Structure Prediction [IJCNN1878]*  
Carlos A. Del Carpio M.  
Tohoku Univ.  
Mohamed Ismael  
Tohoku Univ.  
Eichiro Ichishii  
NIChe. Tohoku Univ.  
Michihisa Koyama  
Tohoku Univ.  
Momiji Kubo  
Tohoku Univ.  
Akira Miyamoto  
Tohoku Univ.  

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3:15PM  
**Computational Intelligence in Power Systems III Control of FACTS Devices**  
Chairs:  
Ganesh Venayagamoorthy & Ronald Harley  

3:15PM  
*An Interval Type-II Robust Fuzzy Logic Controller for a Static Compensator in a Multimachine Power System [IJCNN1935]*  
Salman Mohagheghi  
Georgia Inst. of Tech.  
Ganesh Venayagamoorthy  
Univ. of Missouri-Rolla  
Ronald Harley  
Georgia Inst. of Tech.  

3:35PM  
*Power Systems Neural Voltage Control by a StatCom [IJCNN1163]*  
Ruben Tapia-Olvera  
Cinestav  
Juan M. Ramirez  
Cinestav  

3:55PM  
*Optimal Design of SVC Damping Controllers with Wide Area Measurements using Small Population based PSO [IJCNN1845]*  
Tridib Das  
Univ. of Missouri Rolla  
Sandhya Jetti  
Univ. of Missouri Rolla  
Ganesh Venayagamoorthy  
Univ. of Missouri Rolla  

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4:15PM  
*Multi-label Classification of Gene Function using MLPs [IJCNN1667]*  
Andrew Skabar  
La Trobe Univ.  
Dennis Wollersheim  
La Trobe Univ.  
Tim Whitfort  
La Trobe Univ.  

4:35PM  
*SSSC’s Adaptive Neural Control [IJCNN1035]*  
Pavel Zuniga  
Cinestav  
Juan M. Ramirez  
Cinestav  

4:55PM  
*Bacteria Foraging: A New Tool for Simultaneous Robust Design of UPFC Controllers [IJCNN1897]*  
M. Tripathy  
Univ. College of Engineering, Burla  
Sukumar Mishra  
Indian Inst. of Tech.  
Ganesh Kumar Venayagamoorthy  
Univ. of Missouri-Rolla  

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4:35PM  
**PANEL: Evolutionary Multiobjective Optimization**  
Chair:  
Kalyanmoy Deb & Carlos A. Coello Coello  

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<th>Time</th>
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<td>5:30PM-6:30PM</td>
<td>Grand Ballroom AB</td>
<td><strong>IJCNN Invited Talk, Tuesday</strong></td>
<td>Seppo Ovaska</td>
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<td><strong>Fusion of Soft Computing and Hard Computing: Applications and Research</strong></td>
<td>Wlodek Duch</td>
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<td><strong>Chair:</strong></td>
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<tr>
<td>5:30PM-6:30PM</td>
<td>Junior Ballroom</td>
<td><strong>FUZZ-IEEE Invited Talk, Tuesday</strong></td>
<td>Enrique Rusipini</td>
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<td><strong>Clusters and Clustering: A Look at the Evolution of Fuzzy Numerical Classification</strong></td>
<td>Nikhil R. Pal</td>
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<td>Pavilion Ballroom</td>
<td><strong>CEC Invited Talk, Tuesday</strong></td>
<td>Marco Dorigo</td>
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<td><strong>Self Assembling in Swarm Robotics</strong></td>
<td>Gary Fogel</td>
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<td>7:30PM-9:30PM</td>
<td>Grand Ballroom</td>
<td><strong>Plenary Poster Session, Tuesday</strong></td>
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<td><strong>IJCNN Posters</strong></td>
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<td>2001</td>
<td></td>
<td><strong>Reconstruction of Gene Regulatory Networks from Temporal Microarray Data Using Pattern Recognition Techniques</strong></td>
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<td><strong>Azhar Salim</strong></td>
<td>Diego State Univ.</td>
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<td><strong>Faramarz Valafar</strong></td>
<td>Diego State Univ.</td>
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<tr>
<td>2002</td>
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<td><strong>Independent Component Analysis of Body Surface Potential Mapping Recordings with Atrial Fibrillation</strong></td>
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<td></td>
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<td><strong>Raul Llinares</strong></td>
<td>Universidad Politecnica Valencia</td>
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<td><strong>Jorge Igual</strong></td>
<td>Universidad Politecnica Valencia</td>
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<td><strong>Jose Millet</strong></td>
<td>Universidad Politecnica Valencia</td>
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<td><strong>Maria Guillem</strong></td>
<td>Universidad Politecnica Valencia</td>
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<td>2003</td>
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<td><strong>There Goes the Neighborhood: A Comparison of a &quot;Just-in-Time&quot; SOM with the Traditional Kohonen Map Applied to Segmenting US Medicare Beneficiaries</strong></td>
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<td><strong>Susan Garavaglia</strong></td>
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<td>2004</td>
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<td><strong>A Neural Network Model for Maximizing Prediction Accuracy in Haplotype Tagging SNP Selection</strong></td>
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<td></td>
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<td><strong>Jae-Yoon Jung</strong></td>
<td>Univ. of Ma</td>
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<td><strong>Phil Hyoun Lee</strong></td>
<td>Queen's Univ.</td>
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<td>2006</td>
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<td><strong>Level Set Method Based On Improved Mumford-Shah Model Applied In Wood Cell Image Segmentation</strong></td>
<td>Xueimei Guan Northeast Forestry Univ. of China Liping Sun Northeast Forestry Univ. of China Jun Cao Northeast Forestry Univ. of China</td>
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<td>2007</td>
<td></td>
<td><strong>In Silico Prediction of Promoter Sequences of Bacillus Species</strong></td>
<td>Kelly da Silva Federal Univ. of R. Grande do Norte Meika Monteiro Federal Univ. of R. Grande do Norte Marcilio de Souto Federal Univ. of R. Grande do Norte</td>
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<td>2008</td>
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<td><strong>Predicting Protein-protein Interaction Sites Using Radial Basis Function Neural Networks</strong></td>
<td>Bing Wang Hefei Inst. of Intelligent Machines Hau San Wong City Univ. of Hong Kong Peng Chen Hefei Inst. of Intelligent Machines Hong-Qiang Wang City Univ. of Hong Kong De-Shuang Huang Hefei Inst. of Intelligent Machines</td>
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<td>2009</td>
<td></td>
<td><strong>Long-range Interaction Analysis using Principal Component Analysis</strong></td>
<td>Peng Chen Univ. of Sci. &amp; Tech. of China Hau-San Wong City Univ. of Hong Kong Bing Wang Univ. of Sci. &amp; Tech. of China De-Shuang Huang Hefei Inst. of Intelligent Machines</td>
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<tr>
<td>2010</td>
<td></td>
<td><strong>A Flexibility Index for Analysis of Bio-molecular Complexes Stability</strong></td>
<td>Carlos A. Del Carpio M. Tohoku Univ. Eiichiro Ichiishi Tohoku Univ. Michihisa Koyama Tohoku Univ. Momoji Kubo Tohoku Univ. Akira Miyamoto Tohoku Univ.</td>
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<tr>
<td>2011</td>
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<td><strong>Feedback Neurocontrol of a Disease</strong></td>
<td>Danil Prokhorov Toyota Tech. Center</td>
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<td>2012</td>
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<td><strong>Complex Kalman Filter Trained Recurrent Neural Network Based Equalizer for Mobile Channels</strong></td>
<td>Pedro Coelho State Univ. of Rio de Janeiro Luiz Biondi State Univ. of Rio de Janeiro</td>
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<td>2013</td>
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<td><strong>Boosted Modified Probabilistic Neural Network for Network Intrusion Detection</strong></td>
<td>Tich Phuoc Tran Univ. of Tech. Tony Jan Univ. of Tech.</td>
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2014

Application of Artificial Neural Networks Techniques to Computer Worm Detection [IJCNN1646]
Dima Stopel  Ben-Gurion Univ. of the Negev
Zvi Boger  OPTIMAL - Industrial Neural Systems Ltd.
Robert Moskovitch  Ben-Gurion Univ. of the Negev
Yuval Shahar  Ben-Gurion Univ. of the Negev
Yuval Elovici  Ben-Gurion Univ. of the Negev

2015

A New PTS Method for PAPR Reduction by Local Search in GA [IJCNN2075]
Sung-Soo Kim  Chungbuk National Univ.
Myeong-Je Kim  Chungbuk National Univ.
T. Aaron Gulliver  Univ. of Victoria

2016

Neuromodelling of Frequency Selective Surfaces and E-Shaped Microstrip Antennas [IJCNN1987]
Patric Silva  Federal Univ. of Rio Grande do Norte
Adalido D’Assuncao  Federal Univ. of Rio Grande do Norte

2017

Methods for Parallelizing the Probabilistic Neural Network on a Beowulf Cluster Computer [IJCNN1740]
Jimmy Secretan  Univ. of Central Florida
Michael Georgiopoulos  Univ. of Central Florida
Ian Maidhof  Univ. of Central Florida
Philip Shibly  Univ. of Central Florida
Joshua Hecker  Univ. of Central Florida

2018

Mining Formative Evaluation Rules Using Learning Portfolios for Web-based Learning Systems [IJCNN1284]
Chih-Ming Chen  National Hualien Univ. of Education
Chin-Ming Hong  National Taiwan Normal Univ.
Shyuan-Yi Chen  National Taiwan Normal Univ.
Chao-Yu Liu  National Hualien Univ. of Education

2019

An ETF Trading Decision Support System by Using Neural Network and Tech. Indicator [IJCNN1098]
Mu-Hsing Kuo  Chaoyang Univ.
Chih-Lung Chen  Chaoyang Univ.

2020

Real-time Pricing of Mutual Funds [IJCNN1568]
Hui Gao  Univ. of Minnesota
Vladimir Cherkassky  Univ. of Minnesota

2021

Cellular Neural Network for Associative Memory and Its Application to Braille Image Recognition [IJCNN1815]
Michihiro Namba  Yamanashi Eiwa College
Zhong Zhang  Toyohashi Univ. of Tech.

2022

Image Recognition Systems Based on Random Local Descriptors [IJCNN1396]
Ernst Kussul  Lab. of Micromechanics & Mechatronics
Tatiana Baidyk  Lab. of Micromechanics & Mechatronics
Donald Wunsch II  Univ. of Missouri-Rolla
Oleksandr Makeyev  National Taras Shevchenko Univ.
Anabel Martin  Lab. of Micromechanics & Mechatronics

2023

A New Facial Expression Recognition Technique Using 2-D DCT and Neural Networks Based Decision Tree [IJCNN1523]
Yegui Xiao  Prefectural Univ. of Hiroshima
L. Ma  Tokyo Polytechnic Univ.
K. Khorasani  Concordia Univ.

2024

Appearance-based Pain Recognition from Video Sequences [IJCNN2081]
Md. Maruf Monwar  Univ. of Northern B C
Siamak Rezaei  Univ. of Northern B C

2025

A Novel Method of Modulation Classification for Digital Signals [IJCNN1257]
Lei Huo  Student, China
Tiandong Duan  Professor, China
Xiangqian Fang  Student, China

2026

An Exhaustive Search Strategy for Detecting Persons in Beach Scenes using Digital Video Imagery and Neural Network-based Classification [IJCNN1736]
Steve Green  Griffith Univ.
Michael Blumenstein  Griffith Univ.

2027

Hierarchical HMMs for Autonomous Diagnostics and Prognostics [IJCNN1350]
Fatih Camci  Impact Tech.
Ratna Babu Chinnam  Wayne State Univ.

2028

Hough Transform Neural Network for Seismic Pattern Detection [IJCNN1137]
Kou-Yuan Huang  National Chiao Tung Univ.

2029

Reinforcement Learning for Platform-Independent Visual Robot Control [IJCNN1921]
David Muse  Univ. of Sunderland
Kevin Burn  Univ. of Sunderland
Stefan Wermter  Univ. of Sunderland

2030

Local Movement Control with Neural Networks on Autonomous Robots [IJCNN1611]
Steffen Prueter  Univ. of Rostock
Ralf Salomon  Univ. of Rostock
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<td>Data Fusion Modeling of Lumber Moisture Content Sensors Using Chebyshev Functional Link Networks</td>
<td>Jiawei Zhang, Liping Sun, Jun Cao</td>
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<td>Attitude and Vibration Control of Flexible Spacecraft Using Adaptive Inverse Disturbance Canceling</td>
<td>Yaqiu Liu, Jun Cao, Nihong Wang</td>
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<td>Robust Control for Biped Robot Using Cerebellar Model Articulation Controller</td>
<td>Chih-Min Lin, Wei-Che Fan, Chen Chiu-Hsiung, Yu-Ling Hou</td>
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<td>2034</td>
<td>Task Learning for a Real Robot by using Virtual Space</td>
<td>Yasuhiro Wada, Koichi Sugiyama</td>
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<td>2035</td>
<td>A Neuro-augmented Observer for a Class of Nonlinear Systems</td>
<td>Huajun Gong, Hao Xu, Fahmida Chowdhury</td>
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<td>2036</td>
<td>A Neural Network Algorithm for the Error Optimization in the Path Tracking Control of a Mobile Robot</td>
<td>Sree Krishna Chattanya Vadrevu, Prabir Kumar Sarkar</td>
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<td>2037</td>
<td>Adaptive Stochastic Resonance in Color Object Segmentation</td>
<td>Sittichote Janpaiiboon, Sanya Mitaim,</td>
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<td>2038</td>
<td>A Cooperative Recurrent Neural Network Algorithm for Parameter Estimation of Autoregressive Signals</td>
<td>Xia Youshen, Kamel Mohamed S.</td>
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<td>2039</td>
<td>A Novel SVM-based Blind Super-Resolution Algorithm</td>
<td>Jianping Qiao, Ju Liu, Caihua Zhao</td>
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<td>2040</td>
<td>Topology Selection for Signal Change Detection in Sensor Networks: RBF vs. MLP</td>
<td>James King, Leon Reznik</td>
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<td>Rochester Inst. of Tech.</td>
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<td>2041</td>
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<td>Jerome Da Rugna, Hubert Konik</td>
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<td>Alexander Galushkin, Pavel Kazantsev, Svetlana Korobkova, Artyom Lodyagin, Sergey Pantaleev</td>
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<td>2043</td>
<td>Partial Object Recognition for Improving Novelty Detection in Videos</td>
<td>Maneesha Singh, Sameer Singh, Markos Markou</td>
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<td>Zhenhai Wang, C.H. Chen</td>
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<td>IEEE student member</td>
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<td>Speaker Verification Using 3-D ROC Curves for Increasing Imposter Rejections</td>
<td>Fredric Ham, Ranjan Acharyya, Young-Chan Lee</td>
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<td>2046</td>
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<td>Jiann-Shu Lee, Yung-Ming Kuo, Pau-Choo Chung</td>
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<td>2047</td>
<td>Hierarchical Reinforcement Learning Model for Military Simulations</td>
<td>Amandeep Sidhu, Narendra Chaudhari, Ghee Goh</td>
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<td>2048</td>
<td>The Analysis of Pen Inputs of Handwritten Symbols using Self Organizing Maps and its Application to User Authentication</td>
<td>Hiroshi Dozono, Nakakuni Masanori, Sanada Hiroaki, Noguchi Yoshio</td>
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Jianping Yin National Univ. of Defense Tech.
Wengsheng Tang National Univ. of Defense Tech.
Jinbo Hao National Univ. of Defense Tech.
Dingxing Zhang National Univ. of Defense Tech.

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Applying Improved BP Neural Network in Underwater Targets Recognition [IJCNN1243]
Zhihe Shen Northwest Industry Univ.
Feng Liu Dalian naval academy

2051
A Novel Wavelet-based-CMAC Neural Network Controller for Nonlinear Systems [IJCNN1585]
Ching-Hung Lee Yuan Ze Univ.
Bor-Hang Wang Yuan Ze Univ.
Hua-Issiang Chang Yuan Ze Univ.
Hung-Yi Pan Yuan Ze Univ.

2052
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Gerald Denny Alaska Native Tech.
James Tilley Alaska Native Tech.
Alex Kulichenko Scientific Fishery Sys.s
Patrick Simpson Scientific Fishery Sys.s

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Steven Morphet Syracuse Research Corp.
James Fawcett Syracuse Univ.
Kanat Bolazar Syracuse Univ.
Murat Gurung Syracuse Univ.

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Eduardo Crispim Univ. of Algarve
Pedro Ferreira Univ. of Algarve
Antonio Ruano Univ. of Algarve

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John P. Velas Pennsylvania State Univ.
Kwang Y. Lee Pennsylvania State Univ.

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Joaquim Pereira State Univ. of Campinas
Takaaki Ohishi State Univ. of Campinas
Rosangel Ballini State Univ. of Campinas
Clodolando Lima State Univ. of Campinas
Fernando Von Zuben State Univ. of Campinas

2057
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Miguel Rio Univ. College London
Miguel Rocha Univ. of Minho
Pedro Sousa Univ. of Minho

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Ming-Der Yang National Chung-hsing Univ.
Ming-Che Chen Chaoyang Univ. of Tech.
Ji-Yuan Lin Chaoyang Univ. of Tech.

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Jiansheng Qian CUMT
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Ronaldo Aquino Ufpe
Aida Ferreira Ceft-pe
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Hasan Abdulkader Univ. of Aleppo
Daniel Roviras IRIT/INP-ENSEEIHT/TeSA
Ridha Chagra TeSA Lab.
Willy Vigneau M3systems
Francis Castanie Yesa Lab.

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Wataru Noguchi NEC
Cong-Kha Pham Univ. of Electro-Communications
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Chi-Hwa Song Chungnam National Univ.
Won Don Lee ChungNam National Univ.
Jae-Cheol Ryoo ChungNam National Univ.

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Dileep A.D. Indian Inst. of Tech. Madras
Chandra Sekhar C. Indian Inst. of Tech. Madras

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Anahita Zarei Univ. of Washington
Mohamed El-Sharkawi Univ. of Washington
Michael Hairfield Univ. of Washington
Gregory King Univ. of Washington

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Miguel A. Cristin Valdez Inst. of Electrical Research
Jaime A. Orozco Valera Inst. of Electrical Research
M. Jojutla O. Pacheco Arteaga Inst. of Electrical Research

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Shengxiang Yang Univ. of Leicester

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Vytautas Galvanauskas Univ. of Tech.
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Sebastiao Foyo de Azevedo Univ. of Porto

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Luis Zarate PUC Minas
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Leonardo Oliveira PUC Minas
Victor Gil PUC Minas
Tadeu Santos PUC Minas
Bruno Nogueira PUC Minas

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Luis Zarate PUC Minas
E.M.D. Pereira PUC Minas

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Jung Hoon Lee Stony Brook Univ.
Konstantin K. Likharev Stony Brook Univ.

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Yicong Meng Hong Kong Univ. of Sci. & Tech.
Stanley Y.M. Lam Hong Kong Univ. of Sci. & Tech.
Eric K.C. Tsang Hong Kong Univ. of Sci. & Tech.
Bertram E. Shi Hong Kong Univ. of Sci. & Tech.

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Chih-Min Lin Yuan-Ze Univ.
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Alexandre Schmid Swiss Federal Inst. of Tech.
Yusuf Leblebici Swiss Federal Inst. of Tech.

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Liam McDaid Univ. of Ulster
Vunfu Wong Kwan Tyndall National Inst.
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Il Song Han Univ. of Sheffield

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Yohann Benedict Universite de Haute-Alsace
Jean Mercier Universite de Haute-Alsace
Sofien Chtourou Ecole Nationale Superieure de Techniques Avancee
Omar Hammami Ecole Nationale Superieure de Techniques Avancee
Mohamed Chtourou National Eng. School of Sfax

2084 An FPGA Implementation of a Competitive Hopfield Neural Network for Use in Histogram [IJCNN1325]
Sherif Saif Mentor Graphics
Hazem Abbas Mentor Graphics
Salwa Nassar Electronic Research Inst.

2085 Neural Network Based Memory Access Prediction Support for SoC Dynamic Reconfiguration [IJCNN1549]
Sofien Chtourou Ecole Nationale Superieure de Techniques Avancee
Omar Hammami Ecole Nationale Superieure de Techniques Avancee
Mohamed Chtourou National Eng. School of Sfax

2086 SIRENS: A Simple Reconfigurable Neural Hardware Structure for artificial neural network implementations [IJCNN1338]
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Ulrich Rueckert Univ. of Paderborn

2087 Embedded Electronics Systems for Training Support Vector Machines [IJCNN1321]
Sergio Decherchi Genoa Univ.
Giovanni Parodi Genoa Univ.
Paolo Gastaldo Genoa Univ.
Rodolfo Zunino Genoa Univ.

2088 A Hardware Implementation of Multi-level Threshold Logic for Artificial Neural Net [IJCNN1008]
Richard Neville Univ. of Manchester

2089 An Asymmetry Subsethood-based Neural Fuzzy Network [IJCNN1148]
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Chin-Ling Lee Nankai Inst. of Tech.

2090 Artificial Ventilation Modeling using Neuro-Fuzzy Hybrid System [IJCNN1183]
Feng Liu Centre for Comp. Intelligence
Geok See Ng C Centre for Comp. Intelligence
Chai Quek Centre for Comp. Intelligence
Tsee Foong Loh KK Women's and Children's Hospital

2091 Clinical Diagnosis Using Proteomics and Complementary Learning [IJCNN1030]
Tuan Zea Tan Nanyang Tech. Univ.
Chai Quek Nanyang Tech. Univ.
Geok See Ng Nanyang Tech. Univ.

2092 A Neuro-Fuzzy Approach for the Motion Planning of Redundant Manipulators [IJCNN1984]
Rene V. Mayorga Univ. of Regina
Sandep Chandana Univ. of Regina

2093 Modified Fuzzy-CMAC Networks with Clustering-based Structure [IJCNN2015]
Geraldo Souza Reis Junior Senai / Fiemg
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2094 The Design of Neuro-Fuzzy Networks Using Particle Swarm Optimization and Recursive Singular Value Decomposition [IJCNN1147]
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Chi-Yung Lee Nankai Inst. of Tech.

2095 A Fuzzified Neural Fuzzy Inference Network That Learns From Linguistic Information [IJCNN1106]
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Chun-I Lee National ChungHsing Univ.
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2096 Model Accuracy of the IDS Method for Three-input Systems and a Basic Constructive Algorithm for Structural Optimization [IJCNN1431]
Masayuki Murakami Univ. of Electro-Communications
Nakaji Honda Univ. of Electro-Communications

2097 Evolution of Real Valued Weights for RBF-DDA Networks [IJCNN1012]
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2098 A Two-phase Genetic Local Search Algorithm for Feedforward Neural Network Training [IJCNN1221]
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Wen-Ching Chen National Chung Hsing Univ.

2099 Pattern Classification by Evolutionary RBF Networks Ensemble Based on Multi-objective Optimization [IJCNN1509]
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Toshiharu Hatano Osaka Univ.
Katsuji Uosaki Osaka Univ.
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Hong Zhang  Kyushu Inst. of Tech.
Masumi Ishikawa  Kyushu Inst. of Tech.

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Byran O'Hora  Univ. College Dublin
Jerome Perera  Univ. College Dublin
Anthony Brabazon  Univ. College Dublin

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Habib Dhahri  Research Group on Intelligent Machines
Adel M. Alimi  Research Group on Intelligent Machines

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Diego Gutnisky  Univ. of Texas
Rina Zelmann  Mc Gill Univ.
Silvano Zanutto  Universidad de Buenos Aires

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Laura E Santana  Federal Univ. of Rio Grande do Norte
Anne M Canuto  Federal Univ. of Rio Grande do Norte
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Baoyu Zheng  Nanjing Univ. of Posts & Telecom.

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Mohammed Yeasin  Univ. of Memphis

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Jahangheer Shaik  Univ. of Memphis
Mohammed Yeasin  Univ. of Memphis

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Ting Yu  Univ. of Tech.
Tony Jan  Univ. of Tech.
John Debenham  Univ. of Tech.
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Tong-Seng Quah  Nanyang Tech. Univ.
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Humberto Cesar Brandao de Oliveira  Federal Univ. of Pernambuco
Germano Crispim Vasconcelos  Federal Univ. of Pernambuco
Guilherme Bastos Alvarenga  Federal Univ. of Lavras

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Jonathan Villanueva  Student Member & CIS Member
Vianery Cruz  Student Member & CIS Member
Gerardo Reyes  IEEE Member & CIS Member
Aaron Benitez  IEEE Student Member

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- Pawalai Kraipeerapun  Murdoch Univ.
- Chun Che Fung  Murdoch Univ.
- Warick Brown  Univ. of Western Australia
- Kok Wai Wong  Murdoch Univ.

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- Chin-Ming Hong  National Taiwan Normal Univ.
- Chih-Ming Chen  National Hualien Univ. of Education
- Chao-Yang Chiu  National Taiwan Normal Univ.

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- Michael Healy  Univ. of New Mexico
- Thomas Caudell  Univ. of New Mexico

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- Alexandros Chortaras  National Tech. Univ. of Athens
- Giorgos Stamou  National Tech. Univ. of Athens
- Andreas Stafylopatis  National Tech. Univ. of Athens
- Stefanos Kollias  National Tech. Univ. of Athens

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- Stefan Lessmann  Univ. of Hamburg
- Robert Stahlbock  Univ. of Hamburg
- Sven F. Crone  Lancaster Univ.

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- Eulanda Dos Santos  Ecole de Technologie Superieure
- Robert Sabourin  Ecole de Technologie Superieure
- Patrick Maupin  Defence Research & Devpt. Canada

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- Shun Bian  Univ. of East Anglia
- Wenjia Wang  Univ. of East Anglia

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- Renan Vitral  Fed. Univ. Juiz de Fora

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- Andre Alves Portela Santos  Federal Univ. of Santa Catarina
- Leandro dos Santos  Coelhinho Pontificia Catholic
- Kok Wai Wong  Murdoch Univ.

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- Kazi Shah Nawaz Ripon  City Univ. of Hong Kong
- Chi-Ho Tsang  City Univ. of Hong Kong
- Sam Kwong  City Univ. of Hong Kong

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- Ya-Fu Peng  Ching-Yun Univ.
- Ming-Hung Lin  Ching-Yun Univ.
- Chao-Ming Chong  Yuan-Ze Univ.

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**CMAC-based Supervisory Control for Chaotic Chua's Circuits** [IJCNN1255]

- Chiu-Hsiung Chen  Yuan-Ze Univ.
- Chih-Min Lin  Yuan-Ze Univ.
- Yu-Ling Hou  Yuan-Ze Univ.
- Wei-Che Fan  Yuan-Ze Univ.

