

ICANN 2009 - Preliminary Program

Sunday, Sep 13

7:30 PM - 9:30 PM

Opening Reception at the Conference Hotel

Monday, Sep 14

8:30 AM - 9:30 AM

KEYNOTE PLENARY

"Probabilistic Algorithms for Predicting Genes from Genomes", M. Vidyasagar, (University of Texas at Dallas, USA)

Room: Grand Hall A

Chair: Marios Polycarpou (University of Cyprus, Cyprus)

9:30 AM - 9:50 AM

COFFEE BREAK

9:50 AM - 11:30 AM

Learning algorithms I

Room: Grand Hall A

Chair: Luís Alexandre (Univ. of Beira Interior, Portugal)

Mutual Information Based Initialization of Forward-Backward Search for Feature Selection in Regression Problems

Alberto Guillén (University of Jaén, Spain); Antti Sorjamaa (Helsinki University of Technology, Finland); Gines Rubio (University of Granada, Spain); Amaury Lendasse (Helsinki University of Technology, Finland); Ignacio Rojas (University of Granada, Spain)

Kernel Learning for Local Learning Based Clustering

Hong Zeng (Hong Kong Baptist University, Hong Kong); Yiu-ming Cheung (Hong Kong Baptist University, Hong Kong)

Projective Nonnegative Matrix Factorization with alpha-Divergence

Zhirong Yang (Helsinki University of Technology, Finland); Erkki Oja (Helsinki University of Technology, Finland)

Active Generation of Training Examples in Meta-Regression

Ricardo Prudencio (Federal University of Pernambuco, Brazil); Teresa Ludermir (Federal University of Pernambuco, Brazil)

A Maximum-likelihood connectionist model for unsupervised learning over graphical domains

Edmondo Trentin (University of Siena, Italy); Leonardo Rigutini (University of Siena, Italy)

Computational neuroscience I

Room: Grand Hall B

Chair: Alessandro E. P. Villa (Neuroheuristic, France)

Synchrony State Generation in Artificial Neural Networks with Stochastic Synapses

Karim El-Laithy (Research assistant, Germany); Martin Bogdan (Universität Leipzig, Germany)

Learning Complex Population-Coded Sequences

Kiran Byadarhaly (University of Cincinnati, USA); Mithun Perdoor (University of Cincinnati, USA);

Suresh Vasa (University of Cincinnati, USA); Emmanuel Fernandez (University of Cincinnati, USA); Ali Minai (University of Cincinnati, USA)

Controlled and automatic processing in animals and machines with application to autonomous vehicle control

Kevin Gurney (University of Sheffield, United Kingdom); Amir Hussain (University of Stirling, United Kingdom); Jonathan Chambers (University of Sheffield, United Kingdom); Rudwan Abdullah (University of Stirling, United Kingdom)

Multiple Sound Source Localisation in Reverberant Environments Inspired by the Auditory Midbrain

Jindong Liu (University of Sunderland, United Kingdom); David Perez-Gonzalez (Newcastle University, United Kingdom); Adrian Rees (Newcastle University, United Kingdom); Harry Erwin (University of Sunderland, United Kingdom); Stefan Wermter (University of Sunderland, United Kingdom)

A model of neuronal specialization using Hebbian policy gradient with slow noise

Emmanuel Daucé (INRIA, France)

Hardware implementations and embedded systems I

Room: Grand Hall C

Chair: Giacomo Indiveri (University of Zurich - ETH Zurich)

Area Chip Consumption by a Novel Digital CNN Architecture for Pattern Recognition

Emil Raschman (Slovak University of Technology, Slovakia); Daniela Durackova (Slovak University of Technology, Slovakia)

Multifold Acceleration of Neural Network Computations Using GPU

Alexander Guzhva (D.V. Skobeltsyn Institute of Nuclear Physics, M.V.Lomonosov State University, Russia); Sergey Dolenko (D.V. Skobeltsyn Nuclear Physics Institute, M.V.Lomonosov Moscow State University, Russia); Igor Persiantsev (D.V. Skobeltsyn Institute of Nuclear Physics, M.V.Lomonosov State University, Russia)

Training Recurrent Neural Network Using Multistream Extended Kalman Filter on Multicore Processor and Cuda Enabled Graphic Processor Unit

Michal Čerňanský (Slovak University of Technology, Slovakia)

A Non-Subtraction Configuration of Self-Similitude Architecture for Multiple-Resolution Edge-Filtering CMOS Image Sensor

Norihiro Takahashi (The University of Tokyo, Japan); Tadashi Shibata (The University of Tokyo, Japan)