Plenary Poster Session, Tuesday
FUZZ-IEEE Posters

7:30PM-9:30PM  Grand Ballroom

Chair: Ling Guan

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**A New Approach for Handling Classification Problems Based on Fuzzy Information Gain Measures** [FUZZ4026]

- Jen-Da Shie  National Taiwan Univ. of Sci. & Tech.
- Shyi-Ming Chen  National Taiwan Univ. of Sci. & Tech.

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**Skin-Color Segmentation by Histogram Based TS-type Fuzzy System Trained by Support Vector Machine** [FUZZ4030]

- Chia-Feng Juang  National ChungHsing Univ.
- Shih-Hsuan Chiu  National ChungHsing Univ.
- I-Fang Chung  National Yang-Ming Univ.
- Yuan-Chang Liou  Chung Chou Inst. of Tech.

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**A New Fuzzy Clustering Method with Controllable Membership Characteristics** [FUZZ4057]

- Dian-Rong Yang  National Yunlin Univ. of Sci. and Tech.
- Leu-Shing Lan  National Yunlin Univ. of Sci. and Tech.
- Shih-Hung Liao  National Yunlin Univ. of Sci. and Tech.

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**Multi-Modal Recognition System Integrating Fuzzy Logic-based Embedded KSSL Recognizer and Voice-XML** [FUZZ4096]

- Jung-Hyun Kim  Sungkyunkwan Univ.
- Kwang-Seok Hong  Sungkyunkwan Univ.
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Chun-Ta Lin, Yu-Da College of Business
Chih-Yao Lo, Yu-Da College of Business
Chen-Feng Wu, Yu-Da College of Business
Yu-Teng Chang, Yu-Da College of Business

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Dennis Nikitenko, Univ. of Guelph

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Arman Kiani, Ferdowsi Univ. of Mashhad
Mohammad Akbarzadeh, BISC, UC Berkeley

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Witold Pedrycz, Univ. of Alberta
Sung-Kwun, Univ. of Suwon

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Da-Wei Wang, Academia Sinica
Churn-Jung Liau, Academia Sinica
Tsang-sheng Hsu, Academia Sinica

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Hui-Yu Wang, National Chengchi Univ.
Shyi-Ming Chen, National Taiwan Univ. of Sci. and Tech.

Adaptive Fuzzy PID Control for Nonlinear Systems with H-Infinity Tracking Performance [FUZZ4153]
Wen-Shyong Yu, Tatung Univ.

Fuzzy Adaptive Output-Feedback Control Design for Nonlinear Dynamic Systems with Output Delay [FUZZ4216]
Tzu-Sung Wu, Tatung Univ.
Wen-Shyong Yu, Tatung Univ.

Fuzzy Model Reference Adaptive Control Design for Uncertain Nonlinear Time-delay Systems [FUZZ4188]
Wen-Shyong Yu, Tatung Univ.
Chih-Lyang Hwang, Tatung Univ.

Privacy Protection in Social Network Data Disclosure Based on Granular Computing [FUZZ4513]
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Wen-Shyong Yu, Tatung Univ.
Chih-Lyang Hwang, Tatung Univ.

A Multiobjective Evolutionary Algorithm for Solving Vehicle Routing Problem with Stochastic Demand [CEC7087]
Chun Yew Cheong, National Univ. of Singapore
Kay Chen Tan, National Univ. of Singapore
Di Kai Liu, Univ. of Tech.
Jian Xin Xu, National Univ. of Singapore

Optimizing Programs with Estimation of Bayesian Network [CEC7160]
Yoshihiko Hasegawa, Univ. of Tokyo
Hitoshi Iba, Univ. of Tokyo

An Improved Particle Swarm Optimization Algorithm for Vehicle Routing Problem with Time Windows [CEC7175]
Qing Zhu, Tsinghua Univ.
Limen Qian, Tsinghua Univ.
Yingchun Li, Tsinghua Univ.
Shanjun Zhu, Tsinghua Univ.

A Knowledge-based Evolution Strategy for the Multi-objective Minimum Spanning Tree Problem [CEC7185]
Madeleine Moradkhan, Univ. of Reading
William Browne, Univ. of Reading

EfuNNs Ensembles Construction Using a Clustering Method and a Coevolutionary Genetic Algorithm [CEC7196]
Fernanda L. Minku, Federal Univ. of Pernambuco
Teresa B. Ludermir, Federal Univ. of Pernambuco

DNA Secret Sharing [CEC7252]
Avishek Adhikari, Indian Statistical Inst.

Protein Sequencing with an Adaptive Genetic Algorithm from Tandem Mass Spectrometry [CEC7523]
Jean-Charles Boisson, LIFL/INRIA Futurs
Laetitia Jourdan, LIFL/INRIA Futurs
El-Ghazali Talbi, LIFL/INRIA Futurs
Christian Rolando, Proteomics platform / COM

A Self-selecting Crossover Operator [CEC7565]
Robin Harper, Univ. of New South Wales
Alan Blair, Univ. of New South Wales
8009
*PSEO-E: Particle Swarm with Exponential Distribution [CEC7289]*
Renato Krohling  Univ. Dortmund
Leandro dos Santos Coelho  Pontifical Catholic Univ. of Parana

8010
*Identifying Complex Biological Interactions based on Categorical Gene Expression Data. [CEC7464]*
Ben Goertzel  Biomind LLC
Lucio Coelho  Biomind LLC
Cassio Pennachin  Biomind LLC
Mauricio Mudada  Biomind LLC

8011
*Virtual Reality Spaces for Visual Data Mining with Multiobjective Evolutionary Optimization: Implicit and Explicit Function Representations Mixing Unsupervised and Supervised Properties [CEC7510]*
Julio J. Valdes  National Research Council Canada
Alan J. Barton  National Research Council Canada

8012
*Fuzzy Model for Gene Regulatory Network [CEC7578]*
Ramesh Ram  Monash Univ.
Madhu Chetty  Monash Univ.
Trevor Dix  Monash Univ.

8013
*A Comparison of Routing Algorithms in a Hybrid Evolutionary Tool for the Inventory and Transportation Problem [CEC7640]*
Anna I. Esparcia-Alcazar  Instituto Tecnologico de Informatica
Lidia Lluch-Revert  Universidad Politecnica de Valencia
Manuel Cardos  Instituto Tecnologico de Informatica
Ken Sharman  Universidad Politecnica de Valencia
Carlos Andres-Romano  Universidad Politecnica de Valencia

8014
*Optimization and Modeling in the Co-processing of Wastes in Cement Industry Comprising Cost, Quality and Environmental Impact using SQP, Genetic Algorithm, and Differential Evolution [CEC7646]*
Ricardo Carrasco Carpio  Univ. Center of Formiga
Leandro dos Santos Coelho  Pontifical Catholic Univ. of Parana

8015
*When is a Swarm Necessary? [CEC7709]*
Toby Richer  Goldsmiths College
Tim Blackwell  Goldsmiths College

8016
*Empirical Study of an Unconstrained Modified Particle Swarm Optimization [CEC7719]*
Philip Moore  Univ. of Missouri-Rolla
Ganesh Kumar Venayagamoorthy  Univ. of Missouri-Rolla

8017
*New Evolutionary Algorithm Based on Mathematical Model of Evolution of a Species [CEC7689]*
Celso De La Cruz  Univ. Nacional de San Juan
Hector Daniel Patino  Univ. Nacional de San Juan
Ricardo Carelli  Univ. Nacional de San Juan

8018
*Heuristically Tuned GA to Solve Genome Fragment Assembly Problem [CEC7600]*
Satoko Kikuchi  Iwate Prefectural Univ.
Goutam Chakraborty  Iwate Prefectural Univ.

8019
*Implementing GP on Optimizing both Boolean and Extended Boolean Queries in IR and Fuzzy IR systems with Respect to the Users Profiles [CEC7340]*
Huske Dusan  Inst. of Comp. Sci. AS CZ
Suhasi Owais  Tech. Univ. VSB Ostrava
Pavel Kromer  Tech. Univ. VSB Ostrava
Vaclav Snasel  Tech. Univ. VSB Ostrava
Roman Neruda  Inst. of Comp. Sci. AS CZ

8020
*A Comparison of Evolutionary Protocols for Solving Distributed Constraint Satisfaction Problems [CEC7440]*
Winard Britt  Auburn Univ.
Hurley Cunningham  Auburn Univ.
Gerry Dozier  Auburn Univ.

8021
*Evolutionary Aggregation and Refinement of Bayesian Networks [CEC7745]*
Kyung-Joong Kim  Yonsei Univ.
Sung-Bae Cho  Yonsei Univ.

8022
*Directed Evolutionary Programming: Towards an Improved Performance of Evolutionary Programming [CEC7753]*
Abdel-Rahman Hedar  Kyoto Univ.
Masaofukushima  Kyoto Univ.

8023
*Constrained and Unconstrained Evolution of "LCR" Low-pass Filters with Oscillating Length Representation [CEC7303]*
Yerbol Sapargaliyev  Brunel Univ.
Tatiana Kalganova  Brunel Univ.

8024
*An Extension of Genetic Network Programming with Reinforcement Learning Using Actor-Critic [CEC7109]*
Hiroyuki Hatakeyama  Waseda Univ.
Shingo Mabu  Waseda Univ.
Kotaro Hirasawa  Waseda Univ.
Jinglu Hu  Waseda Univ.

8025
*A Multi-Agent System-Based Intelligent Heuristic Optimal Control System for a Large-Scale Power Plant [CEC7206]*
Jin S. Heo  Pennsylvania State Univ.
Kwang Y. Lee  Pennsylvania State Univ.
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<td>Genetic Operators and Sequencing in the GAuGE System [CEC7620]</td>
<td>Miguel Nicolau et al.</td>
<td>Gulf Islands BCD</td>
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<td>Context-Based Technique for Biomedical Term Classification [CEC7191]</td>
<td>Hisham Al-Mubaid</td>
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<td>A Mathematical Modeling Technique for the Analysis of the Dynamics of a Simple Continuous EDA [CEC7211]</td>
<td>Bo Yuan et al.</td>
<td>Gulf Islands BCD</td>
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<td>A Graphic Clustering Algorithm Based on MMAS [CEC7096]</td>
<td>Huzihong Yang et al.</td>
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<td>Biclustering of Gene Expression Data Using EDA-GA Hybrid [CEC7091]</td>
<td>Feng Liu et al.</td>
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<td>A Scatter Search Based Approach with Approximate Evaluation for the Heterogeneous Probabilistic Traveling Salesman Problem [CEC7637]</td>
<td>Yu-Hsin</td>
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<td>Ke Chen et al.</td>
<td>Jun Ballroom A</td>
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<td>Selection of Distributed Sensors for Multiple Time Series Prediction [IJCNN1834]</td>
<td>Chamila Walgampaya et al.</td>
<td>Jun Ballroom A</td>
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<td>Forecasting with Computational Intelligence - An Evaluation of Support Vector Regression and Artificial Neural Networks [IJCNN1989]</td>
<td>Sven F. Crone et al.</td>
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<td>Learning Cyclic Oscillation by Digital Type Recurrent Neural Network [IJCNN1053]</td>
<td>Hidenori Naganuma et al.</td>
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<td>Supervised RBFNN Centers and Radii Initialization for Function Approximation Problems [IJCNN1643]</td>
<td>Alberto Guileen et al.</td>
<td>Jun Ballroom A</td>
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<td>Kernel Partial Least Squares for the Identification of Mixture Content from TeraHerz Spectra [IJCNN1991]</td>
<td>Long Han et al.</td>
<td>Jun Ballroom A</td>
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9:00AM
Improving RBF-DDA Performance on Optical Character Recognition through Weights Adjustment [IJCNN1685]
Adriano Oliveira  Univ. of Pernambuco
Silvio Meira  Federal Univ. of Pernambuco

9:20AM
Dynamic Hyperparameter Scaling Method for LVQ Algorithms [IJCNN1622]
Sambu Seo  Berlin Univ. of Tech.
Klaus Obermayer  Berlin Univ. of Tech.

WedAM-3
Pattern Recognition & Diagnostics I
Chairs:  Neil Eklund & Kai Goebel

8:00AM
Neighbourhood Vector as Shape Parameter for Pattern Recognition [IJCNN1932]
Ing Ren Tsang  Federal Univ. of Pernambuco
Ing Jyh Tsang  Alcatel Bell N.V.

8:20AM
A Neural Architecture to Identify Courtesy Amount Delimiters [IJCNN1963]
Cleber Zanchettin  AiLeader Tech.
George Cavalcanti  Federal Univ. of Pernambuco
Rodrigo Doria  AiLeader Tech.
Eduardo Silva  AiLeader Tech.
Juliano Rabelo  AiLeader Tech.
Bezerra Byron  Federal Univ. of Pernambuco

8:40AM
Classification of Normal and Hypoxia EEG Based on Approximate Entropy and Welch Power-spectral-density [IJCNN1044]
Meng Hu  Zhejiang Univ.
Jiaojie Li  Hangzhou Sanitarium of PLA Airforce
Guang Li  Zhejiang Univ.
Xiaowei Tang  Zhejiang Univ.
Qiuping Ding  Zhejiang Univ.

9:00AM
Using Meta-features to Boost the Performance of Classifier Fusion Schemes for Time Series Data [IJCNN2010]
Neil Eklund  GE Global Research
Kai Goebel  GE Global Research

9:20AM
Improving Speaker Identification Rate Using Fractals [IJCNN1005]
Vincent Nelwamondo  Univ. of the Witwatersrand
Unathi Mahola  Univ. of the Witwatersrand
Tshilidzi Marwala  Univ. of the Witwatersrand

9:40AM
Hidden Markov Models and Gaussian Mixture Models for Bearing Fault Detection Using Fractals [IJCNN1006]
Tshilidzi Marwala  Univ. of the Witwatersrand
Unathi Mahola  Univ. of the Witwatersrand
Fulufhelo Nelwamondo  Univ. of the Witwatersrand

Junior Ballroom C
WedAM-4
Attractor Neural Networks & Associative Memory I
Chairs:  Filip Piekniewski & Vijayan Asari

8:00AM
On the Probability of Finding Local Minima in Optimization Problems [IJCNN1312]
Boris Kryzhanovsky  Inst. of Optical Neural Tech.
Bashir Magomedov  Inst. of Optical Neural Tech.
Anatoly Fonarev  Kean Univ.

8:20AM
Domain Dynamics in Hopfield Model [IJCNN1314]
Mikhail Kryzhanovsky  Inst. of Optical Neural Tech.
Bashir Magomedov  Inst. of Optical Neural Tech.
Anatoly Fonarev  Kean Univ.
Boris Kryzhanovsky  Inst. of Optical Neural Tech.

8:40AM
A Columnar Competitive Model with Simulated Annealing for Solving Combinatorial Optimization Problems [IJCNN1301]
Eu Jin Teoh  National Univ. of Singapore
Huaqin Tang  ST Microelectronics
Kay Chen Tan  National Univ. of Singapore

9:00AM
Mesoscopic Approach to Locally Hopfield Neural Networks in Presence of Correlated Patterns [IJCNN1540]
Filip Piekniewski  N.C.U

9:20AM
Hetero Chaotic Associative Memory for Successive Learning with Multi-Winners Competition [IJCNN1475]
Masanao Ando  Tokyo Univ. of Tech.
Yusuke Okuno  Tokyo Univ. of Tech.
Yuko Osana  Tokyo Univ. of Tech.

9:40AM
On the Divergence Dynamics of the Nonlinear Line of Attraction [IJCNN1560]
Ming-Jung Seow  ODU Vision Lab.
Vijayan Asari  ODU Vision Lab.

Junior Ballroom D
WedAM-5
SS-Si: Constructive/Hierarchical Self-Organizing Maps
Chair:  Ernesto Cuadros-Vargas

8:00AM
A Self-Organizing Map Based Approach for Document Clustering and Visualization [IJCNN1103]
Gary Yen  Oklahoma State Univ.
Zheng Wu  Oklahoma State Univ.

8:20AM
Geodesic Nonlinear Mapping Using the Neural Gas Network [IJCNN1446]
Pablo A. Estevez  Univ. of Chile
Andres Chong  Univ. of Chile
8:00AM
Using Large Databases and Self-Organizing Maps without tears [IJCNN1702]
Carlos Bedregal
Universidad Catolica San Pablo
Ernesto Cuadros-Vargas
Universidad Catolica San Pablo

9:00AM
GViSOM for Multivariate Mixed Data Projection and Structure Visualization [IJCNN1223]
Chung-Chian Hsu
National Yunlin Univ. of Sci. & Tech.
Kuo-Min Wang
National Yunlin Univ. of Sci. & Tech.
Sheng-Hsuan Wang
National Yunlin Univ. of Sci. & Tech.

9:20AM
Accelerated Codebook Searching in a SOM-based Vector Quantizer [IJCNN1456]
Arijit Laha
Inst. for Devpt. & Research. in Banking Tech.
Bhabatosh Chanda
Indian Statistical Inst.
Nikhil R. Pal
Indian Statistical Inst.

9:40AM
Fuzzy Integrals as a Tool for Obtaining an Indicator for Quality of Life [FUZZ4324]
Dick Botteldooren
Ghent Univ.
Andy Verkeyn
Guidance Corporation
Bernard De Baets
Ghent Univ.
Peter Lercher
Medical Univ. of Innsbruck

WedAM-7
SS-S1: Soft Computing in Image Processing: Recent Advances I
Chair:
Mike Nachtegael

8:00AM
Fuzzy Vector Quantization of Images Based on Local Fractal Dimensions [FUZZ4131]
Kazuya Sasazaki
Muroran Inst. of Tech.
Hiroshige Ogasawara
Muroran Inst. of Tech.
Sato Saga
Muroran Inst. of Tech.
Junji Maeda
Muroran Inst. of Tech.
Yukinori Suzuki
Muroran Inst. of Tech.

8:20AM
A Fuzzy Reasoning Classification Method for Pattern Recognition [FUZZ4282]
Emmanuel Schmitt
Automatic Research Center of Nancy
Cyril Mazaud
Automatic Research Center of Nancy
Vincent Bombardier
Automatic Research Center of Nancy
Pascal Lhoste
Research Dept. in Innovative Processes

8:40AM
3D Forensic Model Reconstruction by Scatter Search-based Pair-wise Image Registration [FUZZ4251]
Jose Santamaria
Univ. of Granada
Oscar Cordon
Univ. of Granada
Sergio Damas
Univ. of Granada
Inmaculada Aleman
Univ. of Granada
Miguel Botella
Univ. of Granada

9:00AM
A Belief-based Pixel Labeling Strategy for Medical and Satellite Image Segmentation [FUZZ4278]
Patrick Vannoorenberghe
Universite Paul Sabatier
Guy Flouzat
Universite Paul Sabatier

9:20AM
A Fuzzy Approach to Image Texture Representation Applied to Visual Coarseness Description [FUZZ4470]
Jesus Chamorro-Martinez
Univ. of Granada
Elena Galan-Perales
Univ. of Granada
Daniel Sanchez
Univ. of Granada
Belen Prados-Suarez
Univ. of Jaen

9:40AM
Confidence Measure as Fuzzy Measure in Color Edge Detection [FUZZ4481]
Aureli Soria-Frisch
Tech. Dept. Pompeu Fabra Univ.
Abderrahim Kassid
Tech. Univ. Berlin
TECHNICAL PROGRAM LISTING

Pavilion Ballroom B

WedAM-8
Fuzzy Systems Applied to Robotics
Chair: Kuldip Rattan

8:00AM
An Extension to Fuzzy Qualitative Trigonometry and Its Application to Robot Kinematics [FUZZ4307]
Honghai Liu  Univ. of Portsmouth
David Brown  Univ. of Portsmouth

8:20AM
Prioritizing Fuzzy Behaviors in Multi-robot Pursuit Teams [FUZZ4349]
Brent Eskridge  Univ. of Oklahoma
Dean Hougen  Univ. of Oklahoma

8:40AM
Comparing Robustness and Performance of Hybrid and Non-hybrid Fuzzy Controllers aimed to guide a simulated robot [FUZZ4104]
Patrick Barbosa Moratori  Federal Univ. of Rio de Janeiro
Adriano Joaquim de Oliveira Cruz  Federal Univ. of Rio de Janeiro
Cabral Lima  Federal Univ. of Rio de Janeiro

9:00AM
A Multi-layered Fuzzy Controller for a Mobile Robot [FUZZ4385]
Ajit Khatra  Wright State Univ.
Priti Gaonkar  Wright State Univ.
Kuldip Rattan  Wright State Univ.

9:20AM
Behaviour Coordination of Virtual Agent Navigation using Fuzzy Logic [FUZZ4107]
Jafreezal Jaafar  Univ. of Edinburgh
Eric McKenzie  Univ. of Edinburgh

9:40AM
Behavior-based Robot Control Using Fuzzy Discrete Event System [FUZZ4274]
Rajibul Huq  Memorial Univ. of Newfoundland
George K. J. Mann  Memorial Univ. of Newfoundland
Raymond G. Gosine  Memorial Univ. of Newfoundland

Pavilion Ballroom C

WedAM-9
Co-Evolution
Chair: Julian Togelius

8:00AM
Sequential versus Parallel Cooperative Coevolutionary Algorithms for Optimization [CEC7702]
Elena Popovici  George Mason Univ.
Kenneth De Jong  George Mason Univ.

Pavilion Ballroom D

WedAM-10
SS-Z2: Swarm Intelligence IV
Chair: Xiaodong Li

8:00AM
Finding Social Landscapes for PSOs via Kernels [CEC7272]
W b Langdon  Univ. of Essex
Riccardo Poli  Univ. of Essex

8:20AM
A Study of Concurrency in the Ant Colony System Algorithm [CEC7473]
Ena Rudge  Univ. of York
Daniel Kudenko  Univ. of York
Dimitar Kazakov  Univ. of York

8:40AM
Determining RNA Secondary Structure using Set-based Particle Swarm Optimization [CEC7528]
Marais Neethling  Univ. of Pretoria
Andries Engelbrecht  Univ. of Pretoria

9:00AM
A distributed Particle Swarm Optimization Algorithm for Swarm Robotic Applications [CEC7467]
James Hereford  Murray State Univ.
9:20AM

**Diversity-based Information Exchange among Multiple Swarms in Particle Swarm Optimization [CEC7566]**

Gary Yen  Oklahoma State Univ.
Moayed Daneshyari  Oklahoma State Univ.

9:40AM

**In Search of the Essential Particle Swarm [CEC7669]**

James Kennedy  Bureau of Labor Statistics

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**WedAM-11**

**Multi-Objective Optimization I**

Chair:  Kalyanmoy Deb

8:00AM

**moPGA: Towards a New Generation of Multi-objective Genetic Algorithms [CEC7162]**

Harold Soh  Inst. of High Performance Computing
Michael Kirley  Univ. of Melbourne

8:20AM

**Analyzing the Performance of Hybrid Evolutionary Algorithms for the Multiobjective Quadratic Assignment Problem [CEC7667]**

Deon Garrett  Univ. of Memphis
Dipankar Dasgupta  Univ. of Memphis

8:40AM

**Dynamic Population Size in PSO-based Multiobjective Optimization [CEC7017]**

Wen-Fung Leong  Oklahoma State Univ.
Gary Yen  Oklahoma State Univ.

9:00AM

**Coevolutionary Multi-objective EAs: The Next Frontier? [CEC7515]**

Mark Kleeman  Air Force Inst. of Tech.
Gary Lamont  Air Force Inst. of Tech.

9:20PM

**A Multiobjective Genetic Fuzzy Approach for Intelligent System-level Exploration in Parameterized VLIW Processor Design [CEC7354]**

Giuseppe Ascia  Univ. of Catania
Vincenzo Catania  Univ. of Catania
Alessandro Di Nuovo  Univ. of Catania
Maurizio Palesi  Univ. of Catania
Davide Patti  Univ. of Catania

9:40AM

**Maximising Hypervolume for Selection in Multi-objective Evolutionary Algorithms [CEC7721]**

Lucas Bradstreet  Univ. of Western Australia
Luigi Barone  Univ. of Western Australia
Lyndon While  Univ. of Western Australia

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**WedAM-12**

**SS-2b: Evolutionary Clustering**

Chair:  Julia Handl

8:00AM

**On Clustering in Evolutionary Computation [CEC7660]**

Jie Yao  Concordia Univ.
Nawwaf Kharma  Concordia Univ.
Yu Qing Zhu  Concordia Univ.

8:20AM

**Reproducing the Results of Ant-based Clustering without Using Ants [CEC7462]**

Swee Chuan Tan  Monash Univ.
Kai Ming Ting  Monash Univ.
Shyh Wei Teng  Monash Univ.

8:40AM

**EC5A0: Evolutionary Clustering with Self Adaptive Genetic Operators [CEC7747]**

Elizabeth Leon  Univ. Nacional de Colombia
Olfa Nasraoui  Univ. of Louisville
Jonatan Gomez  Univ. Nacional de Colombia

9:00AM

**Towards a Fast Evolutionary Algorithm for Clustering [CEC7430]**

Vinicius S. Alves  Catholic Univ. of Santos – UniSantos
Ricardo J. G. B. Campello  Catholic Univ. of Santos – UniSantos
Eduardo R. Hruschka  Catholic Univ. of Santos – UniSantos

9:20AM

**Document Clustering Using Differential Evolution [CEC7063]**

Ajith Abraham  Chung Ang Univ. (CAU)
Swagatam Das  Jadavpur Univ.
Amit Konar  Jadavpur Univ.

9:40AM

**Data Clustering with Particle Swarms [CEC7075]**

Sandra C. M. Cohen  Catholic Univ. of Santos
Leandro N. de Castro  Catholic Univ. of Santos

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**WedAM-13**

**SS-S7: Biologically Motivated Systems- Fuzzy Brain & Fuzzy Evolution**

Chair:  Isao Hayashi

8:00AM

**A Hippocampal-inspired Self-Organising Learning Memory Model with Analogical Reasoning for Decision Support [FUZZ4102]**

Whye Loon Tung  Nanyang Tech. Univ.
Chai Quek  Nanyang Tech. Univ.
8:20AM  
*Interaction and Intelligence in Living Neuronal Networks Connected to Moving Robot* [FUZZ4516]  
Suguru N. Kudoh  National Inst. of AIST  
Takahisa Taguchi  National Inst. of AIST  
Isao Hayashi  Kansai Univ.

8:40AM  
*Exploratory Approach to fMRI Study with Fuzzy Clustering and General Linear Model* [FUZZ4150]  
Hidetomo Ichihashi  Osaka Prefecture Univ.  
Katsuhiko Honda  Osaka Prefecture Univ.  
Akira Notsu  Osaka Prefecture Univ.  
Takafumi Kurokawa  Osaka Prefecture Univ.

9:00AM  
*Effectiveness of the Block Splitting Approach on Morphological Associative Memory without a Kernel Image* [FUZZ4175]  
Takashi Saeki  Kyushu Inst. of Tech.  
Tsutomu Miki  Kyushu Inst. of Tech.