Current-mode Computation with Noise in a Scalable and Programmable Probabilistic Neural VLSI System

Chih-Cheng Lu (National Tsing Hua University, Taiwan); H. Chen (National Tsing Hua University, Taiwan)

Self organization I

Room: Hall Evagoras

Chair: Hujun Yin (The University of Manchester, United Kingdom)

A Two Stage Clustering Method Combining Self-Organizing Maps and Ant K-means

Jefferson Souza (Federal University of Pernambuco, Brazil); Teresa Ludermitz (Federal University of Pernambuco, Brazil); Leandro Almeida (Federal University of Pernambuco, Brazil)

Image Theft Detection with Self-Organizing Maps

Philip Prentis (Czech Technical University in Prague, Czech Republic); Mats Sjöberg (Helsinki University of Technology (TKK), Finland); Markus Koskela (Helsinki University of Technology, Finland); Jorma Laaksonen (HUT, Finland)

Improved Kohonen Feature Map Associative Memory with Area Representation for Sequential Analog Patterns

Tomonori Shirotori (Tokyo University of Technology, Japan); Yuko Osana (Tokyo University of Technology, Japan)

Surface Reconstruction Method Based on a Growing Self-organizing Map

Renata do Rêgo (Center of Informatics at Federal University of Pernambuco, Recife/ Brazil, Brazil); Hansenclever Bassani (Federal University of Pernambuco, Brazil); Daniel Gomes (Center of Informatics at Federal University of Pernambuco, Recife/Brazi, Brazil); Aluizio Araujo (Center of Informatics at Federal University of Pernambuco, Recife/Brazi, Brazil)

Micro-SOM: A Linear-Time Multivariate Microaggregation Algorithm based on Self-Organizing Maps

Agusti Solanas (Rovira i Virgili University, Spain); Arnau Gavalda (Rovira i Virgili University, Spain); Robert Rallo (Rovira i Virgili University, Spain)

Intelligent control and adaptive systems

Room: Hall Tefkros

Chair: Koji Ito (Tokyo Institute of Technology, Japan)

Height Defuzzification Method on L-infinity Space

Takashi Mitsuishi (University of Marketing and Distribution Sciences, Japan); Yasunari Shidama (Shinshu University, Japan)

An Additive Reinforcement Learning

Takeshi Mori (Kyoto University, Japan); Shin Ishii (Nara Institute of Science and Technology, Japan)

Neural Spike Suppression by Adaptive Control of an Unknown Steady State

Arunas Tamasevicius (Semiconductor Physics Institute, Lithuania); Elena Tamaseviciute (Vilnius University, Lithuania); Gytis Mykolaitis (Semiconductor Physics Institute, Lithuania); Skaidra Bumeliene (Semiconductor Physics Institute, Lithuania); Raimundas Kirvaitis (Vilnius Gediminas Technical University, Lithuania); Ruedi Stoop (ETH Zürich, Switzerland)

Combined mechanisms of internal model control and impedance control under force fields

Naoki Tomi (Tokyo Institute of Technology, Japan); Manabu Gouko (Tokyo Institute of Technology, Japan); Koji Ito (Tokyo Institute of Technology, Japan)

Neural Network Control of Unknown Nonlinear Systems with Efficient Transient Performance

Elias Kosmatopoulos (Technical University of Crete, Greece); Diamantis Manolis (Technical University of Crete, Greece); M. Papageorgiou (Technical University of Crete, Greece)

11:45 AM - 12:45 PM

KEYNOTE PLENARY

"Modelling Cortical Representations", Klaus Obermayer (Berlin University of Technology, Germany)

Room: Grand Hall A

Chair: Cesare Alippi (Politecnico di Milano, Italy)

12:45 PM - 2:10 PM

LUNCH

2:10 PM - 3:50 PM

Neural and hybrid architectures I

Room: Grand Hall A

Chair: Gábor Horváth (Budapest University of Technology and Economics, Hungary)

A Guide for the Upper Bound on the Number of Continuous-valued Hidden Nodes of a Feed-forward Network

Rua Huan Tsaih (National Chengchi University, Taiwan); Yat-wah Wan (National DongHwa University, Taiwan)

Comparative Study of the CG and HBF ODEs Used in the Global Minimization of Nonconvex Functions

Amit Bhaya (Federal University of Rio de Janeiro, Brazil); Fernando Pazos (Federal University of Rio de Janeiro, Brazil); Eugenius Kaszkurewicz (Federal University of Rio de Janeiro, Brazil)