9:20AM  
*Neurotransmitters in Emotional Model of A Vision-Based Partner Robot for Natural Communication with Human* [FUZZ4464]  
Naoyuki Kubota  Tokyo Metropolitan Univ.  
Shintaro Omote  Mitsubishi Heavy Industries, Ltd.  
Yoshikazu Mori  Ibaraki Univ.

9:40AM  
*Sleep Learning -- An Incremental Learning System Inspired by Sleep Behavior--* [FUZZ4222]  
Yamauchi Koichiro  Hokkaido Univ.  
Hayami Jiro  Hokkaido Univ.

8:20AM  
*Application of Q-measure Techniques to Adaptive Nonlinear Digital Filtering* [FUZZ4037]  
Magdi Mohamed  Motorola Labs  
Weimin Xiao  Motorola Labs

8:40AM  
*Fuzzy Fault Tolerant Controller for Actuator Failures during Aircraft Autolanding* [FUZZ4238]  
Hai-Jun Rong  Nanyang Tech.Univ.  
Guang-Bin Huang  Nanyang Tech.Univ.  
N. Sundararajan  Nanyang Tech.Univ.  
P. Saratchandran  Nanyang Tech.Univ.

9:00AM  
*Intelligent Data Analysis for Performance Evaluation and Fault Diagnosis in Complex Systems* [FUZZ4435]  
Ganche Vachkov  Kagawa Univ.

9:20AM  
*Probabilistic Fuzzy Cognitive Map* [FUZZ4493]  
Heng-Jie Song  Nanyang Technica  
Zhi-Qi Shen  Nanyang Technica  
Chun-Yan Miao  Nanyang Technica  
Zhi-Qiang Liu  Univ. of Hong Kong  
Yuan Miao  Computer Sci. & Mathematics

9:40AM  
*Multiscale Face Detection: A New Approach to Robust Face Detection* [FUZZ4193]  
Mehdi Aghagolzadeh  Univ. of Tehran  
Hamid Soltanian-Zadeh  Henry Ford Health Sys.  
Babak Araabi  Univ. of Tehran

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**WedAM-15**

**SS-Sa: Multi-Objective Machine Learning**  
Chair:  Yaochu Jin

8:00AM  
*Optimization of Neural Networks with Multi-Objective LASSO Algorithm* [IJCNN1260]  
Marcelo Costa  Universidade Federal de Minas Gerais  
Antonio Braga  Universidade Federal de Minas Gerais

8:20AM  
*Semi-supervised Feature Selection via Multiobjective Optimization* [IJCNN1487]  
Julia Handl  Univ. of Manchester  
Joshua Knowles  Univ. of Manchester

8:40AM  
*An Evaluation of Over-Fit Control Strategies for Multi-Objective Evolutionary Optimization* [IJCNN1756]  
Paulo Vinicius Wolski Radtke  Ecole de Technologie Superieure  
Tony Wong  Ecole de Technologie Superieure  
Robert Sabourin  Ecole de Technologie Superieure

9:00AM  
*Alleviating Catastrophic Forgetting via Multi-Objective Learning* [IJCNN1762]  
Yaochu Jin  Honda Research Inst. Europe  
Bernhard Sendhoff  Honda Research Inst. Europe

9:20AM  
*Rule Induction Using Multi-Objective Metaheuristics: Encouraging Rule Diversity* [IJCNN1917]  
Alan Reynolds  Univ. of East Anglia  
Beatriz de la Iglesia  Univ. of East Anglia
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| 10:30AM-11:30AM | Grand Ballroom | WCCI Plenary Talk, Wednesday | Winning the DARPA Grand Challenge  
Sebastian Thrun  
Chair: Lipo Wang |
| 1:00PM    | Gulf Islands BCD | WedMM-1  
Statistical & Pattern Recognition Algorithms I | The Exchange Monte Carlo Method for Bayesian Learning in  
Singular Learning Machines [IJCNN1394]  
Kenji Nagata  
Sumio Watanabe  
The Exchange Monte Carlo Method for Bayesian Learning in  
Singular Learning Machines [IJCNN1394]  
Kenji Nagata  
Sumio Watanabe  
The Exchange Monte Carlo Method for Bayesian Learning in  
Singular Learning Machines [IJCNN1394]  
Kenji Nagata  
Sumio Watanabe  
The Exchange Monte Carlo Method for Bayesian Learning in  
Singular Learning Machines [IJCNN1394]  
Kenji Nagata  
Sumio Watanabe  
The Exchange Monte Carlo Method for Bayesian Learning in  
Singular Learning Machines [IJCNN1394]  
Kenji Nagata  
Sumio Watanabe |
| 1:20PM    | Junior Ballroom A   | WedMM-2  
Supervised Training Methods | Accelerating the Multilayer Perceptron Learning with the  
Davidon Fletcher Powell Algorithm [IJCNN2109]  
Sabeur Abid  
Aymen Moeulhi  
Farhat Fnaiech |
| 1:40PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | An Autonomous Diagnostics and Prognostics Framework for  
Condition-based Maintenance [IJCNN1353]  
Pundarikaksha Baruah  
Ratna Babu Chinnam  
Dimitar Filev |
| 2:00PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | An Adaptive Penalty-based Learning Extension for  
Backpropagation and its Variants [IJCNN1468]  
Boris Jansen  
Kenji Nakayama |
| 2:20PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | A Supervised STDP Based Training Algorithm with Dynamic  
Threshold Neurons [IJCNN1538]  
Thomas Strain  
Liam McDaid  
Liam Maguire  
Thomas McGinnity |
| 2:40PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | Divide and Conquer Strategies for MLP Training [IJCNN1651]  
Smriti Bhagat  
Dipti Deodhare  
Centre for Artificial Intelligence & Robotics |
| 3:00PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | An Incremental Learning Algorithm of Ensemble Classifier  
Systems [IJCNN1786]  
Takuya Kidera  
Seiichi Ozawa  
Shigeo Abe |
| 3:20PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | Automatic Knowledge Acquisition: Recognizing Music Notation  
with Methods of Centroids and Classifications Trees [IJCNN1595]  
Wladyslaw Homenda  
Marcin Luckner |

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| 1:00PM    | Junior Ballroom B   | WedMM-2  
Supervised Training Methods | Accelerating the Multilayer Perceptron Learning with the  
Davidon Fletcher Powell Algorithm [IJCNN2109]  
Sabeur Abid  
Aymen Moeulhi  
Farhat Fnaiech |
| 2:00PM    | Junior Ballroom B   | WedMM-3  
Pattern Recognition & Diagnostics II | An Autonomous Diagnostics and Prognostics Framework for  
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Marcin Luckner |
1:20PM
Improving Disturbance Classification by Combining Multiple Artificial Neural Networks [IJCNN1608]
Milde Lira Ufpe
Ronaldo Aquino Ufpe
Aida Ferreira Cefet
Afonso Carvalho Ufpe
Carlos Lira Ufpe

1:40PM
Health Monitoring of Complex Systems Using Parallel Neural Networks [IJCNN2082]
Hosein Marzi St. Francis Xavier Univ.

2:00PM
Support Vector Machines and Wavelet Packet Analysis for Fault Detection and Identification [IJCNN1592]
Estefan Ortiz Univ. of Hawaii at Manoa
Vassilis Syrmos Univ. of Hawaii at Manoa

2:20PM
Hierarchical K-means Clustering Using New Support Vector Machines for Multi-class Classification [IJCNN1019]
David Casasent Carnegie Mellon Univ.

2:40PM
Modular Multilayer Perceptron for WLAN Based Localization [IJCNN1437]
Uzair Ahmad Kyung Hee Univ.
Andrey Gavrilov Kyung Hee Univ.
Sungyoung Lee Kyung Hee Univ.
Young-Koo Lee Kyung Hee Univ.

2:00PM
An Auto-Associative Neural Network for Information Retrieval [IJCNN1034]
Guy Desjardins Univ. of Quebec in Montreal
Robert Proulx Univ. of Quebec in Montreal
Robert Godin Univ. of Quebec in Montreal

2:20PM
Stability of Equilibrium Points and Storage Capacity of Hopfield Neural Networks with Higher Order Nonlinearity [IJCNN903]
Mohammad Reza Rajati Amirkabir Univ. of Tech.
Mohammad Bagher Menhaj Amirkabir Univ. of Tech.

2:40PM
Incremental Gain Analysis of Chaotic Recurrent Neural Network and Applications in Pattern Association [IJCNN1131]
Yilei Wu Nanyang Tech. Univ.
Qing Song Nanyang Tech. Univ.
Sheng Liu Nanyang Tech. Univ.

1:00PM
A New Approach to Task Segmentation in Mobile Robots by mnSOM [IJCNN1885]
M. Aziz Muslim Kyushu Inst. of Tech.
Masumi Ishikawa Kyushu Inst. of Tech.
Tetsuo Furukawa Kyushu Inst. of Tech.

1:20PM
The Identification and Extraction of Item Set Support Defined by the Weight Matrix of a Self-Organizing Map [IJCNN1600]
Vicente Baez-Monroy Univ. of York
Simon O'Keefe Univ. of York

1:40PM
Behavior of Fatigable SOM and its Application to Clustering [IJCNN2051]
Tomita Masato Tokushima Univ.
Matsushita Haruna Tokushima Univ.
Nishio Yoshifumi Tokushima Univ.

2:00PM
Automatic Content-based Image Retrieval Using Hierarchical Clustering Algorithms [IJCNN2111]
Kambiz Jarrah Ryerson Univ.
Sri Krishnan Ryerson Univ.
Ling Guan Ryerson Univ.

2:20PM
Medical Image Segmentation using a Self-organizing Neural Network and Clifford Geometric Algebra [IJCNN1588]
Jorge Rivera-Rovelo CINVESTAV
Eduardo Bayro-Corrochano CINVESTAV

2:40PM
Convergence of SOM and NG as GNC Algorithms [IJCNN1635]
Ana Gonzalez Universidad del Pais Vasco
Alicia d'Anjou Universidad del Pais Vasco
Manuel Grana Universidad del Pais Vasco
1:00PM
*T-Norms for Type-2 Fuzzy Sets* [FUZZ4157]
Carol Walker  New Mexico State Univ.
Elbert Walker  New Mexico State Univ.

1:20PM
An Investigation of a Linguistic Perceptron in a Nonlinear Decision Boundary Problem [FUZZ4439]
Sansanee Auephanwiriyakul  Chiang Mai Univ.
Sompong Dhompongsa  Chiang Mai Univ.

1:40PM
Type-2 Fuzzy Sets for Handling Uncertainty in Pattern Recognition [FUZZ4382]
Jia Zeng  City Univ. of Hong Kong
Zhi-Qiang Liu  City Univ. of Hong Kong

2:00PM
Super-Exponential Convergence of the Karnik-Mendel Algorithms Used for Type-reduction in Interval Type-2 Fuzzy Logic Systems [FUZZ4011]
Jerry Mendel  Univ. of Southern California
Feilong Liu  Univ. of Southern California

2:20PM
A Multi-SVM Fusion Model Using Type-2 FLS [FUZZ4489]
Xiujuan Chen  Georgia State Univ.
Robert Harrison  Georgia State Univ.
Yan-Qing Zhang  Georgia State Univ.
Yu Qiu  Georgia State Univ.

2:40PM
Fuzzy Logic Applications to Fire Control Systems [FUZZ4478]
Ana Del Amo  Smiths Aerospace
Javier Montero  Universidad Complutense
Daniel Gomez  Universidad Complutense

1:00PM
Robustness and Performance Evaluation of the Fuzzy Texture Spectrum encoding [FUZZ4454]
Aina Barcelo  Tech. Univ. of Catalonia
Pilar Sobrevilla  Tech. Univ. of Catalonia
Eduard Montseny  Tech. Univ. of Catalonia

2:00PM
Fuzzy Contour Matching for 3D Reconstruction and Retrieval [FUZZ4490]
Yong Li  Georgia State Univ.
Saeid Belkasim  Georgia State Univ.
Xijujuan Chen  Georgia State Univ.
Donald Edwards  Georgia State Univ.
Brian Antonsen  Georgia State Univ.

2:20PM
On Approximation Capability of Pseudo-linear Shepard Approximation Operators [FUZZ4130]
Rudas Imre J.  Budapest Tech.
Bede Barnabas  Budapest Tech.
Nobuhara Hajime  Tokyo Inst. of Tech.
Hirota Kaoru  Tokyo Inst. of Tech.

2:40PM
The Fault Diagnosis Problem; Sliding mode fuzzy dedicated observers approach [FUZZ4398]
Juan Anzurez  Universidad Michoacana de San Nicolas de Hidalgo
Bernardino Castillo  Centro de Investigacion y Estudios Avanzados

1:00PM
Testing the Suitability of Wavelet Preprocessing for TSK Fuzzy Models [FUZZ4448]
Ademola Popoola  Univ. of Surrey
Khurshid Ahmad  Trinity College Dublin

1:20PM
A Fuzzy-logic System for Detecting Oscillations in Control Loops [FUZZ4174]
Robert Babuska  Delft Univ. of Tech.
Samir Mesic  Shell Global Solutions International BV
Jelmer Van Ast  Delft Univ. of Tech.

1:40PM
Case-Based Reasoning for Fault Diagnosis and Prognosis [FUZZ4348]
Hamid Berenji  Intelligent Inference Sys. Corp.
Yan Wang  Intelligent Inference Sys. Corp.

2:00PM
The Fault Diagnosis Problem; Sliding mode fuzzy dedicated observers approach [FUZZ4398]
Juan Anzurez  Universidad Michoacana de San Nicolas de Hidalgo
Bernardino Castillo  Centro de Investigacion y Estudios Avanzados
2:20PM  
Neural Net Analysis of the Propensity for Change in Large Software Systems [FUZZ4260]  
Steven Morphet  Syracuse Research Corp.  
James Fawcett  Syracuse Research Corp.  
Kanat Bolazar  Syracuse Univ.  
Murat Gungor  Syracuse Univ.  

2:40PM  
Wavelet Neural Networks for Fault Diagnosis and Prognosis [FUZZ4322]  
Hamid Berenji  Intelligent Inference Systems Corp.  
Yan Wang  Intelligent Inference Systems Corp.  

1:20PM  
A Differential Evolution for the Tuning of a Chess Evaluation Function [CEC7265]  
Borko Boskovic  Univ. of Maribor  
Janez Brest  Univ. of Maribor  
Viljem Zumer  Univ. of Maribor  

1:40PM  
Parameter Study for Differential Evolution Using a Power Allocation Problem Including Interference Cancellation [CEC7295]  
Karin Zielinski  Univ. of Bremen  
Petra Weitkemper  Univ. of Bremen  
Rainer Laur  Univ. of Bremen  
Karl-Dirk Kammeyer  Univ. of Bremen  

2:00PM  
Opposition-based Differential Evolution for Optimization of Noisy Problems [CEC7645]  
Shahryar Rahnamayan  PhD Candidate  
Hamid Reza Tizhoosh  Univ. of Waterloo  
Magdy M.A. Salama  FIEEE  

2:20PM  
Human Designed vs. Genetically Programmed Differential Evolution Operators [CEC7642]  
Nicos Pavlidis  Univ. of Patras  
Vassilis Plagianakos  Univ. of Patras  
Dimitris Tasoulis  Univ. of Patras  
Michael Vrahatis  Univ. of Patras  

2:40PM  
Evolution of Neural Networks for Helicopter Control: Why Modularity Matters [CEC7671]  
Renzo De Nardi  Univ. of Essex  
Julian Togelius  Univ. of Essex  
Owen E. Holland  Univ. of Essex  
Simon M. Lucas  Univ. of Essex  

1:20PM  
A Genetic Algorithm Approach to Solve for Multiple Solutions of Inverse Kinematics Using Adaptive Niching and Clustering [CEC7556]  
Saleh Tabandeh  Univ. of Waterloo  
Christopher Clark  Univ. of Waterloo  
William Melek  Univ. of Waterloo  

2:00PM  
Applying Genetic Algorithms to Control Gait of Physically Based Simulated Robots [CEC7215]  
Milton Heinen  Unisinos  
Fernando Osorio  Unisinos  

2:20PM  
Implementation of Path Planning Using Genetic Algorithms on Mobile Robots [CEC7401]  
Hagen Burchardt  Univ. of Rostock  
Ralf Salomon  Univ. of Rostock  

2:40PM  
Evolving a Diverse Collection of Robot Path Planning Problems [CEC7283]  
Daniel Ashlock  Univ. of Guelph  
Theodore Manikas  Univ. of Tulsa  
Kaveh Ashenayi  Univ. of Tulsa
Orca

WedMM-11
Multi-Objective Optimization II
Chair: Carlos A. Coello Coello

1:00PM
Robustness Analysis in Multi-objective Optimization Using a Degree of Robustness Concept [CEC7651]
Carlos Barrico INESC Coimbra & Univ. of Beira Interior
Carlos Henggeler Antunes INESC Coimbra & Univ. of Beira Interior

1:20PM
Concept-based IEC for Multi-objective Search with Robustness to Human Preference Uncertainty [CEC7412]
Amiram Moshaiov Tel-Aviv Univ.
Gideon Avigad Tel-Aviv Univ.

2:00PM
Neural Network Enhancement of Multiobjective Evolutionary Search [CEC7654]
Haluk Yapicioglu Auburn Univ.
Gerry Dozier Auburn Univ.
Alice E. Smith Auburn Univ.

2:20AM
A Multi-objective Genetic Algorithm with Controllable Convergence on Knee Regions [CEC7704]
Lily Rachmawati National Univ. of Singapore
Dipti Srinivasan National Univ. of Singapore

Finback

WedMM-12
Representation & Operators I
Chair: Miguel Nicolau

1:00PM
TGIF: an Ancient Game Inspired Framework for Chromosome Representations [CEC7733]
Rick Chow Univ. of South Carolina Upstate

1:20PM
Real-parameter Optimization by Iterative Prototype Optimization with Evolved Improvement Steps [CEC7394]
Jiri Kubalik Czech Tech. Univ. in Prague

1:40PM
Shigeyoshi Tsutsui Hannan Univ.

2:00PM
An Analysis of Memetic Crossover's Impact on a Population [CEC7722]

Port Hardy

WedMM-13
SS-5g: Neural Networks Applications to Bioinformatics I
Chairs: Francesco Masulli & Roberto Tagliaferri

1:00PM
Classification Error as a Measure of Gene Relevance in Cancer Diagnosis [IJCNN1518]
Rosalia Maglietta issia cnr Bari
Annarita D'Addabbo issia cnr Bari
Ada Piepoli irccs San Giovanni Rotondo Foggia
Francesco Perri irccs San Giovanni Rotondo Foggia
Sabino Liuni itb cnr Bari

1:20PM
Feature Selection for Data Driven Prediction of Protein Model Quality [IJCNN1819]
Alfonso Montuori Politecnico di Torino
Luisa Pugliese S.A.F.AN Bioinformatics
Giovanni Raimondo Politecnico di Torino
Eros Pasero Politecnico di Torino

1:40PM
Supervised Classification and Gene Selection Using Simulated Annealing [IJCNN1933]
Maurizio Filippone CNISM & Univ. of Genova
Francesco Masulli CNISM & Univ. of Genova
Stefano Rovetta CNISM & Univ. of Genova

2:00PM
On Classification Models of Gene Expression Microarrays: The Simpler the Better [IJCNN1978]
Erinija Pranckevieciene Inst. for Biodiagnostics, NRC
Ray Somorjai Inst. for Biodiagnostics, NRC
2:20PM  
**Kernel Based Functional Gene Grouping [IJCNN1009]**  
Holger Froehlich  
Univ. of Tuebingen  
Nora Speer  
Univ. of Tuebingen  
Christian Spieth  
Univ. of Tuebingen  
Andreas Zell  
Univ. of Tuebingen  

2:40PM  
**Predicting HIV-1 T Cell Epitopes Using Bio-basis Function Neural Networks [IJCNN1533]**  
David Trudgian  
Univ. of Exeter  
Felicia Charles-Johnson  
Univ. of Exeter  
Zheng Rong Yang  
Univ. of Exeter  

WedMM-14  
**SS-Sg: Fuzzy Systems Applications- Decision Support Systems II**  
Chair: Ronald Yager  

1:00PM  
**Computational Intelligence for Risk and Disaster Management [FUZZ4192]**  
Kurt Engemann  
Iona College  
Holmes Miller  
Muhlenberg College  
Ronald Yager  
Iona College  

1:20PM  
**Fuzzy End-to-End Rate Control for Internet Transport Protocols [FUZZ4308]**  
Federico Montesino  
Microelectronics Inst. of Seville  
Diego R. Lopez  
RedIRIS, spanish NREN  
Angel Barriga  
Microelectronics Inst. of Seville  
Santiago Sanchez-Solano  
Microelectronics Inst. of Seville  

1:40PM  
**Fuzzy Goal Coordination of Large-scale Systems Using Tamura's Method [FUZZ4352]**  
Nasser Sadati  
Sharif Univ. of Tech.  
Asghar Tabatabaei balaei  
Sharif Univ. of Tech.  

2:00PM  
**Protein Sequence Alignment Based on Fuzzy Arithmetic and Genetic Algorithm [FUZZ4072]**  
Ping-Teng Chang  
Tunghai Univ.  
Lung-Ting Hung  
Tunghai Univ.  
Kuo-Ping Lin  
Tunghai Univ.  
Chih-Sheng Lin  
Tunghai Univ.  
Kuo-Chen Hung  
Tunghai Univ.  

2:20PM  
**Reconfigurable Fuzzy Automaton for Software Agents [FUZZ4503]**  
Janos Grantner  
Western Michigan Univ.  
Paolo Tamayo  
Kyocera Tech. Dept.  
Ramakrishna Gottipati  
Western Michigan Univ.  
George Fodor  
ABB Automation Tech. Products  

2:40PM  
**Developing Fuzzy Expert Systems Models for Supply Chain Complex Problem: A Comparison with Linear Programming [FUZZ4521]**  
M.H. Fazel Zarandi  
Amirkabir Univ. of Tech.  
Soroosh Saghiri  
Univ. of East Anglia  

Port McNeill  

WedMM-15  
**SS-Sb: Fifteen Years of Genetic Fuzzy Systems**  
Chair: Brian Carse  

1:00PM  
**An Efficient Approach for the Design of Transparent Fuzzy Rule-Based Classifiers [FUZZ4311]**  
Alessandro Di Nuovo  
Univ. of Catania  
Vincenzo Catania  
Univ. of Catania  

1:20PM  
**Fuzzy Clustering in Fitness Estimation Models for Genetic Algorithms and Applications [FUZZ4397]**  
Francisco Mota Filho  
State Univ. of Campinas  
Fernando Gomide  
State Univ. of Campinas  

1:40PM  
**Virtual Sensor for the Angle-of-Attack Signal in Small Commercial Aircraft [FUZZ4447]**  
Marcel Oosterom  
Delft Univ. of Tech.  
Robert Babuska  
Delft Univ. of Tech.  

2:00PM  
**A Multi-objective Cooperative Coevolutionary Algorithm for Constructing Accurate and Interpretable Fuzzy systems [FUZZ4076]**  
Zong-yi Xing  
Nanjing Univ. of Sci. & Tech.  
Yuan-Long Hou  
Nanjing Univ. of Sci. & Tech.  
Yong Zhang  
Nanjing Univ. of Sci. & Tech.  
Li-Mini Jia  
Beijing Jiaotong Univ.  
Yuexian Hou  
Tianjin Univ.  

2:20PM  
**A Cluster-Based Fuzzy-Genetic Mining Approach for Association Rules and Membership Functions [FUZZ4408]**  
Chun Hao Chen  
National Cheng-Kung Univ.  
Tzung Pei Hong  
National Univ. of Kaohsiung  
Vincent S. Tseng  
National Cheng-Kung Univ.  

2:40PM  
**Co-evolutionary Genetic Fuzzy System: A Self-adapting Approach [FUZZ4412]**  
Marcos Maruo  
Federal Univ. of Tech. of Parana  
Myriam Delgado  
Federal Univ. of Tech. of Parana
Gulf Islands BCD

### WedPM-1

**Statistical & Pattern Recognition Algorithms II**

**Chairs:** Narendra S. Chaudhari & Tshilidzi Marwala

**3:15PM**

*Pattern Classification with Missing Values using Multitask Learning* [IJCNN1391]

- Pedro J. García-Laencina, Universidad Politecnica de Cartagena
- Jose-Luis Sancho-Gomez, Universidad Politecnica de Cartagena
- Anibal R. Figueiras-Vidal, Universidad Carlos III de Madrid

**3:35PM**

*KICA Feature Extraction in Application to FNN Based Image Registration* [IJCNN1142]

- Anbang Xu, Beijing Normal Univ.
- Xin Jin, Beijing Normal Univ.
- Ping Guo, Beijing Normal Univ.
- Rongfang Bie, Beijing Normal Univ.

**3:55PM**

*Multi-Objective Data Clustering using Variable-length Real Jumping Genes Genetic Algorithm and Local Search Method* [IJCNN1205]

- Kazi Shah Nawaz Ripon, City Univ. of Hong Kong
- Chi-Ho Tsang, City Univ. of Hong Kong
- Sam Kwong, City Univ. of Hong Kong

**4:15PM**

*Preliminary Results on Noise Detection and Data Selection for Vector Quantization* [IJCNN1641]

- Rodrigo Peres, Puc-rio
- Carlos Pedreira, Ufrj

**4:35PM**

*Bayesian Training of Neural Networks Using Genetic Programming* [IJCNN1743]

- Tshilidzi Marwala, Univ. of the Witwatersrand

**4:55PM**

*A Novel Semi-supervised Learning Methods Using Support Vector Domain Description* [IJCNN1125]

- Daewon Lee, Postech
- Jaewook Lee, Postech

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### WedPM-2

**Learning & Memory**

**Chairs:** Toshihiko Matsuka & Arieta Chouchourelou

**3:15PM**

*Enhanced Walsh Function Based Distributed Associative Memory for Pattern Recognition* [IJCNN1905]

- Seong-Joo Han, POSTECH
- Se-Young Oh, POSTECH

**3:35PM**

*Lotto-type Competitive Learning with Particle Swarm Features II* [IJCNN1150]

- Andrew Luk, St. B & P Neural Investments Pty. Ltd.
- Sandra Lien, St. B & P Neural Investments Pty. Ltd.

**3:55PM**

*A Model of Human Category Learning with Dynamic Multi-objective Hypotheses Testing with Retrospective Verifications* [IJCNN1934]

- Toshihiko Matsuka, Stevens Inst. of Tech.
- Arieta Chouchourelou, Rutgers Univ.

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### WedPM-3

**Diagnostics with Neural Networks**

**Chairs:** Maryam Miradi and Andreas Molenaar

**3:15PM**

*Application of Artificial Neural Network (ANN) to PA Lifespan: Forecasting Models* [IJCNN2091]

- Maryam Miradi, Delft Univ. of Tech.
- Andreas Molenaar, Delft Univ. of Tech.

**3:35PM**

*Neural Network-based Actuator Fault Diagnosis for Attitude Control Subsystem of an Unmanned Space Vehicle* [IJCNN1117]

- Iz Al-Dein Al-Zyoud, Concordia Univ.
- Khashayar Khorasani, Concordia Univ.

**3:55PM**

*ESOFMAC: Evolving Self-Organizing Fuzzy Cerebellar Model Articulation Controller* [IJCNN1333]

- Minh Nhut Nguyen, Nanyang Tech. Univ.
- Jinfu Guo and Daming Shi, Nanyang Tech. Univ.

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**Junior Ballroom A**

**Junior Ballroom B**
4:15PM  
**A Method for Fault Classification in Transmission Lines Based on ANN and Wavelet Coefficients Energy** [IJCNN1982]  
Flavio Bezerra Costa  Federal Univ. of Campina Grande  
Kleber Melo Silva  Federal Univ. of Campina Grande  
Benemar Alencar Souza  Federal Univ. of Campina Grande  
Karcius Marcelus Colaco Dantas  Federal Univ. of Campina Grande  
Nubia Silva Dantas Brito  Federal Univ. of Campina Grande

4:15PM  
**Hybrid Model with Dynamic Architecture for Forecasting Time Series** [IJCNN1936]  
Gecyna da Soares S. Gomes  Center of Informatics,UFPE  
Andre Luis S. Maia  Center of Informatics,UFPE  
Teresa B. Ludermir  Center of Informatics,UFPE  
Francisco de A.T. De Carvalho  Center of Informatics, UFPE  
Aluizio F. R. Araujo  Center of Informatics, UFPE

4:35PM  
**Diagnosis of a Cutting Tool in a Machining Center** [IJCNN2059]  
Antonio Vallejo  Inst. Tecnologico de Estudios Superiores de Mty  
Ruben Morales  Inst. Tecnologico de Estudios Superiores de Mty  
Ciro Rodriguez  Inst. Tecnologico de Estudios Superiores de Mty  
Enrique Sucar  Inst. Nacional de Optica y Electrica

4:35PM  
**Nonlinear System Identification Based on B-Spline Neural Network and Modified Particle Swarm Optimization** [IJCNN1755]  
Leandro dos Santos Coelho  Pontifical Catholic Univ. of Parana  
Renato Krohling  Univ. Dortmund

4:55PM  
**A Dynamic Neural Network-based Reaction Wheel Fault Diagnosis for Satellites** [IJCNN1797]  
Liying Ma  Tokyo Polytechnic Univ.  
Khashayar Khorasani  Concordia Univ.  
Z. Q. Li  Concordia Univ.

4:55PM  
**Electric Load Forecasting using Scatter Search Based Weighted Average Weather Conditions** [IJCNN1813]  
Masayuki Kobayashi  Chubu Electric Power Co.  
Tetsuya Yukawa  Chubu Electric Power Co.  
Yasuhiro Kuze  Chubu Electric Power Co.  
Tetsuro Matsu  Fuji Electric Advanced Tech. Co.  
Tatsuya Iizaka  Fuji Electric Advanced Tech. Co.  
Yoshikazu Fukuyama  Fuji Electric Advanced Tech. Co.

4:15PM  
**Temporal Data Analysis, Prediction & Forecasting**  
Chairs: Salvatore Marra & Francesco Morabito

3:15PM  
**A Neuro-Immune Network for Solving the Traveling Salesman Problem** [IJCNN1238]  
Rodrigo Pasti  UniSantos  
Leandro de Castro  UniSantos

3:35PM  
**The Self-Organizing Hierarchical Variance Map** [IJCNN2110]  
Matthew Kyan  Univ. of Sydney  
Ling Guan  Univ. of Sydney

3:55PM  
**Fast Competition Approach using Self Organizing Map in Multivariate Data Applications** [IJCNN1534]  
Alaa Sagheer  Kyushu Univ.  
Nayouki Tsuruta  Fukuoka Univ.  
Rin-Ichiro Taniguchi  Kyushu Univ.  
Daisaku Arita  Kyushu Univ.  
Sakashi Maeda  Fukuoka Univ.

4:15PM  
**Shape Morphing and Reconstruction Using Self-Organizing Feature Map** [IJCNN1561]  
Philip Igwe  Univ. of Western Ontario  
Sangole Archana  CRIR Rehabilitation Inst. of Montreal  
George Knopf  Univ. of Western Ontario
### TECHNICAL PROGRAM LISTING

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<tr>
<td>4:35PM</td>
<td><strong>A Connectionist Approach to Speech Understanding</strong> [IJCNN1994]</td>
<td>Daniel Muller, Mozart Siqueira, Philippe Navaux</td>
<td>Pavilion Ballroom A</td>
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<td>4:55PM</td>
<td><strong>Self-Organizing Feature Map (SOFM) based Deformable CAD models</strong> [IJCNN1565]</td>
<td>Philip Igwe, George Knopf</td>
<td>Pavilion Ballroom A</td>
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<td>4:35PM</td>
<td><strong>Clustering &amp; Classification Applications</strong></td>
<td>James Keller</td>
<td>Pavilion Ballroom A</td>
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<tr>
<td>3:15PM</td>
<td><strong>Effects of Weights in Weighted Fuzzy C-Means Algorithm for Room Equalization at Multiple Locations</strong> [FUZZ4511]</td>
<td>Sirichai Turmchokkasam, Sanya Mitaim</td>
<td>Pavilion Ballroom A</td>
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<td>3:35PM</td>
<td><strong>Improved Classification of Surface Defects for Quality Control of Car Body Panels</strong> [FUZZ4105]</td>
<td>Christian Doering, Xiaomeng Wang, Andreas Eichhorn, Rudolf Kruse</td>
<td>Pavilion Ballroom A</td>
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<td>4:15PM</td>
<td><strong>Similarity Classifier using Measure Derived from Yus Norms Applied to Medical Data Sets</strong> [FUZZ4053]</td>
<td>Pasi Luukka</td>
<td>Pavilion Ballroom A</td>
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<td>4:35PM</td>
<td><strong>Detection and Discrimination of Land Mines based on Edge Histogram Descriptors and Fuzzy K-Nearest Neighbors</strong> [FUZZ4407]</td>
<td>Hichem Frigui, Paul Gader</td>
<td>Pavilion Ballroom A</td>
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<tr>
<td>4:55PM</td>
<td><strong>Meaningful Segmentation of Offline Individual Handwritten Numeric Characters</strong> [FUZZ4248]</td>
<td>Rukshan Batuwita, Dharmapriya Bandara,</td>
<td>Pavilion Ballroom B</td>
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<td>4:35PM</td>
<td><strong>Clustering &amp; Classification Applications</strong></td>
<td>James Keller</td>
<td>Pavilion Ballroom B</td>
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<tr>
<td>3:15PM</td>
<td><strong>Imprecise Regression and Regression on Fuzzy Data - A Preliminary Discussion</strong> [FUZZ4288]</td>
<td>Mathieu Serrurier, Henri Prade</td>
<td>Pavilion Ballroom B</td>
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<td>4:15PM</td>
<td>Forecasting Models for the Ten-day Streamflow of Kao-Ping River [FUZZ4141]</td>
<td>Chin-Hui Liu Feng Chia Univ. Chang-Shian Chen Feng Chia Univ. Hui-Chen Su Feng Chia Univ. You-Da Chung Feng Chia Univ.</td>
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<td>4:55PM</td>
<td>Supply Chain Real Time Coordination Method Based on Buyback Contract with Fuzzy Random Demand [FUZZ4080]</td>
<td>Xiangyang Li Harbin Inst. of Tech. Zhigang Zhao Harbin Inst. of Tech.</td>
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**WedPM-9**

**Evolutionary Robotics II**

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<tr>
<th>Time</th>
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<th>Authors</th>
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<tbody>
<tr>
<td>3:35PM</td>
<td>A Fuzzy-Evolutionary Algorithm for Simultaneous Localization and Mapping of Mobile Robots [CEC7200]</td>
<td>Momotaz Begum Memorial Univ. of Newfoundland George K. I. Mann Memorial Univ. of Newfoundland Raymond Gosine Memorial Univ. of Newfoundland</td>
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**WedPM-10**

**SS-Zh: Differential Evolution II**

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>3:35PM</td>
<td>Opposition-Based Differential Evolution Algorithms [CEC7281]</td>
<td>Shahryar Rahnamayan PhD Candidate Hamid Reza Tizhoosh Univ. of Waterloo Magdy M.A. Salama IEEE</td>
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**4:15PM**

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<tr>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>Automatic Fuzzy Segmentation of Images with Differential Evolution [CEC7670]</td>
<td>Swagatam Das Jadavpur Univ. Amit Konar Jadavpur Univ. Uday Chakraborty Univ. of Missouri St. Louis</td>
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**4:35PM**

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**4:55PM**

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<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Differential Evolution with Local Neighborhood [CEC7736]</td>
<td>Uday Chakraborty Univ. of Missouri St. Louis Swagatam Das Jadavpur Univ. Amit Konar Jadavpur Univ.</td>
</tr>
<tr>
<td>Differential Evolution with Local Neighborhood [CEC7736]</td>
<td>Uday Chakraborty Univ. of Missouri St. Louis Swagatam Das Jadavpur Univ. Amit Konar Jadavpur Univ.</td>
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**TECHNICAL PROGRAM LISTING**

**WedPM-11**

**SS-ZI: Evolved Art & Music**

**Chair:** Dan Ashlock  
**3:15PM**

**Simultaneous Evolution of Bracketed L-system Rules and Interpretation**  
[CEC7273]  
Daniel Ashlock  
Univ. of Guelph  
Kenneth Bryden  
Iowa State Univ.  
Stephen Gent  
Iowa State Univ.

**3:35PM**

**Modeling MIDI Music as Multivariate Time Series**  
[CEC7563]  
Alex Kalos  
Dow Chemical Company

**3:55PM**

**Using a Human-in-the-Loop Evolutionary Algorithm to Create Data-Driven Music**  
[CEC7703]  
Kris Bryden  
Iowa State Univ.

**4:15PM**

**On Evolving Multi-pheromone Ant Paintings**  
[CEC7149]  
Gary Greenfield  
Univ. of Richmond

**4:35PM**

**Evolutionary Exploration of the Mandelbrot Set**  
[CEC7531]  
Daniel Ashlock  
Univ. of Guelph

**4:55PM**

**Non-photorealistic Rendering of Images as Evolutionary Stained Glass**  
[CEC7533]  
Daniel Ashlock  
Univ. of Guelph  
Balu Karthikeyan  
Iowa State Univ.  
Kenneth Bryden  
Iowa State Univ.

---

**WedPM-12**

**Representation & Operators II**

**Chair:** Toby Richer  
**3:15PM**

**On Solving Multiobjective Bin Packing Problems Using Particle Swarm Optimization**  
[CEC7083]  
Dasheng Liu  
National Univ. of Singapore  
Kay Chen Tan  
National Univ. of Singapore  
Chi Keong Goh  
National Univ. of Singapore  
Weng Khuen Ho  
National Univ. of Singapore

**3:35PM**

**A Study of Adaptation and Random Search in Genetic Algorithms**  
[CEC7380]  
Ovidiu Gheorghe  
"Al. I. Cuza" Univ. of Iasi  
Henri Luchian  
"Al. I. Cuza" Univ. of Iasi  
Adriana Gheorghe  
"Al. I. Cuza" Univ. of Iasi

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**WedPM-13**

**SS-Sg: Neural Networks Applications to Bioinformatics II**

**Chairs:** Francesco Masulli & Roberto Tagliaferri  
**3:15PM**

**An Integrated Soft Computing Approach for Predicting Biological Activity of Potential HIV-1 Protease Inhibitors**  
[IJCNN1426]  
Razvan Andonie  
Central Washington Univ.  
Levente Fabry-Asztalos  
Central Washington Univ.  
Sarah Abdul-Wahid  
Central Washington Univ.  
Catharine Collar  
Central Washington Univ.  
Nicholas Salim  
Central Washington Univ.

**3:35PM**

**Connectionist Modeling of Dynamics of Gene Expression and Reverse Engineering Gene Regulatory Networks**  
[IJCNN1499]  
Rajat De  
Indian Statistical Inst.  
Kasturi Biswas  
Tata Consultancy Services Ltd.

**3:55PM**

**Computation Intelligence Tools for Modeling and Controlling Pharmacogenomic Systems: Genetic Programming and Neural Networks**  
[IJCNN2001]  
Alexandru Floares  
Oncological Inst. Cluj-Napoca
4:15PM  
**Classification Analysis of Surface-enhanced Laser Desorption/Ionization Mass Spectral Serum Profiles for Prostate Cancer [IJCNN2120]**  
Leif E. Peterson  Baylor College of Medicine  
Ron C. Hoogeveen  Baylor College of Medicine  
Henry J. Pownall  Baylor College of Medicine  
Joel D. Morrisett  Baylor College of Medicine

4:35PM  
**Neural Network Modeling of Species Evolution: Loss and Gain in Complete Genome [IJCNN1787]**  
Alexander Tatuzov  Moscow Inst. of Physics & Tech.  
Alexis Tatuzov  Moscow State Univ.

4:55PM  
**Classification and Clustering of Breast Cancer Images [IJCNN1772]**  
Chandra Bala  Professor, India  
Sudhir Nath  Student, India  
Arun Malhotra  Professor, India

4:15PM  
**Fuzzy Decision in Airplane Speed Control [FUZZ4416]**  
Agnaldo Lovato  Instituto Nacional de Pesquisas Espaciais - INPE  
Ernesto Araujo  Instituto Nacional de Pesquisas Espaciais - INPE  
Jose Demisio S. da Silva  Instituto Nacional de Pesquisas Espaciais - INPE

4:35PM  
**Control of Structure with Semi-active Friction Damper by Intelligent Algorithm [FUZZ4432]**  
Hong-Nan Li  Dalian Univ. of Tech.  
Da-Hai Zhao  Dalian Univ. of Tech.

4:55PM  
**A Two-Rule-based Fuzzy Logic Controller for Contrarotating Coaxial Rotors UAV [FUZZ4315]**  
Boris Vidolov  UTC - umr CNRS 6599 Heudiasyc  
Jerome De Miras  UTC - umr CNRS 6599 Heudiasyc  
Stephane Bonnet  UTC - umr CNRS 6599 Heudiasyc

4:55PM  
**Intelligent Constant Current Control for Resistance Spot Welding [FUZZ4315]**  
Mahmoud El-Banna  Wayne State Univ.  
Dimitar Filev  Ford Motor Company  
Ratna Chinnam  Wayne State Univ.
8:20AM  
Motion Based Image Deblur Using Recurrent Neural Network for Power Transmission Line Inspection Robot [IJCNN1227]  
Siyao Fu  Inst. of Auto. Chinese Academy of Sci.  

8:40AM  
A New Unsupervised Neural Network for Pattern Recognition with Spiking Neurons [IJCNN1881]  
Lorenzo Riano  Univ. of Palermo  
Riccardo Rizzo  C.N.R. - I.C.A.R.  
Antonio Chella  Univ. of Palermo  

9:00AM  
A Distortion Free Learning Algorithm for Feedforward BSS and Its Comparative Study with Feedback BSS [IJCNN2043]  
Akihide Horita  Kanazawa Univ.  
Kenji Nakayama  Kanazawa Univ.  
Akihiro Hirano  Kanazawa Univ.  
Yasuhiro Dejima  Kanazawa Univ.  

8:40AM  
Various Spike-trains from a Digital Spiking Neuron: Analysis of Inter-spike Intervals and their Modulation [IJCNN1469]  
Hiroyuki Torikai  Hosei Univ.  
Yoshiaki Shimizu  Hosei Univ.  
Toshimichi Saito  Hosei Univ.  

9:00AM  
Noise Resistance and Enhancement of Neural Performance by Using Spike Signals [IJCNN1514]  
Noriyasu Homma  Tohoku Univ.  
Madan Gupta  Univ. of Saskatchewan  
Zeng-Guang Hou  Chinese Academy of Sci.s  

9:20AM  
Observations of Olfactory Information Flows within Brain of the Terrestrial Slug, Inciralia frustorferi. [IJCNN1530]  
Yoshinari Makino  Research Inst. of Electrical Communication  
Hisanori Makinae  National Research Inst. of Police Sci.  
Tsukasa Obara  Research Inst. of Electrical Communication  
Haruki Miura  Research Inst. of Electrical Communication  
Masafumi Yano  Research Inst. of Electrical Communication  

9:40AM  
A Learning Method for Synthesizing Spiking Neural Oscillators [IJCNN1914]  
Yasuaki Kuroe  Kyoto Inst. of Tech.  
Hitoshi Iima  Kyoto Inst. of Tech.  

9:00AM  
Create Stable Neural Networks by Cross-validation [IJCNN2048]  
Yong Liu  Univ. of Aizu  

8:00AM  
A Weighted Voting and Sequential Combination of Classifiers Scheme for Human Face Recognition [IJCNN1844]  
Xiaoyan Mu  Rose-Hulman Inst. of Tech.  
Paul Watta  Univ. of Michigan  
Mohamad Hassoun  Wayne State Univ.  

9:00AM  
A New Unsupervised Learning I  
Chair: Yong Liu  

8:00AM  
Optimal In-Place Learning and the Lobe Component Analysis [IJCNN1990]  
Juyang Weng  Michigan State Univ.  
Nan Zhang  Michigan State Univ.  

8:20AM  
Classification using Multi-SOMs and Multi-Neural Gas [IJCNN1924]  
Nils Goerke  Dept. of Neural Comput.  
Alexandra Scherbart  Univ. of Bonn  

8:20AM  
An Extension Neural Network and Genetic Algorithm for Bearing Fault Classification [IJCNN1060]  
Shakir Mohamed  Univ. of the Witwatersrand  
Thando Tettey  Univ. of the Witwatersrand  
Tshilidzi Marwala  Univ. of the Witwatersrand  

9:00AM  
Improvement of Image Classification with Wavelet and Independent Component Analysis (ICA) based on a Structured Neural Network [IJCNN2034]  
Weibao Zou  Hong Kong Polytechnic Univ.  
Yan Li  Univ. of Southern Queensland  
King Chuen Lo  Hong Kong Polytechnic Univ.  
Zheru Chi  Hong Kong Polytechnic Univ.  

9:00AM  
Relative Gradient Learning for Independent Subspace Analysis [IJCNN1076]  
Heeyoul Choi  Boston Univ.  
Seungjin Choi  Pohang Univ. of Sci. & Tech.  

9:20AM  
Create Stable Neural Networks by Cross-validation [IJCNN2048]  
Yong Liu  Univ. of Aizu  

8:20AM  
Improved Snake Model for Fast Image Segmentation [IJCNN1719]  
Chi-Cheng Ting  National Taiwan Ocean Univ.  
Jhan-Syuan Yu  National Taiwan Ocean Univ.  
Jian-Shuen Tseng  National Taiwan Ocean Univ.  
Jung-Hua Wang  National Taiwan Ocean Univ.  

9:20AM  
**Automatic Road Sign Recognition Using Neural Networks**  
[IJCNN1662]  
Yok YenNguwi  
Univ. of Newcastle  
Abbas Kouzani  
Univ. of Newcastle

9:40AM  
**Particle Tracking Velocimetry Using Cellular Neural Network**  
[IJCNN1542]  
Kazuo Ohmi  
Osaka Sangyo Univ.  
Achyut Sapkota  
Osaka Sangyo Univ.

8:00AM  
**Fast Modifications of the SpikeProp Algorithm**  
[IJCNN1737]  
Sam McKennoch  
Univ. of Washington  
Dingding Liu  
Univ. of Washington  
Linda Bushnell  
Univ. of Washington

8:20AM  
**Application of the Levenberg-Marquardt Method to the Training of Spiking Neural Networks**  
[IJCNN1556]  
Sergio Silva  
Univ. of Algarve  
Antonio Ruano  
Univ. of Algarve

8:40AM  
**Controlling Chaos in Chaotic Bidirectional Associative Memories**  
[IJCNN1414]  
P. P. Bueno Luciana  
Univ. of Sao Paulo  
F.R. Araujo Aluizio  
Federal Univ. of Pernambuco

9:00AM  
**Studies on the Memory Capacity and Robustness of Chaotic Dynamic Neural Networks**  
[IJCNN1703]  
Igor Beliaev  
Univ. of Memphis  
Robert Kozma  
Univ. of Memphis

9:20AM  
**Tristability in Model Neurons**  
[IJCNN1020]  
Guanghong Wang  
Tongji Univ.  
Ping Jiang  
Univ. of Bradford

8:20AM  
**Approximate Query Processing for Efficient Content-based Image Retrieval based on a Hierarchical SOM**  
[IJCNN1129]  
Yu ZhiWen  
City Univ. of Hong Kong  
Wong Hau-San  
City Univ. of Hong Kong

8:40AM  
**A Novel Cooperative Neural Learning Algorithm for Data Fusion**  
[IJCNN1232]  
Youshen Xia  
Univ. of Waterloo  
Mohamed S. Kamel  
Univ. of Waterloo

9:00AM  
**Intelligent Facial Analysis and Expression Recognition**  
[IJCNN1524]  
Spiros Ioannou  
National Tech. Univ. of Athens  
Manolis Wallace  
National Tech. Univ. of Athens  
Stefanos Kollias  
National Tech. Univ. of Athens

9:20AM  
**Adaptable Neural Networks for Content-based Video Adaptation in Low/Variable Bandwidth Communication Networks**  
[IJCNN1723]  
Anastasios Doulamis  
Univ. of Crete  
Georgios Tziritas  
Univ. of Crete

9:40AM  
**Is High Resolution Representation More Effective for Content Based Image Classification?**  
[IJCNN1868]  
Liang Chen  
Univ. of Northern British Columbia  
Naoyuki Tokuda  
Sunflare Company  
Akira Nagai  
Utsunomiya Univ.  
Xiaoyu Chen  
Wesley Chapel

8:00AM  
**System Analysis and Assessment by Fuzzy Discrete Event Simulation**  
[FUZZ4191]  
Francesco Nucci  
Univ. of Lecce  
Antonio Grieco  
Univ. of Lecce

8:20AM  
**Fuzzy Evaluation of Alternatives-The Concept of Supporting Majority and Veto-Minority**  
[FUZZ4267]  
Martin Josef Geiger  
Univ. of Hohenheim

8:40AM  
**Minimizing a Linear Objective Function under a Max-t-norm Fuzzy Relational Equation Constraint**  
[FUZZ4038]  
Sy-Ming Guu  
Yuan Ze Univ.  
Yan-Kuen Wu  
Vanung Univ.
9:00AM
*A Fuzzy Target Based Model for Decision Making Under Uncertainty* [FUZZ4207]

Van-Nam Huynh  Japan Advanced Inst. of Sci. & Tech.
Yoshiteru Nakamori  Japan Advanced Inst. of Sci. & Tech.
Mina Ryoke  Univ. of Tsukuba
Tu-Bao Ho  Japan Advanced Inst. of Sci. & Tech.

9:20AM
*On the Role of Maximal Independent Sets in Cleaning Data Sets for Supervised Ranking* [FUZZ4452]

Michael Rademaker  Ghent Univ.
Bernard De Baets  Ghent Univ.
Hans De Meyer  Ghent Univ.

9:40AM
*Fuzzy Classification for Solving the Optimal Strategy Combination of Green Engineering Industry with Interdependent Situations* [FUZZ4355]

Hua-Kai Chiou  National Defense Univ.
Gwo-Hshiung Tzeng  Kainan Univ.

ThuAM-7
Pavilion Ballroom A

8:00AM
*SS-Sc: On the Fuzzy Future of Soft Computing*
Chair:  Rudolf Seising

8:20AM
*Fuzzy Data Mining by Heuristic Rule Extraction and Multiobjective Genetic Rule Selection* [FUZZ4358]

Hisao Ishibuchi  Osaka Prefecture Univ.
Yusuke Nojima  Osaka Prefecture Univ.
Isao Kuwajima  Osaka Prefecture Univ.

8:40AM
*Context Adaptation of Mamdani Fuzzy Systems through New Operators Tuned by a Genetic Algorithm* [FUZZ4304]

Alessio Botta  IMT Lucca Inst. for Advanced Studies
Beatrice Lazzerini  Dipartimento di Ingegneria dell'Informazione
Francesco Marcelloni  Dipartimento di Ingegneria dell'Informazione

9:00AM
*A New Hybrid Method for Identification of Fuzzy Models* [FUZZ4083]

Pietari Pulkkinen  Tampere Univ. of Tech.
Hannu Koivisto  Tampere Univ. of Tech.

9:20AM
*Automatically Determine Initial Fuzzy Partitions for Neuro-Fuzzy Classifiers* [FUZZ4109]

Frank Klawonn  Univ. of Applied Sci. Braunschweig
Detlef Nauck  BT Group plc.

9:40AM
*Group-based Evolutionary Swarm Intelligence for Recurrent Fuzzy Controller Design* [FUZZ4051]

Chia-Feng Juang  National Chung Hsing Univ.
I-Fang Chung  National Yang Ming Univ.
Shin-Kuan Chen  Chung Chou Inst. of Tech.

ThuAM-8
Pavilion Ballroom B

8:00AM
*Visualizing the WCCI 2006 Knowledge Domain* [FUZZ4544]

Nees Jan van Eck  Erasmus Univ. Rotterdam
Ludo Waltman  Erasmus Univ. Rotterdam
Jan van den Berg  Erasmus Univ. Rotterdam
Uzay Kaymak  Erasmus Univ. Rotterdam

8:20AM
*The Fuzzy Ant* [FUZZ4137]

Valeri Rozin  Michael Margaliot  Tel Aviv Univ.