On the Knowledge Organization in Concept Formation: An Exploratory Cognitive Modeling Study

Toshihiko Matsuka (Chiba University, Japan); Hidehito Honda (Chiba University, Japan); Arieta Chouchourelou (European University Cyprus, Cyprus); Sachiko Kiyokawa (Chubu University, Japan)

Dynamics of Incremental learning by VSF-Network

Yoshitsugu Kakemoto (The JSOL, Ltd, Japan); Shinchi Nakasuka (The University of Tokyo, Japan)

Kernel CMAC with reduced memory complexity

Gábor Horváth (Budapest University of Technology and Economics, Hungary); Kristof Gáti (Budapest University of Technology and Economics, Hungary)

Support Vector Machine I

Room: Grand Hall B

Chair: Aristidis Likas (University of Ioannina, Greece)

Is Primal Better Than Dual

Shigeo Abe (Kobe University, Japan)

A Fast BMU Search for Support Vector Machine

Wataru Kasai (Tokyo Institute of Technology, Japan); Yutaro Tobe (Tokyo Institute of Technology, Japan); Osamu Hasegawa (Imaging Science and Engineering Lab., Tokyo Institute of Technology, Japan)

European Option Pricing by Using the Support Vector Regression Approach

Panayiotis Andreou (Durham University, United Kingdom); Chris Charalambous (University of Cyprus, Cyprus); Spiros Martzoukos (University of Cyprus, Cyprus)

Learning SVMs from Sloppily Labeled Data

Guillaume Stempfel (Aix-Marseille Université, France); Liva Ralaivola (LIF, Aix-Marseille Universités, France)

A Simple Proof of the Convergence of the SMO Algorithm for Linearly Separable Problems

Jorge Lopez (Universidad Autonoma de Madrid, Spain); Jose Dorronsoro (Universidad Autónoma de Madrid, Spain)

Recurrent Neural Network

Room: Grand Hall C

Chair: Marco Maggini (University of Siena, Italy)

Understanding the Principles of Recursive Neural Networks: A Generative Approach to Tackle Model Complexity

Alejandro Chinea Manrique de Lara (Universidad Nacional de Educación a Distancia (UNED), Spain)

An EM based training algorithm for recurrent neural networks

Jan Unkelbach (IDSIA, Switzerland); Sun Yi (IDSIA, Switzerland); Juergen Schmidhuber (IDSIA, Switzerland)

Modeling Dst with Recurrent EM Neural Networks

Derrick Mirikitani (Goldsmiths College, University of London, United Kingdom); Lahcen Ouarbya (Goldsmiths College, University of London, United Kingdom)

On the quantification of dynamics in Reservoir Computing

David Verstraeten (Ghent University, Belgium); Benjamin Schrauwen (Ghent University, Belgium)

Solving the CLM Problem by Discrete-time Linear Threshold Recurrent Neural Networks

Lei Zhang (The Chinese University of Hong Kong, Hong Kong); Pheng Ann Heng (The Chinese University of Hong Kong, Hong Kong); Zhang Yi (Sichuan University, P.R. China)

Neuroinformatics and bioinformatics

Room: Hall Evagoras

Chair: Nikola Kasabov (Auckland University of Technology, New Zealand)

Epileptic Seizure Prediction and The Dimensionality Reduction Problem

Andre Ventura (University of Coimbra, Portugal); Joao Franco (University of Coimbra, Portugal); Joao Ramos (University of Coimbra, Portugal); Direito Bruno (University of Coimbra, Portugal); Antonio Dourado (University of Coimbra, Portugal)

Discovering Diagnostic Gene Targets and Early Diagnosis of Acute GVHD Using Methods of Computational Intelligence over Gene Expression Data

Maurizio Fiasché (University "Mediterranea" of Reggio Calabria, Italy); Anju Verma (Auckland University of Technology, New Zealand); Maria Cuzzola (Hospital "Bianchi-Melacrino-Morelli", Reggio Calabria, Italy); Pasquale Iacopino (Hospital "Bianchi-Melacrino-Morelli", Reggio Calabria, Italy); Nikola Kasabov (Auckland University of Technology, New Zealand); Francesco Morabito (University Mediterranea of Reggio Calabria, Italy)

Mining rules for the automatic selection process of clustering methods applied to cancer gene expression data

André Nascimento (Federal University of Pernambuco, Brazil); Ricardo Prudencio (Federal University of Pernambuco, Brazil); Marcílio de Souto (Federal University of Rio Grande do Norte, Brazil); Ivan Costa (Federal University of Pernambuco, Brazil)

A computational retina model and its self-adjustment property

Hui Wei (Department of Computer Science, Fudan University, P.R. China); Xudong Guan (Department of Computer Science, Fudan University, P.R. China)

Lattice Independent Component Analysis for fMRI analysis

Manuel Graña Romay (Universidad del Pais Vasco, Spain); Maite Garcia-Sebastian (Universidad del Pais Vasco, Spain); Carmen Hernandez (Universidad del Pais Vasco, Spain)

Special Session: Cognitive Machines

Room: Hall Tefkros

Chair: John Taylor (King's College London, United Kingdom)

Mental Simulation, Attention and Creativity

John Taylor (King's College London, United Kingdom); Matthew Hartley (King's College London, United Kingdom)

BSDT Atom of Consciousness Model, AOCM: The Unity and Modularity of Consciousness

Petro Gopych (Universal Power Systems USA-Ukraine LLC, Ukraine)

Generalized Simulated Annealing and Memory Functioning in Psychopathology

Roseli Wedemann (Universidade do Estado do Rio de Janeiro, Brazil); Luís Alfredo Carvalho (Universidade Federal do Rio de Janeiro, Brazil); Raul Donangelo (Universidade Federal do Rio de Janeiro, Brazil)

Algorithms for structural and dynamical polychronous groups detection

Régis Martinez (LIRIS - Université de Lyon, France); Hélène Paugam-Moisy (Université de Lyon, France)

Logics and Networks for Human Reasoning

Steffen Hölldobler (TU Dresden, Germany); Carroline Dewi Puspa Kencana Ramli (TU Dresden, Germany)

2:10 PM - 4:10 PM

Poster Session I

Room: Corridor

Chair: Christos Panayiotou (University of Cyprus, Cyprus)

Mutual learning with many linear perceptrons; On-line Learning Theory

Kazuyuki Hara (Tokyo Metropolitan College of Industrial Technology, Japan); Yoichi Nakayama (Tokyo Metropolitan College of Technology, Japan); Seiji Miyoshi (Faculty of Engineering Science, Kansai University, Japan); Masato Okada (Graduate School of Frontier Sciences, Japan)

Combining Feature Selection and Local Modelling in the KDD Cup 99 Dataset

Iago Porto-Díaz (Universidade Da Coruña, Spain); David Martínez-Rego (Universidade Da Coruña, Spain); Amparo Alonso-Betanzos (Universidade Da Coruña, Spain); Óscar Fontenla-Romero (Universidade Da Coruña, Spain)

An automatic parameter adjustment method of Pulse Coupled Neural Network for image segmentation

Masato Yonekawa (Tokyo University of Technology, Japan); Hiroaki Kurokawa (School of Computer Science Tokyo University of Technology, Japan)

Pattern Identification by Committee of Potts Perceptrons

Vladimir Krizhanovsky (Center of Optical Neural Technologies of SRISA RAS, Russia)

Information processing and time inversion in vision

Andrea Guazzini (Institute of Informatics and Telematics, Italy); Pietro Lio` (University of Cambridge, United Kingdom); Andrea Passarella (Institute of Informatics and Telematics, Italy); Marco Conti (Institute of Informatics and Telematics, Italy)

Review of Neuron Types in the Retina: Information Models for Neuroengineering

German Valderrama-Gonzalez (University of Ulster, United Kingdom); Martin McGinnity (University of Ulster, United Kingdom); Liam Maguire (University of Ulster, United Kingdom); QingXiang Wu (University of Ulster, United Kingdom)

Microstate Segmentation of Non-Musician Brain in Simultaneously Audio-Visual Perception

Wichian Sittiprapaporn (Mahidol University College of Music, Thailand); Jun Soo Kwon (Seoul National University College of Medicine, Korea)

A Model for Neuronal Signal Representation by Stimulus-Dependent Receptive Fields

Jose Toreao (Universidade Federal Fluminense, Brazil); Joao Fernandes (Universidade Federal Fluminense, Brazil); Silvia Victor (Universidade Federal Fluminense, Brazil)

High-Order Fuzzy Switching Neural Networks: Application to the Tracking Control of a Class of Uncertain SISO Nonlinear Systems

Haris Psillakis (Technical University of Crete, Greece)

Tracking with Multiple Prediction Models

Chen Zhang (Darmstadt University of Technology, Germany); Julian Eggert (Honda Research Institute Europe, Germany)

Sliding Mode Control for Trajectory Tracking Problem - Performance Evaluation

Razvan Solea (University "Dunarea de Jos" of Galati, Romania); Daniela Cernega ("Dunarea de Jos" University of Galati, Romania)