8:40AM
*Using Rule-based Fuzzy Cognitive Maps to Model Dynamic Cell Behavior in Voronoi Based Cellular Automata* [FUZZ4293]

Joao Carvalho  INESC-ID / Instituto Superior Tecnico
Marco Carola  INESC-ID / Instituto Superior Tecnico
Jose Tome  INESC-ID / Instituto Superior Tecnico

ThuAM-9
Pavilion Ballroom C

8:00AM
*SS-Za: Evolutionary Computation in Finance & Economics I*
Chair:  David Quintana

8:20AM
*Simplifying Decision Trees Learned by Genetic Algorithms* [CEC7782]

Alma Lilia Garcia-Almanza  Univ. of Essex
Edward P.K. Tsang  Univ. of Essex
| Time       | Session                        | Title                                                                 | Authors                                                                                       | Location   |
|------------|--------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| 8:40AM     | Minority Game as a Model for the Artificial Financial Markets [CEC7613] | Mieko Tanaka-Yamawaki, Seiji Tokuoka                                 | Orca                                                                                          |
| 9:00AM     | A Brain Inspired Fuzzy Neuro-predictor for Bank Failure Analysis [CEC7477] | Chee Lee, Chai Quek, Douglas Maskell                                  |                                                                                               |
| 9:40AM     | Tackling the Simple Supply Chain Model [CEC7697] | Timothy Gosling, Edward Tsang                                         |                                                                                               |
| ThuAM-10   | Design Applications            | Chair: Ian Parmee                                                     |                                                                                               |
| 8:00AM     | Ergonomic Design of an Optimal Hindi Keyboard for Convenient Use [CEC7013] | Priyendra Deshwal, Kalyanmoy Deb                                      |                                                                                               |
| 8:20AM     | User Fatigue Reduction by an Absolute Rating Data-trained Predictor in IEC [CEC7165] | Shangfei Wang, Xufa Wang, Hideyuki Takagi                             |                                                                                               |
| 9:00AM     | Multi-Objective Optimum Design of DMS Filters using Robust Engineering and Genetic Algorithm [CEC7249] | Kiyoharu Tagawa, Norihiko Kojima                                      |                                                                                               |
| 9:40AM     | A Particle Swarm Optimization Approach to A Multi-objective Reconfigurable Machine Tool Design Problem [CEC7049] | Wei Liu, Ming Liang                                                  |                                                                                               |
| ThuAM-11   | Learning Classifier & Learning Systems | Chair: Gerry Dozier                                                  |                                                                                               |
| 8:00AM     | Immune Learning Classifier Networks: Evolving Nodes and Connections [CEC7475] | Renato Reder Cazangi, Fernando Von Zuben                              |                                                                                               |
| 8:20AM     | An Anomaly Detection-based Classification System [CEC7716] | Haiyu Hou, Gerry Dozier                                             |                                                                                               |
| 8:40AM     | Extending XCSFG Beyond Linear Approximation [CEC7238] | Ali Hamzeh, Adeli Rahmani                                            |                                                                                               |
| 9:00AM     | Optimized Precision - A New Measure for Classifier Performance Evaluation [CEC7381] | Romesh Ranawana, Vasile Palade                                       |                                                                                               |
| 9:40AM     | XCSF with Neural Prediction [CEC7633] | Pier Luca Lanzi, Daniele Loiacono                                    |                                                                                               |
THUAM-12

**Representation & Operators III**

**Chair:** Tim Paulden

**8:00AM**

**Alternative Splicing in Evolutionary Computation: Adaptation in Dynamic Environments [CEC7544]**

Philipp Rohlfshagen  Univ. of Birmingham

John Bullinaria  Univ. of Birmingham

**8:20AM**

**Analysis of Locality in Hybrid Evolutionary Cluster Optimization [CEC7316]**

Francisco B. Pereira  Polytechnic Inst. of Coimbra

Jorge M. C. Marques  Univ. of Coimbra

Tiago Leitao  Univ. of Coimbra

Jorge Tavares  Univ. of Coimbra

**8:40AM**

**How an Optimal Observer can Smooth a Landscape [CEC7104]**

Christophe Phillemotte  Universite Libre de Bruxelles

Hugues Bersini  Universite Libre de Bruxelles

**9:00AM**

**The Polar Evolution Strategy [CEC7117]**

Alejandro Sierra  Univ. Autonoma de Madrid

Alejandro Echeverria  Univ. Autonoma de Madrid

**9:20AM**

**The Role of Representation on the Multidimensional Knapsack Problem by means of Fitness Landscape Analysis [CEC7320]**

Jorge Tavares  Univ. of Coimbra

Francisco B. Pereira  Polytechnic Inst. of Coimbra

Ernesto Costa  Univ. of Coimbra

THUAM-13

**SS-Z1: Evolutionary Computation in Bioinformatics & Computational Biology I**

**Chair:** Scott F. Smith

**8:00AM**

**Computer Assisted Parental Sequences Analysis as a Previous Step to DNA Shuffling Process [CEC7199]**

Luciana Montera  Federal Univ. of Sao Carlos

Maria do Carmo Nicoletti  Federal Univ. of Sao Carlos

Flavio Henrique-Silva  Federal Univ. of Sao Carlos

**8:20AM**

**A Detailed Analysis of Parallel Speedup in P-RnaPredict - An Evolutionary Algorithm for RNA Secondary Structure Prediction [CEC7682]**

Kay C. Wiese  Simon Fraser Univ.

Andrew Hendriks  Simon Fraser Univ.

**8:40AM**

**Evaluating Distance Measures for RNA Motif Search [CEC7622]**

Justin Schonfeld  Iowa State Univ.

Daniel Ashlock  Univ. of Guelph
TECHNICAL PROGRAM LISTING

ThuAM-15
SS-Sd: Hybrid Neural Intelligent Systems I
Chair: Patricia Melin

8:00AM

Synthesis of Pulsed-Coupled Neural Networks in FPGAs for Real-Time Image Segmentation [IJCNN1162]
Javier Vega  Chihuahua Inst. of Tech.
Mario Chacon  Chihuahua Inst. of Tech.
Roberto Camarillo  Centro de investigacion avanzado en materiales

8:20AM

Iris Recognition Independent of Rotation and Ambient Lighting Variations [IJCNN1699]
Hironobu Takano  Toyama Prefectural Univ.
Hiroyki Kobayashi  Toyama Prefectural Univ.
Kiyomi Nakamura  Toyama Prefectural Univ.

8:40AM

Modular Fuzzy Neural Networks for Imitative Learning of a Partner Robot [IJCNN2103]
Naoyuki Kubota  Tokyo Metropolitan Univ.
Toshiyuki Shimizu  Tokyo Metropolitan Univ.

9:00AM

An Intelligent System for Pattern Recognition and Time Series Prediction using Modular Neural Networks [IJCNN1860]
Patricia Melin  Tijuana Inst. of Tech.
Olivia Mendoza  Tijuana Inst. of Tech.
Miguel Soto  Tijuana Inst. of Tech.
Maribel Gutierrez  Tijuana Inst. of Tech.
Daniel Solano  Tijuana Inst. of Tech.

9:20AM

Experiments with a Hybrid-complex Neural Networks for Long Term Prediction of Electrocardiograms [IJCNN1993]
Pilar Gomez-Gil  Universidad de las Americas
Manuel Ramirez-Cortes  Universidad de las Americas

9:40AM

Recurrent Neural Network Based Predictions of Elephant Migration in a South African Game Reserve [IJCNN1848]
Parviz Palangpour  Univ. of Missouri-Rolla
Ganesh Venayagamoorthy  Univ. of Missouri-Rolla
Kevin Duffy  Durban Inst. of Tech.

10:30AM-11:30AM

WCCI Plenary Talk, Thursday

Toward Implementable and Human-Centric Decision Support: The Role of Fuzz Logic and Computing with Words and Perceptions
Janusz Kacprzyk

ThuMM-1
Neural Network Applications I
Chair: Scott Dick & Aina Sadia

1:00PM

Fuzzy Clustering of Open-source Software Quality Data: A Case Study of Mozilla [IJCNN1628]
Scott Dick  Univ. of Alberta
Aina Sadia  Univ. of Alberta

1:20PM

Rotation and Size Independent Face Recognition by the Spreading Associative Neural Network [IJCNN1698]
Kiyomi Nakamura  Toyama Prefectural Univ.
Hironobu Takano  Toyama Prefectural Univ.

1:40PM

Speed Optimization Module of a Hydraulic Francis Turbine based on Artificial Neural Networks. Application to the Dynamic Analysis and Control of an Adjustable Speed Hydro Plant [IJCNN1574]
Jesus Fraile-Ardanuy  Universidad Politecnica de Madrid
Juan Ignacio Perez Diaz  Universidad Politecnica de Madrid
Ignacio Sarasua Moreno  Universidad Politecnica de Madrid
Jose Roman Wilhelmi Ayza  Universidad Politecnica de Madrid
Jesus Fraile-Mora  Universidad Politecnica de Madrid

2:00PM

Single Compartment Fire Risk Analysis using a Fuzzy Neural Network [IJCNN1846]
William Becker  RMIT Univ.
Xinghuo Yu  RMIT Univ.
Jiyuan Tu  RMIT Univ.
Eric Lee  City Univ. of Hong Kong

2:20PM

Estimation of Ocean Water Chlorophyll-a Concentration Using Fuzzy C-means Clustering and Artificial Neural Networks [IJCNN1976]
Habtom Ressom  Georgetown Univ.
Kevin Turner  Univ. of Maine
Mohamad Musavi  Univ. of Maine

2:40PM

WebFusion: Fundamentals and Principles of a Novel Meta Search Engine [IJCNN1461]
Amir Hossein Keyhanipur  Msc. Student, Iran
Behzad Moshiri  Professor, Iran
Maryam Piroozmand  BS. Degree, Iran
Caro Lucas  Professor, Iran
ThuMM-2
Unsupervised Learning II
Chairs: Nicolas Saunier & Tarek Sayed

1:00PM
Nicolas Saunier UBC
Tarek Sayed UBC

1:20PM
Automated Model Selection (AMS) on Finite Mixtures: A Theoretical Analysis [IJCNN1130]
Jinwen Ma RIKEN Brain Sci. Inst.

1:40PM
Refining Spherical K-means for Clustering Documents [IJCNN1942]
Jiming Peng McMaster Univ.
Jiaping Zhu McMaster Univ.

2:00PM
Adaptive Spatial Information Clustering for Image [IJCNN1435]
Zhi Min Wang Nanyang Tech. Univ.
Qing Song Nanyang Tech. Univ.
Yeng Chai Soh Nanyang Tech. Univ.
Xulei Yang Nanyang Tech. Univ.
Kang Sim Inst. of Mental Health / Woodbridge Hospital

2:20PM
An Optimization Approach to Achieve Unsupervised Segmentation and Binding in a Dynamical Network [IJCNN1684]
A. Ravishankar Rao IBM Research
Guillermo Cecchi IBM Research
Charles Peck IBM Research
James Kozloski IBM Research

2:40PM
Learning to Segment Any Random Vector [IJCNN1317]
Aapo Hyvarinen Univ. of Helsinki
Jukka Perkio Univ. of Helsinki

ThuMM-3
Robotics
Chair: Zeng-Guang Hou

1:00PM
Reinforcement Learning Control for Biped Robot Walking on Uneven Surfaces [IJCNN1528]
Shouyi Wang Delft Univ. of Tech.
Jelmer Braaksma Delft Univ. of Tech.
Robert Babuska Delft Univ. of Tech.
Daan Hobbelen Delft Univ. of Tech.

1:20PM
ANN Based Internal Model Approach to Motor Learning for Humanoid Robot [IJCNN1136]
Jian-Xin Xu Associate Professor, Singapore
Wei Wang PhD student, Singapore
Prahlad Vadakkepat Assistant Professor, Singapore
Wai Yee Low Student, Singapore

1:40PM
Coordination of Two Redundant Robots using a Dual Neural Network [IJCNN1279]
Zeng-Guang Hou Chinese Academy of Sci.s
Long Cheng Chinese Academy of Sci.s
Min Tan Chinese Academy of Sci.s

2:00PM
Cooperative Transportation by Multiple Mobile Manipulators Using Adaptive NN Control [IJCNN1270]
Xin Chen Univ. of Macau
Yangmin Li Univ. of Macau

2:20PM
Biologically Inspired KFLANN Place Fields for Robot Localization. [IJCNN1206]
Leng-Phuan Tay Nanyang Tech. Univ.
Liang-Ping Tan Nanyang Tech. Univ.
Arlene Bastion Nanyang Tech. Univ.
Kuan Zhang Nanyang Tech. Univ.

2:40PM
Probabilistic Multi-modal People Tracker and Monocular Pointing Pose Estimator for Visual Instruction of Mobile Robot Assistants [IJCNN2033]
Horst-Michael Gross Ilmenau Tech. Univ.
Jan Richarz Ilmenau Tech. Univ.
Andrea Scheidig Ilmenau Tech. Univ.
Steffen Mueller Ilmenau Tech. Univ.
Christian Martin Ilmenau Tech. Univ.

ThuMM-4
Machine Learning with Neurodynamics, Chaos & Spiking Neurons
Chair: Carlos Lourenco

1:00PM
Some Stability Properties of Dynamic Neural Networks with Different Time-scales [IJCNN1268]
Alejandro Cruz Cinvestav-ipn
Wen Yu Cinvestav-ipn
Xiaou Li Cinvestav-ipn

1:20PM
A Very Small Chaotic Neural Net [IJCNN1704]
Carlos Lourenco Univ. of Lisbon

1:40PM
Complex Phase Synchronization in an Array of Oscillators Coupled by Time-Varying Resistor [IJCNN2087]
Uwate Yoko Tokushima Univ.
Nishio Yoshifumi Tokushima Univ.
### TECHNICAL PROGRAM LISTING

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tbody>
<tr>
<td>2:00PM</td>
<td>Markov Coding Strategy of the Simple Spiking Model of Auditory Neuron [IJCNN2106]</td>
<td>Parksville</td>
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<tr>
<td>2:20PM</td>
<td>Preparing More Effective Liquid State Machines Using Hebbian Learning [IJCNN2072]</td>
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<td>2:40PM</td>
<td>Durability of Affordable Neural Networks against Damages [IJCNN1490]</td>
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**ThuMM-5**

SS-SP: Biologically Inspired Computational Vision I

**Chair:** Khan M Iftekharuddin

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00PM</td>
<td>An Architecture for Object-based Saccade Generation using a Biologically Inspired Self-organized Retina [IJCNN1357]</td>
<td>Sumitha Balasuriya, Paul Siebert</td>
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<tr>
<td>1:20PM</td>
<td>Multiresolution Object Recognition using Dual Heuristic Programming [IJCNN1753]</td>
<td>Faraz Siddiqi, Khan M Iftekharuddin</td>
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<tr>
<td>1:40PM</td>
<td>Delay Compensation Through Facilitating Synapses and STDP: A Neural Basis for Orientation Flash-lag Effect [IJCNN1783]</td>
<td>Heejin Lim, Yoonsuck Choe</td>
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<tr>
<td>2:00PM</td>
<td>Vergence Control of 2 DOF Pan-tilt Binocular Cameras using a Log-Polar Representation of the Visual Cortex [IJCNN1875]</td>
<td>Alex Zhang, Alex Tay, Abhinav Saxena</td>
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<tr>
<td>2:20PM</td>
<td>The Spherical Retina a Conformal Geometric Algebra Model for Human Like Vision [IJCNN2019]</td>
<td>Eduardo Jose Bayro-Corrochano, David Israel Gonzalez-Aguirre</td>
</tr>
<tr>
<td>2:40PM</td>
<td>Biologically Motivated Face Selective Attention System [IJCNN2100]</td>
<td>Woong-Jae Won, Sang-Woo Ban, Jackyoung Moon, Minho Lee</td>
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### ThuMM-6

Decision Making & Trees

**Chair:** Bernadette Bouchon-Meunier

<table>
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<th>Time</th>
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<th>Authors</th>
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<tbody>
<tr>
<td>1:00PM</td>
<td>On Producing Balanced Fuzzy Decision Tree Classifiers [FUZZ4046]</td>
<td>Keeley Crockett, Zuhair Bandar, James O'Shea</td>
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<tr>
<td>1:40PM</td>
<td>A Model of Case Based Reasoning Using Intuitionistic Fuzzy Sets [FUZZ4455]</td>
<td>Eulalia Szmidt, Janusz Kacprzyk</td>
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### ThuMM-7

Fuzzy Control Theory I

**Chair:** Ozer Ciftcioglu

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>1:00PM</td>
<td>Design of Fuzzy Stochastic Nearly Optimal Control [FUZZ4065]</td>
<td>Zhengmao Ye, Yongmao Ye, Habib Mohamadian</td>
</tr>
<tr>
<td>1:20PM</td>
<td>On the Efficiency of Multivariable TS Fuzzy Modeling [FUZZ4400]</td>
<td>Ozer Ciftcioglu, Sevil Sariyildiz</td>
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### Parksville

Parksville

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### Junior Ballroom D

Junior Ballroom D

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### Pavilion Ballroom A

Pavilion Ballroom A
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Location</th>
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<tr>
<td>1:40PM</td>
<td>TECHNICAL PROGRAM LISTING</td>
<td><strong>Fuzzy Modeling for Nonlinear System with Structured Data Uncertainty</strong> [FUZZ4520]</td>
<td>Ding Haishan, Univ. of Aero. &amp; Astro. Mao Jianqin, Univ. of Aero. &amp; Astro.</td>
<td>Pavilion Ballroom B</td>
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<tr>
<td>2:00PM</td>
<td>Software Implementation Issues of Existing and New Defuzzification Methods [FUZZ4190]</td>
<td>Abbas Banaiyan, Univ. of Tehran Hamid Reza Mahdiani, Univ. of Tehran Sied Mehdi Fakhraie, Univ. of Tehran</td>
<td>Pavilion Ballroom C</td>
<td></td>
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<tr>
<td>2:20PM</td>
<td><strong>Stabilization of Takagi-Sugeno fuzzy systems with time-varying uncertainties</strong> [FUZZ4019]</td>
<td>Chin-Tzong Pang, Yuan Ze Univ.</td>
<td>Pavilion Ballroom B</td>
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<tr>
<td>1:00PM</td>
<td>ThuMM-8 Hybrid Systems II</td>
<td><strong>Extended Kalman Filter Weights Adjustment for Neonatal Incubator Neurofuzzy Identification</strong> [FUZZ4495]</td>
<td>David Valdez, Upibi-ipn, Mexico Victor Ortiz, Upibi-ipn, Mexico Agustin Cabrera, Upibi-ipn, Mexico Isaac Chairez, Upibi-ipn, Mexico</td>
<td>Pavilion Ballroom B</td>
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<td>1:20PM</td>
<td><strong>GA Optimization of Generalized OBF TS Fuzzy Models with Global and Local Estimation Approaches</strong> [FUZZ4245]</td>
<td>Anderson V. Medeiros, State Univ. of Campinas Wagner C. Amaral, State Univ. of Campinas Ricardo J. G. B. Campello, Catholic Univ. of Santos</td>
<td>Pavilion Ballroom B</td>
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<td>1:40PM</td>
<td><strong>An Approach to Improve the Interpretability of Neuro-Fuzzy Systems</strong> [FUZZ4127]</td>
<td>Tito Amaral, Polytechnic Inst. of Setubal Vitor Pires, Polytechnic Inst. of Setubal Manuel Crisostomo, Univ. of Coimbra</td>
<td>Pavilion Ballroom B</td>
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<td>2:00PM</td>
<td><strong>A New Method for Designing and Reduction of Neuro-Fuzzy Systems</strong> [FUZZ4312]</td>
<td>Krzysztof Cpakla, Tech. Univ. of Czestochowa Leszek Rutkowski, WSHE Univ.</td>
<td>Pavilion Ballroom B</td>
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<td>2:20PM</td>
<td><strong>Parallel Evolutionary Asymmetric Subssethood Product Fuzzy-Neural Inference System with Applications</strong> [FUZZ4457]</td>
<td>Lotika Singh, Dayalbagh Educational Inst. Satish Kumar, Dayalbagh Educational Inst.</td>
<td>Pavilion Ballroom B</td>
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<td>2:00PM</td>
<td><strong>Selection of Optimal Investment Portfolios with Cardinality Constraints</strong> [CEC7434]</td>
<td>Rafael Moral-Escudero, Univ. Autonoma de Madrid Ruben Ruiz-Torrubiano, Univ. Autonoma de Madrid Alberto Suarez, Univ. Autonoma de Madrid</td>
<td>Pavilion Ballroom B</td>
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<td>2:20PM</td>
<td><strong>Integration of Group Decisions and XCS in Intelligent Financial Decision Support System -- An Example of Taiwan Index</strong> [CEC7120]</td>
<td>Jung-Bin Li, NCTU Yuan-Tsung Yu, NCTU An-Pin Chen, NCTU</td>
<td>Pavilion Ballroom B</td>
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<td>1:00PM</td>
<td>ThuMM-10 SS-Zj: Quantum Computing &amp; Quantum Computational Intelligence I</td>
<td><strong>Using Group Theory in Reversible Computing</strong> [CEC7056]</td>
<td>Yvan Van Rentergem, Universiteit Gent Alexis De Vos, Universiteit Gent Koen De Keyser, Universiteit Gent</td>
<td>Pavilion Ballroom B</td>
</tr>
</tbody>
</table>
1:20PM  
**Level Compaction in Quantum Circuits** [CEC7207]  
Dmitri Maslov  Univ. of Victoria  
Gerhard Dueck  Univ. of New Brunswick

1:40PM  
**Synthesis of Hybrid and d-valued Quantum Logic Circuits** [CEC7460]  
Faisal Khan  Portland State Univ.  
Marek Perkowski  Portland State Univ.

2:00PM  
**A Constructive Algorithm for Reversible Logic Synthesis** [CEC7371]  
Guowu Yang  Portland State Univ.  
Fei Xie  Portland State Univ.  
Xiaoyu Song  Portland State Univ.  
William Hung  Portland State Univ.  
Marek Perkowski  Portland State Univ.

2:20PM  
**Analyzing Fault Models for Reversible Logic Circuits** [CEC7133]  
Jing Zhong  Univ. of Victoria  
Jon Muzio  Univ. of Victoria

2:40PM  
**A Decision Diagram Package for Reversible and Quantum Circuit Simulation** [CEC7755]  
D. Michael Miller  Univ. of Victoria  
Mitchell A. Thornton  Southern Methodist Univ.  
David Goodman  Southern Methodist Univ.

2:00PM  
**Evolutionary Neural Networks Applied to the Classification of Microcalcification Clusters in Digital Mammograms** [CEC7717]  
Rolando Hernandez-Cisneros  Tecnologico de Monterrey  
Hugo Terashima-Marín  Tecnologico de Monterrey

2:20PM  
**An Evolutionary Morphological Approach for Financial Time Series Forecasting** [CEC7030]  
Ricardo de Andrade Araujo  Catholic Univ. of Pernambuco  
Francisco Madeiro  Catholic Univ. of Pernambuco  
Robson Pequeno de Sousa  Catholic Univ. of Pernambuco  
Lucio Flavio Cavalcanti Pessoa  Freescale Semiconductor, Inc.

2:40PM  
**Optimal Control of a Cancer Chemotherapy Problem with Different Toxic Elimination Processes** [CEC7066]  
Yong Liang  Chinese Univ. of Hong Kong  
Kwong-Sak Leung  Chinese Univ. of Hong Kong  
Shu-Kam Tony Mok  Chinese Univ. of Hong Kong

ThuMM-12  
**Representation & Operator IV**  
Chair:  Gerry Dozier

1:00PM  
**Path Planning in an Environment with Static and Dynamic Obstacles Using Genetic Algorithm: A Simplified Search Space Approach** [CEC7257]  
Hosein Mahjoubi  Univ. of Tehran  
Fariba Bahrami  Univ. of Tehran  
Caro Lucas  Univ. of Tehran

1:20PM  
**The Distribution Genetic Algorithm: Evolving a Population of Distributions** [CEC7512]  
Tao Liu  Univ. of Guelph  
Mark Wineberg  Univ. of Guelph

1:40PM  
**Probabilistic (Genotype) Adaptive Mapping Combinations for Dept.al Genetic Programming** [CEC7121]  
Garnett Wilson  Dalhousie Univ.  
Malcolm Heywood  Dalhousie Univ.

2:00PM  
**Ressource-Aware Parameterizations of EDA** [CEC7665]  
Sylvain Gelly  TAO/INRIA/CNRS/LRI  
Olivier Teytaud  TAO/INRIA/CNRS/LRI  
Christian Gagne  TAO/INRIA/CNRS/LRI

2:20PM  
**Multiobjective Genetic Algorithm for Multicast Routing** [CEC7421]  
Cicero Garrozi  Federal Univ. of Pernambuco  
Aluizio Araujo  Federal Univ. of Pernambuco
ThuMM-13
SS-Z1: Evolutionary Computation in Bioinformatics & Computational Biology II
Chair: Kay C. Wiese
1:00PM
Classification of Gene Expression Data by Majority Voting
Genetic Programming Classifier [CEC7105]
Topon Paul  Univ. of Tokyo
Yoshishiko Hasegawa  Univ. of Tokyo
Hitoshi Iba  Univ. of Tokyo
1:20PM
Improving Feature Subset Selection Using a Genetic Algorithm for Microarray Gene Expression Data [CEC7564]
Feng Tan  Georgia State Univ.
Xuezeng Fu  Georgia State Univ.
Yanqing Zhang  Georgia State Univ.
Anu Bourgeois  Georgia State Univ.
1:40PM
Swarms and Genes: Exploring Lambda-switch Gene Regulation through Swarm Intelligence [CEC7194]
Christian Jacob  Univ. of Calgary
Anna Barbasiwicz  Univ. of Calgary
Glorious Tsui  Univ. of Calgary
2:00PM
On the Reconstruction of Gene Regulatory Networks from Noisy Expression Profiles [CEC7159]
Nasimul Noman  Univ. of Tokyo
Hitoshi Iba  Univ. of Tokyo
2:20PM
Effects of an RNA Control Layer on the State Space of Boolean Models of Genetic Regulatory Networks [CEC7559]
Jennifer Hallinan  Univ. of Newcastle upon Tyne
Daniel Bradley  Univ. of Queensland
John Mattick  Inst. for Molecular Biosciences
Janet Wiles  Univ. of Queensland
2:40PM
The Particle Swarm Interval Rule Optimizer with an Application to Drug Design Data [CEC7008]
Juergen Paetz  J.W. Goethe-Universitaet

ThuMM-15
SS-S5d: Hybrid Neural Intelligent Systems II
Chair: Patricia Melin
1:00PM
Designing an Associative Memory via Optimal Training for Fault Diagnosis [IJCNN1402]
Jose A. Ruz-Hernandez  CINVESTAV
Edgar N. Sanchez  CINVESTAV
Dionisio A. Suarez  Instituto de Investigaciones Electricas
1:20PM
Spherical Neural Networks and Some Applications [IJCNN1529]
Jose Refugio Vallejo  Univ. of Guanajuato
1:40PM
Rodrigo Calvo  Univ. of Sao Paulo
Roseli Ap. Francelin Romero  Univ. of Sao Paulo
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<tr>
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<th>Chair</th>
<th>Location</th>
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<tbody>
<tr>
<td>2:00PM</td>
<td>Forecasting Time Series with a New Architecture for Polynomial Artificial Neural Network [IJCNN2041]</td>
<td>Alejandro Flores-Mendez, Eduardo Gomez-Ramirez</td>
<td>Gulf Islands BCD</td>
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<tr>
<td>2:20PM</td>
<td>Forecasting Economic Time Series Using Modular Neural Networks and the Fuzzy Sugeno Integral as Response Integration Method [IJCNN1767]</td>
<td>Patricia Melin, Jerica Urias, Jassiny Quintero, Martha Ramirez, Omar Blanchet</td>
<td>Gulf Islands BCD</td>
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<tr>
<td>2:40PM</td>
<td>Applications of Unsupervised Methods [PARTCAT: A Subspace Clustering Algorithm for High Dimensional Categorical Data [IJCNN1041]</td>
<td>Guojun Gan, Jinhong Wu, Zhiqiang Yang</td>
<td>Gulf Islands BCD</td>
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<td>2:45PM</td>
<td>Grid Computing Solutions for Artificial Neural Network-based Electricity Market Forecasts [IJCNN1581]</td>
<td>Noriaki Sakamoto, Kazuhiro Ozawa, Tak Niimura</td>
<td>Gulf Islands BCD</td>
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<tr>
<td>3:00PM</td>
<td>Developmental Learning Based on Coherent Neural Networks with Behavioral Mode Tuning by Carrier-frequency Modulation [IJCNN1477]</td>
<td>Jun Miao, Xilin Chen, Wen Gao, Yiqiang Chen</td>
<td>Gulf Islands BCD</td>
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<td>3:15PM</td>
<td>Knowledge-Based Multi-Spectral Pixel Level Fusion for Surveillance [IJCNN1732]</td>
<td>Yunqian Ma, Jiri Rojicek, Zdenek Beran, Jaromir Kukal, Mike Bazakos</td>
<td>Gulf Islands BCD</td>
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<td>3:45PM</td>
<td>A Visual Perceiving and Eyeball-motion Controlling Neural Network for Object Searching and Locating [IJCNN2023]</td>
<td>Akira Hirose, Yasufumi Asano, Toshihiko Hamano</td>
<td>Gulf Islands BCD</td>
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### TECHNICAL PROGRAM LISTING

#### 3:35PM
**System Identification Using the Neural-extended Kalman Filter for Control Modification** ([IJCNN1419])
- **Speaker**: Stephen Stubberud, Anzus, Inc.
- **Speaker**: Kathleen Kramer, Univ. of San Diego

#### 3:55PM
**Direct Neural-adaptive Control with Quantifiable Bounds and Improved Performance** ([IJCNN1977])
- **Speaker**: Chris Macnab, Univ. of Calgary

#### 4:15PM
**Order Formation in Learning Nonlinear Robust Control Systems by Use of Neural Networks** ([IJCNN1412])
- **Speaker**: Hiroaki Nakanishi, Kyoto Univ.
- **Speaker**: Koichi Inoue, Osaka Sangyo Univ.

#### 4:35PM
**Adaptive Neural-based Backstepping Control of Uncertain MIMO Nonlinear Systems** ([IJCNN1471])
- **Speaker**: Erick Vile Grinits, Unicamp
- **Speaker**: Celso Pascoli Bottura, Unicamp

#### 4:55PM
**Associated Hermite Series Based Iterative Learning Control with Experience inclusion using Local Learning Approach** ([IJCNN1387])
- **Speaker**: S. Gopinath, IIT Delhi
- **Speaker**: I. N. Kar, IIT Delhi
- **Speaker**: R. K. P. Bhatt, IIT Delhi

### ThuPM-5
**Applications of Dynamics & Spiking Neurons**
**Chair**: Khan M Iftekharuddin

#### 3:15PM
**Switching Learning Law for Differential Neural Observer for Biodegradation Process** ([IJCNN2025])
- **Speaker**: Rita Fuentes, Upibi-ipn
- **Speaker**: Alejandro Garcia, Upibi-ipn
- **Speaker**: Agustin Cabrera, Upibi-ipn
- **Speaker**: Tatyana Poznyak, Upibi-ipn
- **Speaker**: Isaac Chairez, Upibi-ipn

#### 3:35PM
**Channel Assignment Using Chaotic Simulated Annealing Enhanced Hopfield Neural Network** ([IJCNN1712])
- **Speaker**: Amir Massoud Farahmand, Univ. of Alberta
- **Speaker**: Mohammad javad Yazdanpanah, Univ. of Tehran

#### 3:55PM
**On The Analysis of Sigmoid Time Parameters for Dynamic Truncated BPTT Algorithm** ([IJCNN1324])
- **Speaker**: Vincent Seesa, Universite de Versailles St Quentin en Yvelines
- **Speaker**: Patrick Henaff, Universite de Versailles St Quentin en Yvelines
- **Speaker**: Fathi Ben Ouezdou, Universite de Versailles St Quentin en Yvelines
- **Speaker**: Faycal Namoun, BIA Comp.

#### 4:15PM
**Chaotic Searches and Stable Spatio-temporal Patterns as a Naturally Emergent Mixture in Networks of Spiking Neural Oscillators with Rich Dynamics** ([IJCNN2125])
- **Speaker**: Emilio Del-Moral-Hernandez, Univ. of Sao Paulo

#### 4:35PM
**Search Space Analysis of Recurrent Spiking and Continuous-time Neural Networks** ([IJCNN2132])
- **Speaker**: Mario Ventresca, Univ. of Waterloo
- **Speaker**: Beatrice Ombuki, Brock Univ.

#### 4:55PM
**A Recurrent Neural Network for Solving Nonconvex Optimization Problems** ([IJCNN1088])
- **Speaker**: Xiaolin Hu, Chinese Univ. of Hong Kong
- **Speaker**: Jun Wang, Chinese Univ. of Hong Kong

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**Junior Ballroom C**

### ThuPM-4
**Applications of Dynamics & Spiking Neurons**
**Chair**: Emilio Del-Moral-Hernandez

#### 3:15PM
**Switching Learning Law for Differential Neural Observer for Biodegradation Process** ([IJCNN2025])
- **Speaker**: Rita Fuentes, Upibi-ipn
- **Speaker**: Alejandro Garcia, Upibi-ipn
- **Speaker**: Agustin Cabrera, Upibi-ipn
- **Speaker**: Tatyana Poznyak, Upibi-ipn
- **Speaker**: Isaac Chairez, Upibi-ipn

#### 3:35PM
**Channel Assignment Using Chaotic Simulated Annealing Enhanced Hopfield Neural Network** ([IJCNN1712])
- **Speaker**: Amir Massoud Farahmand, Univ. of Alberta
- **Speaker**: Mohammad javad Yazdanpanah, Univ. of Tehran

#### 3:55PM
**On The Analysis of Sigmoid Time Parameters for Dynamic Truncated BPTT Algorithm** ([IJCNN1324])
- **Speaker**: Vincent Seesa, Universite de Versailles St Quentin en Yvelines
- **Speaker**: Patrick Henaff, Universite de Versailles St Quentin en Yvelines
- **Speaker**: Fathi Ben Ouezdou, Universite de Versailles St Quentin en Yvelines
- **Speaker**: Faycal Namoun, BIA Comp.

#### 4:15PM
**Chaotic Searches and Stable Spatio-temporal Patterns as a Naturally Emergent Mixture in Networks of Spiking Neural Oscillators with Rich Dynamics** ([IJCNN2125])
- **Speaker**: Emilio Del-Moral-Hernandez, Univ. of Sao Paulo

#### 4:35PM
**Search Space Analysis of Recurrent Spiking and Continuous-time Neural Networks** ([IJCNN2132])
- **Speaker**: Mario Ventresca, Univ. of Waterloo
- **Speaker**: Beatrice Ombuki, Brock Univ.

#### 4:55PM
**A Recurrent Neural Network for Solving Nonconvex Optimization Problems** ([IJCNN1088])
- **Speaker**: Xiaolin Hu, Chinese Univ. of Hong Kong
- **Speaker**: Jun Wang, Chinese Univ. of Hong Kong

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**Junior Ballroom D**

### ThuPM-5
**SS-Sp: Biologically Inspired Computational Vision II**
**Chair**: Khan M Iftekharuddin

#### 3:15PM
**Oscillatory Network for Synchronization-based Adaptive Image Segmentation** ([IJCNN1383])
- **Speaker**: Eugene Grichuk, Moscow Eng. Physics Inst.
- **Speaker**: Margarita Kuzmina, Keldysh Inst. of Applied Mathematics RAS
- **Speaker**: Eduard Manykin, Russian Research Center "Kurchatov Inst."

#### 3:35PM
**Distributed Behavior-based Multi-agent System for Automatic Segmentation of Brain MR Images** ([IJCNN1922])
- **Speaker**: Hadi Fatemi Shariatpanaehi, Univ. of Tehran
- **Speaker**: Nematollah Batmanghelich, Univ. of Tehran
- **Speaker**: Amir R. M. Kermani, Univ. of Tehran
- **Speaker**: Majid Nili Ahmadabadi, Univ. of Tehran
- **Speaker**: Hamid Soltanian-Zadeh, Univ. of Tehran

#### 3:55PM
**Dual Analog Focal Plane Sensors for Depth Perception** ([IJCNN1962])
- **Speaker**: Sirisha Karri, Univ. at Buffalo
- **Speaker**: Albert Titus, Univ. at Buffalo

#### 4:15PM
**Object Categorization Using Self-Organization over Visual Appearance** ([IJCNN2006])
- **Speaker**: Jarmo Ilonen, Lappeenranta Univ. of Tech.
- **Speaker**: Joni-Kristian Kamarainen, Lappeenranta Univ. of Tech.

#### 4:35PM
**A Biologically Inspired Shape Representation Model Based on Part Decomposition** ([IJCNN1204])
- **Speaker**: Li Yang, OGI School of Sci. & Eng. at OHSU
- **Speaker**: Marwan Jabri, OGI School of Sci. & Eng. at OHSU
4:55PM  
From Light to Spikes: a Large-scale Retina Simulator  
[IJCNN1329]  
Adrien Wohrer  INRIA Sophia-Antipolis  
Pierre Kornprobst  INRIA Sophia-Antipolis  
Thierry Vieville  INRIA Sophia-Antipolis

ThuPM-6
Approximate Reasoning Theory I  
Chair: Andrea Tettamanzi

3:15PM  
The Equivalence of Cognitive Map, Fuzzy Cognitive Map and  
Multi Value Fuzzy Cognitive Map [FUZZ4428]  
Yuan Miao  Victoria Univ.  
Xue Hong Tao  Nanyang Tech. Univ.  
Zhi Qi Shen  City Univ. of Hong Kong  
Zhi Qiang Liu  City Univ. of Hong Kong  
Chun Yan Miao  City Univ. of Hong Kong

3:35PM  
A New Similarity Measure of Generalized Fuzzy Numbers Based  
on Geometric-mean Averaging Operator [FUZZ4403]  
Shi-Jay Chen  National United Univ.

3:55PM  
A Calculation of Maximal Fuzzy Points [FUZZ4423]  
Dionis Boixader  Tech. Univ. of Catalonia (UCP)  
Joan Jacas  Tech. Univ. of Catalonia (UCP)  
Jordi Recasens  Tech. Univ. of Catalonia (UCP)

4:15PM  
An Efficient Characterization of Fuzzy Temporal Interval  
Relations [FUZZ4449]  
Steven Schockaert  Ghent Univ.  
Martine De Cock  Ghent Univ.  
Etienne Kerre  Ghent Univ.

4:35PM  
Alignment Based Similarity Measure for Grammar Learning  
[FUZZ4395]  
Xiangrui Wang  Nanyang Tech. Univ.  
Narendra Chaudhari  Nanyang Tech. Univ.

4:55PM  
Approximated Type-2 Fuzzy Set Operations [FUZZ4388]  
Hooman Tahayori  Univ. degli Studi di Milano  
Andrea G.B. Tettamanzi  Univ. degli Studi di Milano  
Giovanni Degli Antoni  Univ. degli Studi di Milano

3:35PM  
Decentralized H-infinity Control of Fuzzy Large-scale Systems  
[FUZZ4078]  
Xinrui Liu  Northeastern Univ.  
Huaguang Zhang  Northeastern Univ.  
Derong Liu  Univ. of Illinois at Chicago

3:55PM  
LMI Relaxed Stability Conditions for Fuzzy-Model-based  
Control Systems [FUZZ4172]  
H.K. Lam  King's College London

ThuPM-8
Hybrid Systems III  
Chair: Leszek Rutkowski

3:15PM  
TS-CMAC Based Sliding Mode Control for Time-delay Systems  
[FUZZ4061]  
Tung-Sheng Chiang  Ching-Yun Univ.  
Chian-Song Chiu  Chien-Kuo Tech. Univ.

3:35PM  
A Novel Particle Swarm-based Fuzzy Control Scheme  
[FUZZ4390]  
Hamdi A. Awad  Menoufia Univ.

3:55PM  
Merging Ensemble of Neuro-Fuzzy Systems [FUZZ4334]  
Marcin Korytkowski  Czestochowa Univ. of Tech.  
Robert Nowicki  Czestochowa Univ. of Tech.  
Leszek Rutkowski  Czestochowa Univ. of Tech.  
Rafal Scherer  Czestochowa Univ. of Tech.

4:15PM  
Rough-Neuro-Fuzzy System with MICOG Defuzzification  
[FUZZ4405]  
Robert Nowicki  Czestochowa Univ. of Tech.

4:35PM  
A Neoteric Approach to Rough Neuro Fuzzy Methods  
[FUZZ4482]  
Sandeep Chandana  Univ. of Regina  
Rene V. Mayorga  Univ. of Regina

4:55PM  
Linguistic Hedges for Ant-generated Rules [FUZZ4291]  
Michelle Galea  Univ. of Edinburgh  
Qiang Shen  Univ. of Wales at Aberystwyth

Pavilion Ballroom A  
3:15PM  
Fuzzy Control Theory II  
Chair: Derong Liu

3:35PM  
TS-CMAC Based Sliding Mode Control for Time-delay Systems  
[FUZZ4061]  
Tung-Sheng Chiang  Ching-Yun Univ.  
Chian-Song Chiu  Chien-Kuo Tech. Univ.
## TECHNICAL PROGRAM LISTING

### ThuPM-9

**SS-Za: Evolutionary Computation in Finance & Economics**

**Chair:** Edward Tsang

**3:15PM**

**Evolving Cooperative Bidding Strategies in a Power Market**

*CEC7441*

- Dipti Srinivasan  
  National Univ. of Singapore
- Kong Wei Lye  
  SIMTech, A*STAR
- Dakun Woo  
  National Univ. of Singapore

**3:35PM**

**Discriminatory versus Uniform Electricity Auctions in a Duopolistic Competition Scenario with Learning Agents**

*CEC7368*

- Silvano Cincotti  
  DIBE-Univ. of Genova
- Eric Guerci  
  DIBE-Univ. of Genova
- Stefano Ivaldi  
  DIBE-Univ. of Genova
- Marco Raberto  
  DIBE-Univ. of Genova

**3:55PM**

**Evolutionary-stable Strategies with Increasing and Decreasing Marginal Utilities in the Ausubel Auction**

*CEC7447*

- Asuncion Mochon  
  UNED
- David Quintana  
  Univ. CARLOS III de Madrid
- Yago Saez  
  Univ. CARLOS III de Madrid
- Pedro Isasi  
  Univ. CARLOS III de Madrid

**4:15PM**

**Adaptive Trading With Grammatical Evolution**

*CEC7518*

- Ian Dempsey  
  Univ. College Dublin
- Michael O'Neill  
  Univ. College Dublin
- Anthony Brabazon  
  Univ. College Dublin

**4:35PM-5:15PM**

**EC Finance Panel**

Edward Tsang  
Univ. of Essex

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### ThuPM-10

**SS-ZJ: Quantum Computing & Quantum Computational Intelligence II**

**Chair:** Marek Perkowski

**3:15PM**

**Genetic Quantum Algorithm for Voltage and Pattern Design of Piezoelectric Actuator**

*CEC7420*

- Amirreza Khorsand  
  Ferdowsi Univ. of Mashhad
- Mohammad Akbarzadeh-T  
  Ferdowsi Univ. of Mashhad
- Hosein Moin  
  Ferdowsi Univ. of Mashhad

**3:35PM**

**Quantum-inspired Multiobjective Evolutionary Algorithm for Multiobjective 0/1 Knapsack Problems**

*CEC7589*

- Yehoon Kim  
  KAIST
- Jong-Hwan Kim  
  Korea Advanced Inst. of Sci. and Tech.
- Kuk-Hyun Han  
  Samsung Electronics Co., Ltd.

**3:55PM**

**Learning Quantum Operators from Quantum State Pairs**

*CEC7405*

- Neil Toronto  
  Brigham Young Univ.
- Dan Ventura  
  Brigham Young Univ.

**4:15PM**

**Towards the Dynamic Learning of an Experimental Entanglement Witness**

*CEC7367*

- Elizabeth Behrman  
  Wichita State Univ.
- James Steck  
  Wichita State Univ.
- Preethika Gagnebin  
  Wichita State Univ.
- Steven Skinner  
  Wichita State Univ.

**4:35PM**

**On the Analysis of the Quantum-inspired Evolutionary Algorithm with a Single Individual**

*CEC7313*

- Kuk-Hyun Han  
  Samsung Electronics Co., Ltd.
- Jong-Hwan Kim  
  Korea Advanced Inst. of Sci. & Tech.
- Marley M. B. R. Vellasco  
  Pontificia Univ.e Catolica - RJ
- Marco Aurelio Pacheco  
  Pontificia Univ.e Catolica - RJ

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### ThuPM-11

**Evolving Software & Developmental Systems**

**Chair:** William B. Langdon

**3:15PM**

**Dynamically Defined Functions in Grammatical Evolution**

*CEC7518*

- Robin Harper  
  Univ. of New South Wales
- Alan Blair  
  Univ. of New South Wales

**4:15PM**

**Towards the Dynamic Learning of an Experimental Entanglement Witness**

Orca

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### ThuPM-12

**Cellular Dept.: A Search for Functionality**

*CEC7555*

- Gunnar Tufte  
  Norwegian Univ. of Sci. & Tech.
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<td>3:15PM</td>
<td>Image Registration of Printed Circuit Boards using Hybrid Genetic Algorithm [CEC7260]</td>
<td>Syamsiah Mashohor, Jonathan Evans, Tughrul Arslan, Univ. of Edinburgh</td>
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<td>A Genetic Approach for Loss Reduction in Power Distribution Systems under Variable Demands [CEC7685]</td>
<td>Leonardo Queiroz, Cristiano Lyra, Univ. of Campinas (UNICAMP)</td>
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<td>3:55PM</td>
<td>A Differential Evolution Based Method for Power System Planning [CEC7236]</td>
<td>Zhao Yang Dong, Miao Lu, Zhe Lu, Kit Po Wong, Univ. of Queensland</td>
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<td>4:35PM</td>
<td>Multiobjective Multistatic Sonar Sensor Placement [CEC7553]</td>
<td>Patrick Ngatchou, Warren Fox, Mohamed El-Sharkawi, Univ. of Washington</td>
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<td>3:15PM</td>
<td>Accelerated Non-coding RNA Searches with Covariance Model Approximations [CEC7540]</td>
<td>Scott Smith, Univ. of California San Diego</td>
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<td>Boise State Univ.</td>
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<td>4:15PM</td>
<td>Evolving Discriminative Motifs for Recognizing Proteins Imported to the Peroxisome via the PTS2 Pathway [CEC7571]</td>
<td>Mikael Boden, John Hawkins, Univ. of Queensland, Univ. of Queensland</td>
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<td>4:35PM</td>
<td>Comparison of Feature Selection Methods for Syncope Prediction [CEC7353]</td>
<td>Mathieu Feuilloy, Pascal Nicolas, ESEO - LERIA, LERIA - Univ. of Angers, ESEO</td>
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3:35PM  
**Improvement of an Artificial Neural Network Model Using Min-Max Preprocessing for the Prediction of Wave-induced Seabed Liquefaction [IJCNN1404]**

Deaho Cha  Griffith Univ.
Michael Blumenstein  Univ. of Sydney
Hong Zhang  Univ. of Sydney
Dong-Sheng Jeng  Univ. of Sydney

3:55PM  
**Nonlinear Principal Component Analysis of Noisy Data [IJCNN1720]**

William Hsieh  Univ. of British Columbia

4:15PM  
**Reducing Uncertainties in Neural Network Jacobians and Improving Accuracy of Neural Network Emulations with NN Ensemble Approaches [IJCNN1739]**

Vladimir Krasnopolsky  National Centers for Envtl. Prediction

4:35PM  
**A Hybrid Neural Network/Analog Model for Multi-site Climate Downscaling [IJCNN1764]**

Alex Cannon  Meteorological Service of Canada

4:55PM  
**Unsupervised Learning Neural Network for Classification of Ship-Hull Fouling Conditions [IJCNN1828]**

Pei-Fang Wang  Spawar Sys.s Center
Stephen Lieberman  San Diego State Univ. Foundation
Ho Liyen  San Diego State Univ. Foundation

5:30PM-6:30PM  
**IJCNN Invited Talk, Thursday**

**Computational Intelligence in Feedback Systems**
Marios Polycarpou

Chair:  Shiro Usui

6:30PM-9:00PM  
**FUZZ-IEEE Invited Talk, Thursday**

**Interval Type-2 Fuzzy Logic Systems Made Simple by Using Type-1 Mathematics**
Jerry Mendel

Chair:  Rudolf Kruse

FriAM-1  
**SS-Sc: Neural Network Models & Applications in Neuroscience & Neuro-Genetics**
Chairs:  Kasabov, Marcus, Rajapakse, Howell

8:00AM  
**Neural Networks and Classification and Regression Trees Are Able to Distinguish Females with Major Depression from Healthy Controls Using Neuroimaging Data [IJCNN2028]**

Alexandru Floares  Oncologival Inst. Cluj-Napoca
Angela Jakary  Veterans Affairs Medical Center
Aaron Bornstein  Veterans Affairs Medical Center
Raymond Deikken  Veterans Affairs Medical Center

8:20AM  
**Exploring Standard Self-Organizing Map Internal Structure in the Learning [IJCNN1900]**

Kirmene Marzouki  Kyushu Inst. of Tech.
Takeshi Yamakawa  Kyushu Inst. of Tech.

8:40AM  
**Genetic Specification of Recurrent Neural Networks: Initial Thoughts [IJCNN2074]**

William Neil Howell  Natural Resources Canada

9:00AM  
**Computational Developmental NeuroSci.: Exploring the Interactions Between Genetics and Neural Activity [IJCNN1999]**

Jean-Philippe Thivierge  Universite de Montreal
Gary F. Marcus  New York Univ.

9:20AM  
**Computational Neurogenetic Modeling: A Methodology to Study Gene Interactions Underlying Neural Oscillations [IJCNN1119]**

Lubica Benuskova  Auckland Univ. of Tech.
Simei Wysoski  Auckland Univ. of Tech.
Nik Kasabov  Auckland Univ. of Tech.
8:20AM
**Automatic Frequency Bands Segmentation Using Statistical Similarity for Power Spectrum Density Based Brain Computer Interfaces** [IJCNN2044]
Lan Tian  OGI at OHSU
Erdogmus Deniz  OGI at OHSU
Pavel Misha  OGI at OHSU
Mathan Santosh  Human Centered Sys.s Group

9:00AM
**A New, Human-centered Wheelchair System Controlled by the EMG Signal** [IJCNN1299]
Kyuwan Choi  Tokyo Inst. of Tech.
Makoto Sato  Tokyo Inst. of Tech.
Yasuharu Koike  Tokyo Inst. of Tech.
Tohru Kawabe  Univ. of Tsukuba

9:20AM
**Stepwise Feature Selection by Cross Validation for EEG-based Brain Computer Interface** [IJCNN1587]
Kenji Tanaka  Univ. of Tsukuba
Takio Kurita  National Inst. of Advanced Industrial Sci.
Luc Berthouze  National Inst. of Advanced Industrial Sci.
Tohru Kawabe  Univ. of Tsukuba

8:40AM
**Anti-swing Control for Overhead Crane with Neural Compensation** [IJCNN1269]
Rigoberto Toxqui  Cinvestav-ipn
Wen Yu  Cinvestav-ipn
Xiaou Li  Cinvestav-ipn

9:00AM
**SEVA3D: Using Artificial Neural Networks to Autonomous Vehicle Parking Control** [IJCNN1403]
Milton Heinen  Unisinos
Fernando Osorio  Unisinos
Farlei Heinen  Unisinos
Christian Kelber  Unisinos

8:40AM
**Brain Computer Interface Using EEG Sensors Based on an fMRI Experiment** [IJCNN1915]
Sang Han Choi  Kyungpook National Univ.
Min Ho Lee  Kyungpook National Univ.

9:00AM
**On Stability of Nonlinear Observers Based on Neural Networks** [IJCNN1272]
Farzaneh Abdollahi  Concordia Univ.
Heidar Ali Talebi  Amirkabir Univ. of Tech.
Rajni Patel  Univ. of Western Ontario

9:20AM
**Arm Motion Reconstruction via Feature Clustering in Joint Angle Space** [IJCNN2036]
Jack DiGiovanna  Univ. of Florida
Justin C. Sanchez  Univ. of Florida
B. J. Fregly  Univ. of Florida
Jose C. Pricipe  Univ. of Florida

9:40AM
**Feature Selection, Extraction & Aggregation I**
Chairs: Nick Pizzi & Srinivas Mukkamala

8:00AM
**Bimodal Projection-based Features for Pattern Classification** [IJCNN1488]
Dipti Deodhare  Centre for Artificial Intelligence & Robotics
Vidyasagar M  Tata Consultancy Services
Narasimha Murty M  Indian Inst. of Sci.

8:20AM
**A Computational Intelligence Strategy for Software Complexity Prediction** [IJCNN1721]
Nick Pizzi  National Research Council of Canada

8:40AM
**Sensor Selection for Driving State Recognition** [IJCNN2062]
Kari Torkkola  Motorola
Mike Gardner  Motorola
Chris Schreiner  Motorola
Keshu Zhang  Motorola
Bob Leivian  Motorola

9:00AM
**Data Partition and Variable Selection for Time Series Prediction using Wrappers** [IJCNN1964]
Wilfredo Puma Villanueva  Unicamp
Euripedes Pinheiro dos Santos  Unicamp
Fernando Von Zuben  Unicamp

9:20AM
**C2FS: An Algorithm for Feature Selection in Cascade Neural Nets** [IJCNN1609]
Lars Backstrom  Cornell Univ.
Rich Caruana  Cornell Univ.
9:40AM  
**Feature Ranking and Selection for Intrusion Detection Using Artificial Neural Networks and Statistical Methods**  
*IJCNN1866*  
Srinivas Mukkamala  
New Mexico Tech.

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**FriAM-5**  
**Supervised Learning in Feedforward Neural Networks**  
Chairs: Haikun Wei & Daqi Gao

8:00AM  
**On Derivation of Stagewise Second-order Backpropagation by Invariant Imbedding for Multi-stage Neural-network Learning**  
*IJCNN1271*  
Eiji Mizutani  
Tsing Hua Univ.  
Stuart Dreyfus  
Univ. of California

8:20AM  
**Online Learning Dynamics of Radial Basis Function Neural Networks near the Singularity**  
*IJCNN1145*  
Haikun Wei  
RIKEN Brain Sci. Inst.  
Shun-ichi Amari  
RIKEN Brain Sci. Inst.