A New FG MOST Euclidean Distance Computational Circuit Based on Algebraic Mean of the Input Potentials

Cosmin Popa (Upb, Romania)

FPGA Implementation of Support Vector Machines for 3D Object Identification

Marta Ruiz-Llata (Universidad Carlos III de Madrid, Spain); Mar Yebenes-Calvino (Universidad Carlos III de Madrid, Spain)

Reconfigurable MAC-based Architecture for Parallel Hardware Implementation on FPGAs of Artificial Neural Networks Using Fractional Fixed Point Representation

Nadia Nedjah (State University of Rio de Janeiro, Brazil); Rodrigo Martins da Silva (State University of Rio de Janeiro, Brazil); Luiza de Macedo Mourelle (State University of Rio de Janeiro, Brazil)

3:50 PM - 4:10 PM

COFFEE BREAK

4:10 PM - 5:50 PM

Data analysis and pattern recognition I

Room: Grand Hall A

Chair: Michel Verleysen (Université Catholique de Louvain, Belgium)

Simbed: similarity-based embedding

John Lee (Université catholique de Louvain, Belgium); Michel Verleysen (Université Catholique de Louvain, Belgium)

PCA-based Representations of Graphs for Prediction in QSAR Studies

Riccardo Cardin (Engineering Ingegneria Informatica, Italy); Lisa Michielan (University of Padova, Italy); Stefano Moro (University of Padova, Italy); Alessandro Sperduti (Università degli Studi di Padova, Italy)

Convex Mixture Models for Multi-view Clustering

Grigorios Tzortzis (University of Ioannina, Greece); Aristidis Likas (University of Ioannina, Greece)

Classification Based on Combination of Kernel Density Estimators

Mateusz Kobos (Warsaw University of Technology, Poland); Jacek Mańdziuk (Warsaw University of Technology, Poland)

Joint approximate diagonalization utilizing AIC-based decision in the Jacobi method.

Yoshitatsu Matsuda (Aoyama Gakuin University, Japan); Kazunori Yamaguchi (the University of Tokyo, Japan)

Signal and time series processing I

Room: Grand Hall B

Chair: Andreas Spanias (ASU, USA)

Multi-Stage Algorithm Based on Neural Network Committee for Prediction and Search for Precursors in Multi-dimensional Time Series

Sergey Dolenko (D.V.Skobel'syn Nuclear Physics Institute, M.V.Lomonosov Moscow State University, Russia); Alexander Guzhva (D.V. Skobel'syn Institute of Nuclear Physics, M.V.Lomonosov State University, Russia); Igor Persiantsev (D.V. Skobel'syn Institute of Nuclear Physics, M.V.Lomonosov State University, Russia); Julia Shugai (D.V.Skobel'syn Nuclear Physics Institute, M.V.Lomonosov Moscow State University, Russia)

Adaptive Ensemble Models of Extreme Learning Machines for Time Series Prediction

Mark van Heeswijk (Helsinki University of Technology, Finland); Yoan Miche (Helsinki University of Technology, Finland); Tiina Lindh-Knuutila (Helsinki University of Technology, Finland); Peter Hilbers (Eindhoven University of Technology, The Netherlands); Timo Honkela (Helsinki University of Technology, Finland); Erkki Oja (Helsinki University of Technology, Finland); Amaury Lendasse (Helsinki University of Technology, Finland)

Identifying Customer Profiles in Power Load Time Series Using Spectral Clustering

Carlos Alzate (Katholieke Universiteit Leuven, Belgium); Johan Suykens (KULeuven, Belgium)

Transformation from complex networks to time series using classical multidimensional scaling

Yuta Haraguchi (Saitama University, Japan); Yutaka Shimada (Saitama University, Japan); Tohru Ikeguchi (Saitama University and ERATO, JST, Japan); Kazuyuki Aihara (University of Tokyo and ERATO, JST, Japan)

Predicting the Occupancy of the HF Amateur Service with Neural Network Ensembles

Harris Papadopoulos (Frederick University of Cyprus, Cyprus); Haris Haralambous (Frederick University, Cyprus)

Applications I

Room: Grand Hall C

Chair: Marley Vellasco (Pontificia Universidade Católica do Rio de Janeiro, Brazil)

Noiseless Independent Factor Analysis with mixing constraints in a semi-supervised framework. Application to railway device fault diagnosis

Etienne Côme (The French National Institute for Transport and Safety Research (INRETS), France); Latifa Oukhellou (The French National Institute for Transport and Safety Research (INRETS), France); Thierry Denoeux (Compiègne University of Technology, France); Patrice Aknin (Institut National de Recherche sur les Transports et leur Sécurité (INRETS), France)

Speech Hashing Algorithm Based on Short-time Stability

Ning Chen (Shanghai University, P.R. China); Wan Gen (Shanghai University, P.R. China)

A new method for complexity reduction of neuro-fuzzy systems with application to differential stroke diagnosis

Krzysztof Cpalka (Czestochowa University of Technology, Poland); Olga Rebrova (Russian Academy of Medical Sciences, Russia); Leszek Rutkowski (Czestochowa University of Technology, Poland)

LS Footwear Database - Evaluating Automated Footwear Pattern Analysis

Maria Pavlou (University of Sheffield, United Kingdom); Nigel Allinson (University of Sheffield, United Kingdom)

Advanced Integration of Neural Networks for Characterizing Voids in Welded Strips

Matteo Cacciola (University Mediterranea of Reggio Calabria, Italy); Salvatore Calcagno (University Mediterranea of Reggio Calabria, Italy); Filippo Laganà (University Mediterranea of Reggio Calabria, Italy); Giuseppe Megali (University Mediterranea of Reggio Calabria, Italy); Diego Pellicanò (University Mediterranea of Reggio Calabria, Italy); Mario Versaci (University Mediterranea of Reggio Calabria, Italy); Francesco Morabito (University Mediterranea of Reggio Calabria, Italy)

Neural dynamics and complex systems I

Room: Hall Evagoras

Chair: Jun Wang (The Chinese University of Hong Kong, Hong Kong)

Computing with Probabilistic Cellular Automata

Martin Schuele (ETH Zurich, Switzerland); Thomas Ott (ZHAW Zurich, Switzerland); Ruedi Stoop (ETH Zürich, Switzerland)

Delay-Induced Hopf Bifurcation and Periodic Solution in a BAM Network with Two Delays

Jian Xu (Tongji University, P.R. China)
Kwok Wai Chung (University of Hong Kong, Hong Kong)
Ju Hong Ge (Tongji University, P.R. China)
Yu Huang (Tongji University, P.R. China)

Response Properties to Inputs of Memory Pattern Fragments in Three Types of Chaotic Neural Network Models

Toshiyuki Hamada (University of Fukui, Japan); Jousuke Kuroiwa (University of Fukui, Japan); Hisakazu Ogura (University of Fukui, Japan); Tomohiro Odaka (University of Fukui, Japan); Haruhiko Shirai (University of Fukui, Japan); Yuko Kato (University of Fukui, Japan)

Partial Differential Equations Numerical Modeling Using Dynamic Neural Networks

Rita Fuentes (CINVESTAV- National Polytechnic Institute, Mexico); Alexander Poznyak (Université de Mexic, Mexico); Isaac Chairez (UPIBI-National Polytechnic Institute, Mexico); Tatyana Poznyak (ESIQIE-National Polytechnic Institute, Mexico)

The Lin-Kernighan Algorithm Driven by Chaotic Neurodynamics for Large Scale Traveling Salesman Problems

Shun Motohashi (Saitama University, Japan); Takafumi Matsuura (Saitama University, Japan); Tohru Ikeguchi (Saitama University and ERATO, JST, Japan); Kazuyuki Aihara (University of Tokyo and ERATO, JST, Japan)

Tutorial I

"Neurodynamical Models of Individual and Group Ideation", Ali Minai (University of Cincinnati, USA)

Room: Hall Tefkros

Tuesday, Sep 15

8:30 AM - 9:30 AM

KEYNOTE PLENARY

"Embodied Swarm Intelligence: The Swarm-bot and the Swarmanoid Experiments", Marco Dorigo (IRIDIA, Université Libre de Bruxelles, Belgium)

Room: Grand Hall A
Chair: Christos Panayiotou (University of Cyprus, Cyprus)

9:30 AM - 9:50 AM

COFFEE BREAK

9:50 AM - 11:30 AM

Learning algorithms II

Room: Grand Hall A
Chair: Edmondo Trentin (University of Siena, Italy)

Local Feature Selection for the Relevance Vector Machine using Adaptive Kernel Learning

Dimitris Tzikas (University of Ioannina, Greece); Aristidis Likas (University of Ioannina, Greece); Nikolaos Galatsanos (University of Patras, Greece)