8:40AM  
**Improving the Convergence of Backpropagation by Opposite Transfer Functions**  
*IJCNN1605*  
Mario Ventresca  
Univ. of Waterloo  
Hamid Tizhoosh  
Univ. of Waterloo

9:00AM  
**Effective Training Methods for Function Localization Neural Networks**  
*IJCNN1296*  
Takafumi Sasakawa  
Waseda Univ.  
Jinglu Hu  
Waseda Univ.  
Katsunori Isono  
Waseda Univ.  
Kotaro Hirasaki  
Waseda Univ.

9:20AM  
**A New Constructive Approach for Creating All Linearly Separable (Threshold) Functions**  
*IJCNN1457*  
Leonardo Franco  
Univ. of Malaga  
Jose Luis Subirats  
Univ. of Malaga  
Martin Anthony  
London School of Economics  
Jose Jerez  
Univ. of Malaga

9:40AM  
**A Mixed Parallel Perceptron Classifier and Several Application Problems**  
*IJCNN1546*  
Daqi Gao  
East China Univ. of Sci. & Tech.  
Hao Li  
East China Univ. of Sci. & Tech.  
Wei Chen  
East China Univ. of Sci. & Tech.
9:00AM
Decoupled fuzzy PI Controller Tuning Scheme for Multivariable Processes [FUZZ4477]
Eranda Harinath  Memorial Univ. of Newfoundland
George Mann  Memorial Univ. of Newfoundland

9:20AM
Sliding Mode Fuzzy Control with Optimal Rule Table  [FUZZ4419]
Hamid Allamehzadeh  Eastern New Mexico Univ.

9:40AM
Stability Analysis of the Simplest Takagi-Sugeno Fuzzy Control System Using Circle Criterion [FUZZ4055]
Xiaojun Ban  Harbin Inst. of Tech.
X. Z. Gao  Helsinki Univ. of Tech.
Xianlin Huang  Harbin Inst. of Tech.
Hang Yin  Harbin Inst. of Tech.

FriAM-9
Evolvable Hardware
Chair:  Garry Greenwood

8:00AM
Extrinsic and Intrinsic Evolution of Multifunctional Combinational Modules [CEC7241]
Lukas Sekanina  Brno Univ. of Tech.
Tomas Martinek  Brno Univ. of Tech.
Zbysek Gajda  Brno Univ. of Tech.

8:20AM
A Cooperative Approach to Compact Genetic Algorithm for Evolvable Hardware [CEC7762]
Prabhas Chongstitvatana  Chulalongkorn Univ.

8:40AM
An Incremental Evolutionary Strategy for the Design of FIR Filters Targeting Real-Time Applications [CEC7347]
Evanaglos Stefatos  Univ. of Edinburgh
Tughrul Arslan  Univ. of Edinburgh

FriAM-8
Fuzzy Database, Information Retrieval & Natural Language Processing
Chair:  Stefan C. Kremer

8:00AM
SQLf vs. Skyline - Expressivity and Performance [FUZZ4075]
Marlene Goncalves  Universidad Simon Bolivar
Leonid Tineo  Universidad Simon Bolivar

8:20AM
Hybrid Query Session and Content-based Recommendations for Enhanced Search [FUZZ4460]
Zhiyong Zhang  Univ. of Louisville
Olfa Nasraoui  Univ. of Louisville

8:40AM
Syntax-driven Analysis of Context-free Languages with Respect to Fuzzy Relational Semantics [FUZZ4146]
Richard Bergmair  Univ. of Cambridge
Ulrich Bodenhofer  Software Competence Center Hagenberg

9:00AM
Fuzzy Grammar Induction from Large Corpora [FUZZ4425]
Patrick Carter  Univ. of Guelph
Stefan C. Kremer  Univ. of Guelph

9:20AM
Development of a New Corpus System for English Writing Support and its Fundamental Study [FUZZ4227]
Masayuki Murakami  Univ. of Electro-Communications
Masaru Kimura  Univ. of Electro-Communications
Nakaji Honda  Univ. of Electro-Communications

9:40AM
General Fuzzy Automata, New Efficient Acceptors for Fuzzy Languages [FUZZ4039]
Mansoor Doostfatemeh  Univ. of Guelph
Stefan C. Kremer  Univ. of Guelph

FriAM-10
Combinatorial & Numerical Optimization I
Chair:  Sushil Louis

8:00AM
Improving Evolution Strategies through Active Covariance Matrix Adaptation [CEC7202]
Grahame Jastrebski  Dalhousie Univ.
Dirk V. Arnold  Dalhousie Univ.

8:20AM
Niching Method for Combinatorial Optimization Problems and Application to JSP [CEC7438]
Nagata Yuichi  Japan Advanced Inst. of Sci. & Tech.
8:40AM
Handling Time-varying TSP Instances [CEC7506]
Fabricio O. de Franca  LBIC/FEEC/Unicamp
Lalinka Gomes  Unicamp
Leandro de Castro  UniSantos
Fernando Von Zuben  Unicamp

9:00AM
A Simple Cellular Genetic Algorithm for Continuous Optimization [CEC7659]
Bernabe Dorronsoro  Univ. of Malaga
Enrique Alba  Univ. of Malaga

9:20AM
Symmetric Comparator Pairs in the Initialization of Genetic Algorithm Populations for Sorting Networks [CEC7549]
Lee Graham  Carleton Univ.
Franz Oppacher  Carleton Univ.

8:00AM
An Evolution Strategy for Improving the Design of Phased Array Transducers [CEC7431]
Stephen Chen  York Univ.
Sarah Razzazi  Univ. of Toronto
Vincent Lupien  Acoustic Ideas Inc.

8:40AM
Ensembles of Selected and Evolved Predictors using Genetic Algorithms for Time Series Prediction [CEC7309]
Marcos Leone Filho  DENSIS-IEEC-UNICAMP
Takaaki Ohtshi  DENSIS-IEEC-UNICAMP
Rosangela Ballini  DTE-IE-UNICAMP

9:00AM
Improved Evolutionary Search for Image Reconstruction Transforms [CEC7318]
Michael Peterson  Wright State Univ.
Gary Lamont  Air Force Inst. of Tech.
Frank Moore  Univ. of Alaska

9:20AM
Accurate Resolution of Signals Using Integer-coded Genetic Algorithms [CEC7173]
Hazem Abbas  Mentor Graphics

9:40AM
Immune-inspired Dynamic Optimization for Blind Spatial Equalization in Undermodeled Channels [CEC7468]
Cynthia Junqueira  CTA/IAE
Fabricio O. de Franca  LBIC/FEEC/Unicamp
Romis R. F. Attux  DSPCom/FEEC/Unicamp
Cristiano M. Panazio  LCS/PTC/EPUSP
Leandro N. de Castro  Catholic Univ. of Santos

8:00AM
Opportunistic Fitness Evaluation in a Genetic Algorithm for Civil Engineering Design Optimization. [CEC7490]
David Joslin  Seattle Univ.
Jeff Dragovich  Seattle Univ.
Hoa Vo  Seattle Univ.
Justin Terada  Seattle Univ.

8:20AM
Evolutionary Algorithms in the Optimization of Dynamic Molecular Alignment [CEC7348]
Christian Siedschlag  FOM-Instituut AMOLF
Thomas Baek  Leiden Inst. of Advanced Computer Sci.
Marc Vrakking  FOM-Instituut AMOLF

8:40AM
Assessing Robustness of Optimization Performance for Problems with Expensive Evaluation Functions [CEC7043]
Evan Hughes  Cranfield Univ.

9:00AM
Curse and Blessing of Uncertainty in Evolutionary Algorithm Using Approximation [CEC7495]
Yew-Soon Ong  Nanyang Tech. Univ.
ZongZhao Zhou  Nanyang Tech. Univ.
Dudy Lim  Nanyang Tech. Univ.

9:20AM
Local Learning and Search in Memetic Algorithms [CEC7601]
Frederico Guimaraes  Federal Univ. of Minas Gerais
Elizabeth Wanner  Federal Univ. of Minas Gerais
Felipe Campelo  Hokkaido Univ.
Ricardo Takahashi  Federal Univ. of Minas Gerais
Hajime Igarashi  Hokkaido Univ.
David Lowther  McGill Univ.
Jaime Ramirez  Federal Univ. of Minas Gerais

9:40AM
Predicting Stochastic Search Algorithm Performance using Landscape State Machines [CEC7312]
William Rowe  Univ. of Manchester
David Corne  Heriot-Watt Univ.
Joshua Knowles  Univ. of Manchester
FriAM-13
Evolutionary Neural Networks
Chair: Bernhard Sendhoff

8:00AM
Evolutionary Neural Networks [IJCNN1155]
John Bullinaria  Univ. of Birmingham

8:20AM
Ensemble Techniques for Avoiding Poor Performance in Evolved Neural Networks [IJCNN1155]
John Bullinaria  Univ. of Birmingham

8:40AM
A Neuromodulatory Neural Networks Model for Environmental Cognition and Motor Adaptation [IJCNN1902]
Tosshiyuki Kondo  Tokyo Univ. of Agriculture & Tech.
Koji Ito  Tokyo Inst. of Tech.

9:00AM
Cluster Distance Factor Searching by Particle Swarm Optimization for Self-growing Radial Basis Function Neural Network [IJCNN1327]
Chun-Ling Lin  National Dong Hwa Univ.
Sheng-Ta Hsieh  National Dong Hwa Univ.
Tsung-Ying Sun  National Dong Hwa Univ.
Chan-Cheng Liu  National Dong Hwa Univ.

9:20AM
Bayesian Learning of Neural Networks by Means of Artificial Immune Systems [IJCNN1745]
Pablo A. D. Castro  Unicamp
Fernando J. Von Zuben  Unicamp

9:40AM
Generalization Improvement in Multi-objective Learning [IJCNN1892]
Lars Graening  Honda Research Inst. Europe
Yaocu Jin  Honda Research Inst. Europe
Bernhard Sendhoff  Honda Research Inst. Europe

FriAM-14
SS-7: Computational Intelligence in Earth & Environmental Sciences III
Chairs: Hsieh, Krasnopolsky, Solomatine, Valdes

8:00AM
Eager and Lazy Learning Methods in the Context of Hydrologic Forecasting [IJCNN1781]
Dimitri Solomatine  UNESCO-IIE Inst. for Water Education
Mahesh Maskey  NepalConsult (P.) Ltd.
Shrestha Durga Lal  UNESCO-IIE Inst. for Water Education

8:20AM
Improving Empirical Models with Machine Learning [IJCNN1782]
Biswa Bhattacharya  Inst. for Water Education
Dimitri Solomatine  Inst. for Water Education

8:40AM
Virtual Reality Visual Data Mining via Neural Networks obtained from Multi-objective Evolutionary Optimization: Application to Geophysical Prospecting [IJCNN1824]
Julio J. Valdes  National Research Council Canada
Alan J. Barton  National Research Council Canada

9:00AM
Forecasting Cyanobacteria with Bayesian and Deterministic Artificial Neural Networks [IJCNN1869]
Greer Kingston  Univ. of Adelaide
Holger Maier  Univ. of Adelaide
Martin Lambert  Univ. of Adelaide

9:20AM
Knowledge Extraction in Geochemical Data by using Self-organizing Maps. [IJCNN1907]
Juan Pablo Lacassie  Servicio Nacional de Geologia y Mineria
Javier Ruiz-Del-Solar  Universida

9:40AM
An Embedded Hardware-Software System to Detect and Foresee Road Ice Formation [IJCNN1918]
Eros Pasero  Politecnico di Torino
Tassilo Meindl  Politecnico di Torino
Walter Moniaci  n-lab s.r.l.
Marco Riccardi  Politecnico di Torino

FriAM-15
SS-S8: Hybrid Fuzzy Intelligent Systems I
Chair: Oscar Castillo

8:00AM
A Hammerstein Neuro-Fuzzy Network with an Online Hybrid Construction Algorithm for Dynamic Applications [FUZZ4203]
Jeen-Shing Wang  National Cheng Kung Univ.
Yen-Ping Chen  National Cheng Kung Univ.

8:20AM
Fitting Fuzzy Membership Functions using Hybrid Particle Swarm Optimization [FUZZ4118]
Ahmed Esmin  Federal Univ. at Itajuba
Germano Lambert-Torres  Federal Univ. at Itajuba

8:40AM
HMM based Fuzzy Model for Time Series Prediction [FUZZ4373]
Md. Rafiuil Hassan  Univ. of Melbourne
Baiikunth Nath  Univ. of Melbourne
Michael Kirley  Univ. of Melbourne
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<tr>
<th>Time</th>
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<tr>
<td>9:00AM</td>
<td>TECHNICAL PROGRAM LISTING</td>
<td><strong>Spread-Repair-Shrink: A Hybrid Algorithm for Solving Fuzzy Constraint Satisfaction Problems</strong> [FUZZ4229]</td>
<td>Yasuhiro Sudo, Masahito Kurihara</td>
<td>Hokkaido Univ.</td>
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<td>9:40AM</td>
<td>A New Variable Bit Rate (VBR) Video Traffic Model Based on Fuzzy Systems Implemented Using Generalized Regression Neural Networks (GRNN) [FUZZ4480]</td>
<td><strong>A New Variable Bit Rate (VBR) Video Traffic Model Based on Fuzzy Systems Implemented Using Generalized Regression Neural Networks (GRNN)</strong> [FUZZ4480]</td>
<td>Ebrahim Gharavol, Morteza Khademi, M.-R. Akbarzadeh-T.</td>
<td>Ferdowsi Univ. of Mashhad</td>
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<td>10:30AM-11:30AM</td>
<td>Grand Ballroom</td>
<td><strong>WCCI Plenary Talk, Friday</strong></td>
<td>Stochastic Reasoning, Bayesian Inference, and Information Geometry</td>
<td>Chair: Gary G. Yen</td>
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<td>FriMM-1</td>
<td><strong>FriMM-1</strong></td>
<td><strong>SS-S9: Principles &amp; Applications of Adaptive Information Modeling</strong></td>
<td>Jose Principe &amp; Deniz Erdogmus</td>
<td>Gulf Islands BCD</td>
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<td>1:20PM</td>
<td>Critical Values of a Kernel Density-based Mutual Information Estimator [IJCNN1298]</td>
<td><strong>Critical Values of a Kernel Density-based Mutual Information Estimator</strong> [IJCNN1298]</td>
<td>Robert May, Graeme Dandy, Holger Maier, Gayani Fernando</td>
<td>Univ. of Adelaide</td>
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<td>1:40PM</td>
<td>Information Theoretic Angle-based Spectral Clustering: A Theoretical Analysis and an Algorithm [IJCNN1616]</td>
<td><strong>Information Theoretic Angle-based Spectral Clustering: A Theoretical Analysis and an Algorithm</strong> [IJCNN1616]</td>
<td>Robert Jenssen, Deniz Erdogmus, Jose Principe, Torbjorn Eltoft</td>
<td>Univ. of Tromso</td>
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<tr>
<td>2:00PM</td>
<td>Neural Network Data Clustering on the Basis of Scale Invariant Entropy [IJCNN1656]</td>
<td><strong>Neural Network Data Clustering on the Basis of Scale Invariant Entropy</strong> [IJCNN1656]</td>
<td>Alexander Tatuzov, Nikolay Kurenkov</td>
<td>Moscow Inst. of Physics &amp; Tech. Research Center for Pattern Recognition</td>
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<td>2:20PM</td>
<td>Correntropy: A Localized Similarity Measure [IJCNN1596]</td>
<td><strong>Correntropy: A Localized Similarity Measure</strong> [IJCNN1596]</td>
<td>Weifeng Liu, Puskal Pokharel, Jose Principe</td>
<td>Univ. of Florida Univ. of Florida Univ. of Florida</td>
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<td>1:00PM</td>
<td><strong>FriMM-2</strong></td>
<td><strong>SS-So: Sapient Systems</strong></td>
<td>Rene V. Mayorga &amp; Leonid Perlovsky</td>
<td>Univ. of Regina</td>
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<td>2:00PM</td>
<td>Studies on Sparse Array Cortical Modeling and Memory Cognition Duality [IJCNN1061]</td>
<td><strong>Studies on Sparse Array Cortical Modeling and Memory Cognition Duality</strong> [IJCNN1061]</td>
<td>Kaushik Majumdar, Robert Kozma</td>
<td>Univ. of Memphis Univ. of Memphis</td>
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<td>2:20PM</td>
<td>Learning Hierarchical Action Selection for an Autonomous Robot [IJCNN1664]</td>
<td><strong>Learning Hierarchical Action Selection for an Autonomous Robot</strong> [IJCNN1664]</td>
<td>Nils Goerke, Timo Henne</td>
<td>Univ. of Bonn Univ. of Bonn</td>
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<td>2:40PM</td>
<td>Complex Systems Approaches to Emergent Goal Formation in Cognitive Agents [IJCNN1682]</td>
<td><strong>Complex Systems Approaches to Emergent Goal Formation in Cognitive Agents</strong> [IJCNN1682]</td>
<td>Derek Harter</td>
<td>Texas A &amp; M Univ.</td>
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TECHNICAL PROGRAM LISTING

**FriMM-3**

**Intelligent Control Applications II**

*Chairs:* Chih-Lyang Hwang & Clarence W. de Silva

1:00PM

*Limit Cycle Prediction of a Neural Vehicle Control System with Gain-phase Margin Tester [IJCNN1562]*

Jau-Woei Perng  National Chiao Tung Univ.
Bing-Fei Wu  National Chiao Tung Univ.
Tsu-Tian Lee  National Taipei Univ. of Tech.

1:20PM

*Neural Network Control of Spark Ignition Engines with High EGR Levels [IJCNN1418]*

Atmika Singh  Univ. of Missouri-Rolla
Jonathan Vance  Univ. of Missouri-Rolla
Brian Kaul  Univ. of Missouri-Rolla
Sarangapani Jagannathan  Univ. of Missouri-Rolla
James Drallmeier  Univ. of Missouri-Rolla

1:40PM

*Temperature Control of a Rubber Shoot Shaping Machine by Recurrent Neural Fuzzy Controller [IJCNN1077]*

Chia-Feng Juang  National Chung-Hsing Univ.
Shui-Tien Huang  National Chung-Hsing Univ.
Yuan-Chang Liou  Chung Chou Inst. of Tech.

2:00PM

*Designing a Muscle like System based on PID Controller and Tuned by Neural Network [IJCNN1187]*

Hayssam Serhan  Lebanese Univ.
Chaiban Nasr  Lebanese Univ.
Patrick Henaff  LIRIS Lab.

2:20PM

*Extend Single-agent Reinforcement Learning Approach to a Multi-robot Cooperative Task in an Unknown Dynamic Environment [IJCNN1579]*

Ying Wang  Univ. of British Columbia
Clarence W. de Silva  Univ. of British Columbia

2:40PM

*Multivariable Adaptive Control of Nonlinear Unknown Dynamic Systems Using Recurrent Neural-Network [IJCNN1114]*

Chih-Lyang Hwang  Tatung Univ.

**FriMM-4**

**Feature Selection, Extraction & Aggregation II**

*Chair:* Shiro Usui

1:00PM

*Handwritten Signature Authentication using Artificial Neural Networks [IJCNN1665]*

Milton Heinen  Unisinos
Fernando Osorio  Unisinos

1:20PM

*P-SVM Variable Selection for Discovering Dependencies between Genetic and Brain Imaging Data [IJCNN1508]*

Johannes Mohr  Charite Univ. Medicine Campus Mitte
Imke Puls  Charite Univ. Medicine Campus Mitte
Jana Wrase  Charite Univ. Medicine Campus Mitte
Sepp Hochreiter  Charite Univ. Medicine Campus Mitte
Andreas Heinz  Charite Univ. Medicine Campus Mitte
Klaus Obermayer  Charite Univ. Medicine Campus Mitte

1:40PM

*Wavelet-based Feature Extraction for Microarray Data Classification [IJCNN1421]*

Shutao Li  Hunan Univ.
Chen Liao  Hunan Univ.
James T. Kwok  Hong Kong Univ. of Sci. & Tech.

2:00PM

*Estimating Mutual Information Using Gaussian Mixture Model for Feature Ranking and Selection [IJCNN2046]*

Lan Tian  OGI at OHSU
Erdogmus Deniz  OGI at OHSU
Ozertem Umut  OGI at OHSU
Huang Yonghong  OGI at OHSU

2:20PM

*A Computational Intelligence-based Criterion to Detect Non-stationarity Trends [IJCNN1877]*

Cesare Alippi  Politecnico di Milano
Manuel Roveri  Politecnico di Milano

2:40PM

*Extracting Keywords from Research Abstracts for the Neuroinformatics Platform Index Tree [IJCNN1126]*

Tatsuki Taniguchi  RIKEN Brain Sci. Inst.
Naonori Ueda  NTT Communication Sci. Lab.s

**FriMM-5**

**Feedforward Neural Networks**

*Chair:* Donald Specht

1:00PM

*Training Reformulated Product Units in Hybrid Neural Networks [IJCNN2098]*

Philip Elliott  Univ. of Reading
Diven Topiwala  Thales Research & Tech.
Will Browne  Univ. of Reading

1:20PM

*Construction of Neural Network Based Lyapunov Functions [IJCNN1313]*

Vassilios Petridis  Aristotle Univ. of Thessaloniki
Stavros Petridis  Carnegie Mellon Univ.

1:40PM

*Enhancing Fault Tolerance of Radial Basis Functions [IJCNN1151]*

Ralf Eickhoff  Univ. of Paderborn
Ulrich Rueckert  Univ. of Paderborn
2:00PM
**GRNN with Double Clustering** [IJCNN1046]
Donald Specht  Lockheed Martin Corp.

2:20PM
**Inheritance of Information in ANNs and Its Alignment to Equivalence Relations** [IJCNN1014]
Richard Neville  Univ. of Manchester
Liping Zhao  Univ. of Manchester

2:40PM
**Online Training of a Generalized Neuron with Particle Swarm Optimization** [IJCNN1791]
Raveesh Kiran  Univ. of Missouri-Rolla
Sandhya Jetti  Univ. of Missouri-Rolla
Ganesh Kumar Venayagamoorthy  Univ. of Missouri-Rolla

FriMM-6
**Fuzzy & Probabilistic Modeling**
Chair:  Zeungnam Bien

1:00PM
**Rule-based Inference Method for Fuzzy-quantified and Truth-qualified Natural Language Propositions** [FUZZ4014]
Wataru Okamoto
Shun'ichi Tano  Univ. of Electro-Communications
Atsushi Inoue  Eastern Washington Univ.
Ryosuke Fujioka  Kobe Sogo Sokki Co., Ltd.

1:20PM
**Balancing Interpretabili ty and Accuracy by Multi-level Fuzzy Information Granulation** [FUZZ4396]
Corrado Mencar  Univ. of Bari
Giovanna Castellano  Univ. of Bari
Anna Maria Fanelli  Univ. of Bari

1:40PM
**A Study on Noise Tolerance of the IDS Method in Regression** [FUZZ4438]
Masayuki Murakami  Univ. of Electro-Communications
Nakaji Honda  Univ. of Electro-Communications

2:00PM
**Correspondences between Fuzzy Equivalence Relations and Kernels: Theoretical Results and Potential Applications** [FUZZ4244]
Bernhard Moser  Software Competence Center Hagenberg
Ulrich Bodenhofer  Software Competence Center Hagenberg

2:20PM
**Bayesian Interpretation of Adaptive Fuzzy Neural Network Model** [FUZZ4254]
Sang Wan Lee  KAIST
Dae-Jin Kim  KAIST
Yong Soo Kim  KAIST
Zeungnam Bien  KAIST

2:40PM
**Reduction of Generalization Error in Fuzzy System Modeling** [FUZZ4473]
Mehmet Bodur  Eastern Mediterranean Univ.
Adnan Acan  Eastern Mediterranean Univ.
Ahmet Unveren  Eastern Mediterranean Univ.

FriMM-7
**Fuzzy Control Theory IV**
Chair:  Hugang Han

1:00PM
**Theoretical Analysis for a Design of Delay-Dependent Fuzzy Control System with Input Saturation** [FUZZ4391]
Hugang Han  Prefectural Univ. of Hiroshima

1:20PM
**On the Nonlinear Fuzzy Regulation for under-actuated systems** [FUZZ4401]
Jesus A. Meda-Campana  Cinvestav-IPN
Bernardino Castillo-Toledo  Cinvestav-IPN
Victor Zuniga  Cinvestav-IPN

2:00PM
**Stability Analysis of Equilibrium Points in Static Fuzzy Control Systems with Reference Inputs and Adjustable Parameters** [FUZZ4152]
Bing-Fei Wu  National Chiao Tung Univ.
Li-Shan Ma  Chienkuo Tech. Univ.
Jau-Woei Perng  National Chiao Tung Univ.
Hung-I Chin  Ming Shin Univ. of Sci. & Tech.
Tsu-Tien Lee  National Taipei Univ. of Tech.

FriMM-8
**Fuzzy Sets Applications to Communications & Signal Processing**
Chair:  Chao-Lieh Chen

1:00PM
**Towards Utilizing Fuzzy Self-Organizing Taxonomies to Identify Attacks on Computer Systems and Adaptively Respond** [FUZZ4209]
Gregory Vert  Univ. of Nevada Reno
Rene Doursat  Univ. of Nevada Reno
Sara Nasser  Univ. of Nevada Reno

1:20PM
**MobiPADS++: A Mobile QoS Middleware based on Hierarchical Fuzzy Control** [FUZZ4517]
Siu-Nam Chuang  Hong Kong Polytechnic Univ.
Alvin T. S. Chan  Hong Kong Polytechnic Univ.
1:40PM  
**Multi-objective Particle Swarm Optimization for Fuzzy Logic Based Active Queue Management [FUZZ4239]**
Clement Nyirenda  Univ. of KwaZulu-Natal  
Dawoud Dawoud  Univ. of KwaZulu-Natal

2:00PM  
**Distributed Fuzzy Controller for the IEEE 802.11e QoS and Its RTL Fast Prototyping [FUZZ4417]**
Chao-Lieh Chen  Kun-Shan Univ.  
Yao-Deh Huang  Kun-Shan Univ.

2:20PM  
**Fuzzy Service Quality Review in Service Oriented Architectures [FUZZ4539]**
Stefán Schmidt  Univ. of Tech.  
Robert Steele  Univ. of Tech.  
Tharam Dillon  Univ. of Tech.  
Elizabeth Chang  Curtin Univ. of Tech.