MINLIP: Efficient Learning of Transformation Models

Vanya Van Belle (Katholieke Universiteit Leuven, ESAT-SCD, Belgium); Kristiaan Pelckmans (Leuven University, Belgium); Johan Suykens (KULeuven, Belgium); Sabine Van Huffel (Katholieke Universiteit Leuven, Belgium)

Efficient Uncertainty Propagation for Reinforcement Learning with Limited Data

Alexander Hans (Ilmenau Technical University, Neuroinformatics & Cognitive Robotics Lab, Germany); Steffen Udluft (Siemens AG, Corporate Technology, Germany)

Optimal training sequences for locally recurrent neural networks

Krzysztof Patan (University of Zielona Gora, Poland); Maciej Patan (University of Zielona Gora, Poland)

Statistical Instance-based Ensemble Pruning for Multi-class Problems

Gonzalo Martinez-Muñoz (Oregon State University, USA); Daniel Hernandez-Lobato (Universidad Autónoma de Madrid, Spain); Alberto Suarez (Universidad Autónoma de Madrid, Spain)

Data analysis and pattern recognition II

Room: Grand Hall B
Chair: Alessandro Sperduti (Università degli Studi di Padova, Italy)

Newtonian Spectral Clustering

Konstantinos Blekas (University of Ioannina, Greece); K. Christodoulidou (University of Ioannina, Greece); I. E. Lagaris (University of Ioannina, Greece)

Bidirectional Clustering of MLP Weights for Finding Nominally Conditioned Polynomials

Ryohei Nakano (Chubu University, Japan); Yusuke Tanahashi (Nagoya Institute of Technology, Japan)

Recognition of Properties by Probabilistic Neural Networks

Jiri Grim (Institute of Information Theory and Automation, Czech Republic); Jan Hora (Faculty of Nuclear Science and Physical Engineering, Czech Republic)

On the Use of the Adjusted Rand Index as a Metric for Evaluating Supervised Classification

Jorge Santos (ISEP - Instituto Superior de Engenharia do Porto, Portugal); Mark Embrechts (Rensselaer Polytechnic Institute, USA)

Profiling of mass spectrometry data for ovarian cancer detection using negative correlation learning

Shan He (The University of Birmingham, United Kingdom); Huanhuan Chen (The University of Birmingham, United Kingdom); Xiaoli Li (The University of Birmingham, United Kingdom); Xin Yao (University of Birmingham, United Kingdom)

Hardware implementations and embedded systems II

Room: Grand Hall C
Chair: Bruno Apolloni (University of Milan, Italy)

Minimising Contrastive Divergence with Dynamic Current Mirrors

Chih-Cheng Lu (National Tsing Hua University, Taiwan); H. Chen (National Tsing Hua University, Taiwan)

Spiking Neural Network Self-Configuration for Temporal Pattern Recognition Analysis

Josep Rossello (Universitat de les Illes Balears, Spain); Ivan De Paul (Universitat de les Illes Balears, Spain); Vincent Canals (Universitat de les Illes Balears, Spain); Antoni Morro (Universitat de les Illes Balears, Spain)

Image Recognition in Analog VLSI with On-Chip Learning

Miguel Figueroa (Universidad de Concepcion, Chile); Gonzalo Carvajal (University of Concepcion, Chile); Waldo Valenzuela (University of Concepcion, Chile)

Behavior Modeling by Neural Networks

Lambert Spaanenbun (Lund University, Sweden); Mona Tehrani (Lund University, Sweden); Richard Kleihorst (VITO, Belgium, Belgium); Peter Meijer (NXP Semiconductors, The Netherlands)

Statistical parameter identification of analog integrated circuit reverse models

Bruno Apolloni (University of Milan, Italy, Italy); Simone Bassis (University of Milan, Italy, Italy); Cristian Mesiano (University of Milan, Italy, Italy); Salvatore Rinaudo (ST Microelectronics, Italy); Angelo Ciccazzo (ST Microelectronics, Italy); Angelo Marotta (ST Microelectronics, Italy)

Self organization II

Room: Hall Evagoras

Chair: Manuel Roveri (Politecnico di Milano, Italy)

Identifying Clusters using Growing Neural Gas: First Results

Riccardo Rizzo (ICAR-CNR, Italy); Alfonso Urso (ICAR - CNR, Italy)

Hierarchical Architecture with Modular Network SOM and Modular Reinforcement Learning

Masumi Ishikawa (Kyushu Institute of Technology, Japan); Kosuke Ueno (Kyushu Institute of Technology, Japan)

Hybrid Systems for River Flood Forecasting using MLP, SOM and Fuzzy Systems

Ivna Valença (Federal University of Pernambuco, Brazil); Teresa Ludermir (Federal University of Pernambuco, Brazil)