2:40PM  
**State Estimation Method for Sound Environment System with Unknown Structure by Introducing a Fuzzy Adaptive Filter [FUZZ4161]**
Hisako Masuike  NTT DATA Chugoku  
Akira Ikuta  Prefectural Univ. of Hiroshima  
Yegui Xiao  Prefectural Univ. of Hiroshima

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**FriMM-9**  
**SS-Z5: Hardware Implementation for Genetic Neural & Fuzzy Systems I**
Chair:  Nadia Nedjah

1:00PM  
**Genetic Learning of Digital Three-layer Perceptrons for Implementation of Binary Cellular Automata [CEC7461]**
Takashi Yamamichi  HOSEI Univ.  
Toshimichi Satto  HOSEI Univ.  
Hiroyuki Torikai  HOSEI Univ.

1:20PM  
**A Hybrid Bio-inspired System: Hardware Spiking Neural Network Incorporating Hebbian Learning with Microprocessor Based Evolutionary Control Algorithm [CEC7176]**
David Allen  Univ. of Southampton  
David Halliday  Univ. of York  
Andy Tyrell  Univ. of York

1:40PM  
**An Immune Fault Detection System for Analog Circuits with Automatic Detector Generation [CEC7391]**
Jorge Amaral State  Univ. of Rio de Janeiro  
Jose Amaral State  Univ. of Rio de Janeiro  
Ricardo Tanscheit  Catholic Univ. of Rio de Janeiro

2:00PM  
**Parallel Hybrid Genetic Algorithms on Consumer-level Graphics Hardware [CEC7208]**
Man-Leung Wong  Lingnan Univ.  
Tien-Tsin Wong  CUHK

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**FriMM-10**  
**Combinatorial & Numerical Optimization II**
Chair:  Thomas Runarsson

1:00PM  
**A Memetic Algorithm for a Multi-criteria Sequencing Problem of Mixed-Model Assembly Lines in a JIT Production System [CEC7446]**
Reza Tavakkoli-Moghaddam  Univ. of Tehran  
Ali Reza Rahimi-Vahed  Univ. of Tehran

1:20PM  
**A Multiparent Version of the Parent-centric Normal Crossover for Multimodal Optimization [CEC7449]**
Pedro J. Ballester  Oxford Univ.  
W. Graham Richards  Oxford Univ.

1:40PM  
**A Fuzzy Clustering Based Selection Method to Maintain Diversity in Genetic Algorithms [CEC7267]**
Yoshiaki Sakakura  Ritsumeikan Univ.  
Noriyuki Taniguchi  Ritsumeikan Univ.  
Yukinobu Hoshino  Ritsumeikan Univ.  
Katsuari Kamei  Ritsumeikan Univ.

2:00PM  
**A Multiresolutional Estimated Gradient Architecture for Global Optimization [CEC7234]**
Megan Hazen  Univ. of Washington  
Maya Gupta  Univ. of Washington

2:20PM  
**RasID-GA with Simplex Crossover (SPX) for Optimization Problems [CEC7134]**
DongKyu Sohn  Waseda Univ.  
Shingo Mabu  Waseda Univ.  
Kotaro Hirasawa  Waseda Univ.  
Jinglu Hu  Waseda Univ.

2:40PM  
**Immune Algorithm Based Routing Optimization in Fourth-party Logistics [CEC7432]**
Min Huang  Northeastern Univ.  
Wei Tong  Northeastern Univ.  
Qing Wang  Northeastern Univ.  
Xin Xu  Northeastern Univ.  
Xingwei Wang  Northeastern Univ.
## TECHNICAL PROGRAM LISTING

### FriMM-11

**Planning & Control**

Chair: Chris Miles

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<td>Waseda Univ.</td>
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<td>1:20PM</td>
<td>Project Scheduling in Decision-theoretic Competitive Bidding [CEC7184]</td>
<td>Haitao Li et al.</td>
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<td>Cooperative Transportation by Multiple Robots with Machine Learning [CEC7406]</td>
<td>Ying Wang et al.</td>
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<td>2:00PM</td>
<td>Elitist Compact Genetic Algorithms for Induction Motor Self-tuning Control [CEC7408]</td>
<td>Francesco Cupertino et al.</td>
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<td>Reliability Growth Modeling for Software Fault Detection Using Particle Swarm Optimization [CEC7183]</td>
<td>Alaa Sheta</td>
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### FriMM-13

**SS-S6: Evolving Neural-, Fuzzy-, & Hybrid Intelligent Systems**

Chair: Plamen Angelov

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<td>Separated Antecedent and Consequent Learning for Takagi-Sugeno Fuzzy Systems [FUZZ4430]</td>
<td>Janos Botzheim et al.</td>
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<td>Enhancing Autonomy and Computational Efficiency of the Self-Organizing Fuzzy Neural Network for a Brain Computer Interface [FUZZ4320]</td>
<td>Damien Coyle et al.</td>
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### Fri-M12

**SS-Zg: EC at Work- Generating Value with Evolutionary Computation**

Chair: Thorsten Schnier

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00PM</td>
<td>A Hybrid of Sequential-self Calibration and Genetic Algorithm Inverse Technique for Geostatistical Reservoir Modeling [CEC7786]</td>
<td>Tina Yu et al.</td>
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<td>Memorial Univ. of Newfoundland</td>
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<td>Xian-Huan Wen</td>
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<td>Chevron Energy Tech. Company</td>
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<td>Seong Lee</td>
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<td>Chevron Energy Tech. Company</td>
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</tbody>
</table>
1:40PM
An Incremental Principal Component Analysis for Chunk Data [FUZZ4159]
Seiichi Ozawa  Kobe Univ.
Shaoning Pang  Auckland Univ. of Tech.
Nikola Kasabov  Auckland Univ. of Tech.

2:00PM
A Fuzzy Set/Rule Distance for Evolving Fuzzy Anomaly Detectors [FUZZ4515]
Jonatan Gomez  Universidad Nacional de Colombia
Elizabeth Leon  Universidad Nacional de Colombia

2:20PM
Fuzzy Modeling Using Chaotic Particle Swarm Approaches Applied to a Yo-yo Motion System [FUZZ4376]
Leandro dos Santos Coelho  Pontifical Catholic Univ. of Parana
Bruno Meirelles Herrera  Pontifical Catholic Univ. of Parana

FriMM-14
SS-S7: Computational Intelligence in Earth & Environmental Sciences IV
Chairs:  Hsieh, Krasnopolsky, Solomatine, Valdes

1:00PM
Sue Ellen Haupt  Penn State Univ.
George Young  Penn State Univ.
Christopher Allen  Penn State Univ.

1:20PM
Learning Hydrologic Flow Separation Algorithm and Local ANN Committee Modeling [IJCNN1985]
Dimitri Solomatine  UNESCO-IHE Inst. for Water Education
Gerald Corzo  UNESCO-IHE Inst. for Water Education

1:40PM
Extraction of Components with Structured Variance [IJCNN1986]
Alexander Ilin  Helsinki Univ. of Tech.
Harri Valpola  Helsinki Univ. of Tech.
Erkki Oja  Helsinki Univ. of Tech.

FriMM-15
SS-S8: Hybrid Fuzzy Intelligent Systems II
Chair:  Oscar Castillo

1:00PM
Weather Radar Estimates of Rainfall, Adjusted to Rain Gauge Measurements Using Neural Networks [IJCNN2042]
Reinhard Teschl  Graz Univ. of Tech.
Walter Randeu  Graz Univ. of Tech.
Franz Teschl  Graz Univ. of Tech.

2:00PM
A Generic Approach to Fuzzy Logic Controller Synthesis on FPGA [FUZZ4357]
Jose Luis Gonzalez-Vazquez  UABC Univ.
Oscar Castillo  Tijuana Inst. of Tech.
Luis Tupak Aguilar-Bustos  Center for Research in Digital Sys.-IPN

2:20PM
A Genetic-Fuzzy System Approach to Control a Model of the HIV Infection Dynamics [FUZZ4111]
Miguel Melgarejo  Universidad Distrital FIC
Carlos Pena-Reyes  Novartis Inst. for Biomedical Research
Eduardo Sanchez  Swiss Federal Inst. of Tech. at Lausann

2:40PM
Design of Stable Type-2 Fuzzy Logic Controllers based on a Fuzzy Lyapunov Approach [FUZZ4123]
Oscar Castillo  Tijuana Inst. of Tech.
Patricia Melin  Tijuana Inst. of Tech.
Nohe Cazarez  Tijuana Inst. of Tech.
<table>
<thead>
<tr>
<th>Session</th>
<th>Time</th>
<th>Title</th>
<th>Authors/Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FriPM-1</td>
<td>3:15PM</td>
<td>The Influence of the Pool of Candidates on the Performance of Selection and Combination Techniques in Ensembles [IJCNN1236]</td>
<td>Guilherme P. Coelho, State Univ. of Campinas(Unicamp) Fernando J. Von Zuben, State Univ. of Campinas(Unicamp)</td>
</tr>
<tr>
<td></td>
<td>3:35PM</td>
<td>Investigations on the Characteristics of Random Decision Tree Ensemble [IJCNN1832]</td>
<td>Graeme Richards, Univ. of East Anglia Wenjia Wang, Univ. of East Anglia</td>
</tr>
<tr>
<td></td>
<td>4:15PM</td>
<td>Ensemble Learning for Hierarchies of Locally Arranged Models [IJCNN1491]</td>
<td>Florian Hoppe, Christian Albrechts Univ. of Kiel Gerald Sommer, Christian Albrechts Univ. of Kiel</td>
</tr>
<tr>
<td></td>
<td>4:35PM</td>
<td>Improving a Neural Network Classifier Ensemble with Multi-task Learning [IJCNN1607]</td>
<td>Qiang Ye, Univ. of Pittsburgh Paul Munro, Univ. of Pittsburgh</td>
</tr>
<tr>
<td>FriPM-2</td>
<td>3:15PM</td>
<td>Overview of Cellular Sensory Wave Computing</td>
<td>Bertram Shi, Hong Kong Univ. of Sci. &amp; Tech.</td>
</tr>
<tr>
<td></td>
<td>3:35PM</td>
<td>On the Hardware-Relevant Simulation of Regular Two-Dimensional CNN Processing Grids [IJCNN1459]</td>
<td>Stephan C. Stilkerich, EADS Corporate Research Center</td>
</tr>
<tr>
<td></td>
<td>3:55PM</td>
<td>Identification of EEG Signals in Epilepsy by Cell Outputs of Reaction-Diffusion Networks [IJCNN1647]</td>
<td>Frank Gollas, JWG Univ. Frankfurt Ronald Tetzelaff, JWG Univ. Frankfurt</td>
</tr>
<tr>
<td>FriPM-3</td>
<td>3:15PM</td>
<td>Neural Network Models for Teaching Multiplication Table in Primary School [IJCNN1689]</td>
<td>Alexander Tatuzov, Moscow Inst. of Phys. &amp; Tech.</td>
</tr>
<tr>
<td></td>
<td>4:15PM</td>
<td>In-Place Learning for Positional and Scale Invariance [IJCNN2108]</td>
<td>Juyang Weng, Michigan State Univ. Hong Lu, Fudan Univ. Tianyu Luwang, Fudan Univ. Xiangyang Xue, Fudan Univ.</td>
</tr>
</tbody>
</table>
Junior Ballroom C

FriPM-4
Hybrid Intelligent Systems
Chairs: Cleber Zanchettin & Teresa B. Ludermir

3:15PM
Multi-view ANNs for Multi-relational Classification
[IJCNN1239]
Hongyu Guo  Univ. of Ottawa
Herna Viktor  Univ. of Ottawa

3:35PM
A Methodology to Train and Improve Artificial Neural Networks' Weights and Connections [IJCNN1855]
Cleber Zanchettin  Federal Univ. of Pernambuco
Teresa B. Ludermir  Federal Univ. of Pernambuco

3:55PM
A Systems Software Architecture For Training Neural, Fuzzy Neural and Genetic Computational Intelligent Networks [IJCNN1328]
Taner Arsan Assistant  Professor, Turkey
Arif Selcuk Ogrenç  Professor, Turkey
Tuncay Saydham  Professor, Turkey

4:15PM
A Novel Nonlinear Dynamical System Control Using Linear Controllers with Nonlinearity Eliminators [IJCNN1225]
Yen-Ping Chen  National Cheng Kung Univ.
Jeen-Shing Wang  National Cheng Kung Univ.

4:35PM
Virtual Metrology Technique for Semiconductor Manufacturing [IJCNN1874]
Yaw-Jen  Chung Yuan Christian Univ.
Yuan Kang  Chung Yuan Christian Univ.
Chih-Liang Hsu  Chung Yuan Christian Univ.
Chi-Tim Chang  Chung Yuan Christian Univ.
Tat Yan Chan  Chung Yuan Christian Univ.

4:55PM
Hybrid EMG Recognition System by MDA and PCA [IJCNN1547]
Yuji Matsumura  Univ. of Tokushima
Minoru Fukumi  Univ. of Tokushima
Yasue Mitsuura  Tokyo Univ. of Agriculture & Tech.

3:55PM
Neuro Tracking Control for Immunotherapy Cancer Treatment [IJCNN2024]
Nadezhda Aguilar  Upibi-ipn
Agustin Cabrera  Upibi-ipn
Isaac Chairez  Upibi-ipn

4:15PM
A Gender Recognition System Using Shunting Inhibitory Convolutional Neural Networks [IJCNN1423]
Brijesh Verma  Central Queensland Univ.
Abdesselam Bouzerdoum  Univ. of Wollongong

4:35PM
A Neural Learning Algorithm for the Diagnosis of Breast Cancer [IJCNN1803]
Udo Seiffert  IPK Gatersleben

3:15PM
Hepatitis C Dynamics' Estimation Process by Differential Neural Networks, [IJCNN2026]
Ramon Miranda  Upibi-ipn
Nadezhda Aguilar  Upibi-ipn
Agustin Cabrera  Upibi-ipn
Isaac Chairez  Upibi-ipn

3:35PM
Identification of Low Back Injury from EMG Signals Using a Neural Network Model [IJCNN1744]
Yanfeng Hou  Univ. of Louisville
Jacek Zurada  Univ. of Louisville
Waldermar Karwowski  Univ. of Louisville
William Marras  Ohio State Univ.

3:55PM
Approximation of Conditional Preferences Networks “CP-nets” in Possibilistic Logic [FUZZ4431]
Didier Dubois  I.R.I.T.
Souhila Kaci  I.R.I.T.
Henri Prade  C.R.I.L.

4:15PM
Rough Sets Approximations to Possibilistic Information [FUZZ4381]
Michinori Nakata  Josai International Univ.
Hiroshi Sakai  Kyushu Inst. of Tech.

4:35PM
Rough Sets Approximations to Possibilistic Information [FUZZ4217]
Lei Wang  Xidian Univ.
Hongbing Ji  Xidian Univ.
Xinbo Gao  Xidian Univ.

4:15PM
Fuzzy Random Vector and Independence [FUZZ4048]
Xiang Li  Tsinghua Univ.
Baoding Liu  Tsinghua Univ.

Junior Ballroom D

FriPM-5
Machine Learning with Feedforward Neural Networks
Chairs: Jacek Zurada & Abdesselam Bouzerdoum

3:15PM
Hepatitis C Dynamics' Estimation Process by Differential Neural Networks, [IJCNN2026]
Ramon Miranda  Upibi-ipn
Nadezhda Aguilar  Upibi-ipn
Agustin Cabrera  Upibi-ipn
Isaac Chairez  Upibi-ipn

3:35PM
Fully Unsupervised Possibilistic Entropy Clustering [FUZZ4217]
Lei Wang  Xidian Univ.
Hongbing Ji  Xidian Univ.
Xinbo Gao  Xidian Univ.

3:55PM
Approximation of Conditional Preferences Networks “CP-nets” in Possibilistic Logic [FUZZ4431]
Didier Dubois  I.R.I.T.
Souhila Kaci  I.R.I.T.
Henri Prade  C.R.I.L.

3:35PM
Training of Large-scale Feed-forward Neural Networks [IJCNN1340]
Udo Seiffert  IPK Gatersleben

3:55PM
A Gender Recognition System Using Shunting Inhibitory Convolutional Neural Networks [IJCNN1423]
Brijesh Verma  Central Queensland Univ.
Abdesselam Bouzerdoum  Univ. of Wollongong

4:15PM
A Neural Learning Algorithm for the Diagnosis of Breast Cancer [IJCNN1803]
Udo Seiffert  IPK Gatersleben

4:35PM
A Neural Learning Algorithm for the Diagnosis of Breast Cancer [IJCNN1803]
Brijesh Verma  Central Queensland Univ.
Abdesselam Bouzerdoum  Univ. of Wollongong
### Pavilion Ballroom A

#### FriPM-7

**Fuzzy Control Applications**

Chair: Kazuo Tanaka

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
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<tbody>
<tr>
<td>4:35PM</td>
<td><em>A CAD Approach to Simplify Fuzzy System Descriptions</em> [FUZZ4328]</td>
<td>Iliuminada Baturone Instituto de Microelectronicad de Sevilla Francisco J. Moreno-Velo Univ. of Huelva Andres Gersnoviez Univ. of Huelva</td>
</tr>
</tbody>
</table>

#### FriPM-8

**Fuzzy Sets Applications**

Chair: Michael Margaliot

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:35PM</td>
<td><em>Concept of Edge-controlled Many-valued R-S Memory Circuit</em> [FUZZ4181]</td>
<td>Milan Petrik CTU Prague</td>
</tr>
</tbody>
</table>

### Pavilion Ballroom B

#### FriPM-9

**SS-Z5: Hardware Implementation for Genetic Neural & Fuzzy Systems II**

Chair: Nadia Nedjah

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:15PM</td>
<td><em>Evolving High-speed, Energy-efficient Integrated Circuits</em> [CEC7482]</td>
<td>Frank Sill Univ. of Rostock Ralf Salomon Univ. of Rostock</td>
</tr>
<tr>
<td>3:35PM</td>
<td><em>FPGA Implementation of Evolvable Block-based Neural Networks</em> [CEC7706]</td>
<td>Saumil Merchant Univ. of Tennessee Gregory Peterson Univ. of Tennessee Sang Ki Park Univ. of Tennessee Seong Kong Univ. of Tennessee</td>
</tr>
<tr>
<td>3:55PM</td>
<td><em>Graph Theoretical Representation of Grid-based ANN Architectures for VLSI Implementations</em> [CEC7625]</td>
<td>Stephan C. Stilkerich EADS Corporate Research Center</td>
</tr>
</tbody>
</table>

### Pavilion Ballroom C

#### FriPM-10

**Non-Uniform Search Domain Based Genetic Algorithm for the Optimization of Real-time FFT Processor Architectures** [CEC7629]

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
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<tbody>
<tr>
<td>3:55PM</td>
<td><em>Non-Uniform Search Domain Based Genetic Algorithm for the Optimization of Real-time FFT Processor Architectures</em> [CEC7629]</td>
<td>Nasri Sulaiman Univ. of Edinburgh Tughrul Arslan Univ. of Edinburgh</td>
</tr>
<tr>
<td>4:55PM</td>
<td><em>A Hardware Implementation Method of Multi-objective Genetic Algorithms</em> [CEC7643]</td>
<td>Nasri Sulaiman Univ. of Edinburgh Tughrul Arslan Univ. of Edinburgh</td>
</tr>
</tbody>
</table>
FriPM-10
Combinatorial & Numerical Optimization III
Chair: Kay Chen Tan

3:15PM
**Generalized Thermal Agents with Multiple Boundary Conditions and Three-dimensional Thermal Agents [CEC7323]**
Stephen Gent  Iowa State Univ.
Daniel Ashlock  Univ. of Guelph
Allan Willms  Univ. of Guelph
Kenneth Bryden  Iowa State Univ.

3:35PM
**An Enhanced Genetic Algorithm with Orthogonal Design [CEC7078]**
Xiaomin Hu  SUN yat-sen Univ.
Jun Zhang  SUN yat-sen Univ.
Jinghui Zhong  SUN yat-sen Univ.

3:55PM
**Multiobjective Evolutionary Approach to the Solution of Gas Lift Optimization Problems [CEC7147]**
Tapabrata Ray  ACME, UNSW,ADFA
Ruhul Sarker  ITEE, UNSW,ADFA

4:15PM
**Linear Ensemble Antennas Resulting from the Optimization of Log Periodic Dipole Arrays Using Genetic Algorithms [CEC7676]**
Timothy Pitzer  Air Force Inst. of Tech.
James Fellows  Air Force Inst. of Tech.
Lamont Gary  Air Force Inst. of Tech.
Terzuoli Andrew  Air Force Inst. of Tech.

4:35PM
**An Evolutionary Algorithm for the Product to Shelf Allocation Problem [CEC7334]**
Anna I. Esparcia-Alcazar  Instituto Tecnológico de Informática
Lidia Lluch-Revert  Instituto Tecnológico de Informática
Jose Miguel Albarracin-Guilleen  Univ. Politecnica de Valencia
Marta E Palmer-Gato  Univ. Politecnica de Valencia
Ken Sharman  Instituto Tecnológico de Informática

4:55PM
**An Immune-based Algorithm for Topology Optimization. [CEC7524]**
Felipe Campelo  Hokkaido Univ.
Frederico Guimaraes  Federal Univ. of Minas Gerais
Hajime Igarashi  Hokkaido Univ.
Kota Watanabe  Hokkaido Univ.
Jaime Ramirez  Federal Univ. of Minas Gerais

FriPM-11
Evolutionary Computation Applications
Chair: Ashutosh Tiwari

3:15PM
**Boolean Particle Swarm Optimization and Its Application to the Design of a Dual-band Dual-polarized Planar Antenna [CEC7547]**
Alireza Marandi  Univ. of Tehran
Farzaneh Afshinmanesh  Univ. of Tehran
Mahmoud Shahabadi  Univ. of Tehran
Fariba Bahrami  Univ. of Tehran

3:35PM
**A Novel Evolutionary Algorithm for Efficient Minimization of Expensive Black-box Functions with Assisted-Modelling [CEC7157]**
Yoel Tenne  PhD Student, Australia
S.W. Armfield  Prof., Australia

3:55PM
**Data Extrapolation Using Genetic Programming to Matrices Singular Values Estimation [CEC7169]**
Jose Aguilar  Univ. De Los Andes
Gilberto Gonzalez  Univ. De Los Andes

4:15PM
**A Novel 2D Genetic Algorithm for Band Gap Optimization of Two-Dimensional Photonic Crystals [CEC7536]**
Zahra Ghatan  Univ. of Tehran
Arya Fallahi  Univ. of Tehran
Behrooz Makki  Amir Kabir Univ. of Tehran (Polytechnique)
Mahmoud Shahabadi  Univ. of Tehran
Caro Lucas  Univ. of Tehran
Fariba Bahrami  Univ. of Tehran

4:35PM
**A Surveillance Spyware Detection System Based on Data Mining Methods [CEC7298]**
Tzu-Yen Wang  Taiwan Univ. of Sci. & Tech.
Shi-Jinn Horng  Taiwan Univ. of Sci. & Tech.
Ming-Yang Su  Ming Chuan Univ.
Chin-Hsiung Wu  Shih Chien Univ. Kaohsiung Campus
Peng-Chu Wang  Communications, Electronics & Info. Bure
Wei-Zen Su  Inst. for Information Industry

4:55PM
**A Genetic Algorithm Approach to Time Series Models with Thresholds in Two Domains [CEC7032]**
Ming Su  Oklahoma State Univ.
Gary Yen  Oklahoma State Univ.
### FriPM-12
**SS-Z8: Evolutionary Planning & Scheduling**  
Chair: Keshav Dahal  
3:15PM  
*A Hybrid Genetic Algorithm for Service Restoration Problems in Power Distribution Systems [CEC7214]*  
Isamu Watanabe  CRIEPI  
Ikuo Kurihara  CRIEPI  
Yoshiki Nakachi  Chubu Electric Power Co., Inc.  
4:15PM  
*Optimally Evolving Irregular-shaped Membership Functions for Fuzzy Systems [CEC7077]*  
Haoming Huang  Nanyang Technological Univ.  
Michel Pasquier  Nanyang Technological Univ.  
Chai Quek  Nanyang Technological Univ.  

### FriPM-13
**Evolutionary Planning, Scheduling & Control**  
Chair: Simon Lucas  
3:15PM  
*Evolving Neural Network Ensembles by Fitness Sharing [CEC7750]*  
Yong Liu  Univ. of Aizu  
3:35PM  
*ANNE - A New Algorithm for Evolution of Artificial Neural Network Classifier Systems [CEC7143]*  
Marco Castellani  Univ. Nova Lisboa  
4:15PM  
*Ensemble of Competitive Associative Nets and Multiple K-fold Cross-Validation for Estimating Predictive Uncertainty in Environmental Modeling [IJCNN2130]*  
Shuichi Kurogi  Kyushu Inst. of Tech.  
Daisuke Kuwahara  Kyushu Inst. of Tech.  
Shinya Tanaka  Kyushu Inst. of Tech.  

### FriPM-14
**SS-S5: Predictive Uncertainty in Environmental Modeling**  
Chair: Gavin Cawley  
3:15PM  
*A Variational EM Approach to Predicting Uncertainty in Supervised Learning [IJCNN1541]*  
Markus Harva  Helsinki Univ. of Tech.  
3:35PM  
*Predictive Uncertainty in Environmental Modeling [IJCNN1761]*  
Gavin Cawley  Univ. of East Anglia  
Malcolm Haylock  Univ. of East Anglia  
Stephen Dorling  Univ. of East Anglia  
3:55PM  
*Variance Stabilizing Regression Ensembles for Environmental Models [IJCNN1821]*  
Anthony Bagnall  Univ. of East Anglia  
Ian Whittley  Univ. of East Anglia  
Matthew Studley  Univ. of West of England  
Mike Pettipher  Univ. of Manchester  
Firt Tekiner  Univ. of Manchester  
4:15PM  
*Deterministic Models and Neural Nets: A Successful Methodology for the Air Dispersion Models [IJCNN2102]*  
Armando Pelliccioni  Ispesl  
Tiziano Tirabassi  Isac-Cnr  
Sabrina Bellantone  Ispesl  
Claudio Gariazzo  Ispesl
FriPM-15  
PANEL: A Practical Model for EC Market Introduction  
Chairs: Ali M.S. Zalzala & K. C. Tan

5:30PM-6:30PM  
Grand Ballroom AB

IJCNN Invited Talk, Friday

The Search for Principles of Autonomous Development  
Olaf Sporns  
Chair: Jun Wang

5:30PM-6:30PM  
Junior Ballroom

FUZZ-IEEE Invited Talk, Friday

Identification of Biomarkers and Designing of Diagnostic Systems for Cancer Subgroups from Gene Expression Profiles in a CI Framework  
Nikhil R. Pal  
Chair: Hisao Ishibuchi

5:30PM-6:30PM  
Pavilion Ballroom

CEC Invited Talk, Friday

Twenty Years of Evolutionary Multi-Objective Optimization: What has been Done and What Remains to be Done?  
Carlos Coello Coello  
Chair: Byoung-Tak Zhang