Topographic Mapping of Astronomical Light Curves via a Physically Inspired Probabilistic Model

Nikolaos Gianniotis (University of Heidelberg, Germany); Peter Tino (The University of Birmingham, United Kingdom); Steven Spreckley (University of Birmingham, United Kingdom); Somak Raychaudhury (The University of Birmingham, United Kingdom)

Generalized Self-Organizing Mixture Autoregressive Model for Modeling Financial Time Series

Hujun Yin (The University of Manchester, United Kingdom); He Ni (Zhejiang Gongshang University, P.R. China)

Neural dynamics and complex systems II

Room: Hall Tefkros

Chair: Wlodek Duch (Nicolaus Copernicus University, Poland)

Quadratic Assignment Problems for Chaotic Neural Networks with Dynamical Noise

Takayuki Suzuki (Saitama University, Japan); Shun Motohashi (Saitama University, Japan); Takafumi Matsuura (Saitama University, Japan); Tohru Ikeguchi (Saitama University and ERATO, JST, Japan); Kazuyuki Aihara (University of Tokyo and ERATO, JST, Japan)

Global Exponential Stability of Recurrent Neural Networks with Time-dependent Switching Dynamics

Zhigang Zeng (Huazhong University of Science and Technology, P.R. China); Jun Wang (The Chinese University of Hong Kong, Hong Kong); Tingwen Huang (Texas A&M University at Qatar, Qatar)

Approximation Capability of Continuous Time Recurrent Neural Networks for Non-autonomous Dynamical Systems

Yuichi Nakamura (Nagaoka University of Technology, Japan); Masahiro Nakagawa (Nagaoka

University of Technology, Japan)

Spectra of the Spike Flow Graphs of Recurrent Neural Networks

Filip Piekiewicz (Nicolaus Copernicus University, Poland)

Activation Dynamics in Excitable Maps: Limits to Communication Can Facilitate the Spread of Activity

Andreas Loengarov (University of the West of Scotland, United Kingdom); Valery Tereshko (University of the West of Scotland, United Kingdom)

11:45 AM - 12:45 PM

ENNS: ENNS Plenary Meeting

Room: Grand Hall A

12:45 PM - 2:10 PM

LUNCH

2:10 PM - 3:50 PM

Neural and hybrid architectures II

Room: Grand Hall A

Chair: Vera Kurkova (Academy of Sciences of the Czech Republic, Czech Republic)

Model Complexity of Neural Networks and Integral Transforms

Vera Kurkova (Academy of Sciences of the Czech Republic, Czech Republic)

Function Decomposition Network

Yevgeniy Bodyanskiy (Kharkiv National University of Radio Electronics, Ukraine); Sergiy Popov (Kharkiv National University of Radio Electronics, Ukraine); Mykola Titov (Khartep Ltd., Ukraine)

Improved storage capacity in correlation matrix memories storing fixed weight codes

Stephen Hobson (University of York, United Kingdom); Jim Austin (University of York, UK, United Kingdom)

Multiagent Reinforcement Learning with Spiking and Non-Spiking Agents in the Iterated Prisoner's Dilemma

Vassilis Vassiliades (University of Cyprus, Cyprus); Aristodemos Cleanthous (University of Cyprus, Cyprus); Chris Christodoulou (University of Cyprus, Cyprus)

Unsupervised Learning in Reservoir Computing: Modeling Hippocampal Place Cells for Small Mobile Robots

Eric Antonelo (Ghent University, Belgium); Benjamin Schrauwen (Ghent University, Belgium)

Support Vector Machine II

Room: Grand Hall B

Chair: Vladimir Cherkassky (University of Minnesota, USA)

The GMM-SVM Supervector Approach for the Recognition of the Emotional Status from Speech

Friedhelm Schwenker (University of Ulm, Germany), Stefan Scherer (University of Ulm, Germany), Guenther Palm (University of Ulm, Germany), Yasmine M. Magdi (German University in Cairo, Egypt)

Spanning SVM Tree for Personalized Transductive Learning

Paul Pang (Auckland university of Technology, New Zealand); Tao Ban (National Institute of Information and Communications Technology, Japan); Youki Kadobayashi (Nara Institute of Science and Technology, Japan); Nikola Kasabov (Auckland University of Technology, New Zealand)

Improving Text Classification Performance with Incremental Background Knowledge

Catarina Silva (University of Coimbra, Portugal); Bernardete Ribeiro (University of Coimbra, Portugal)

Empirical Study of the Universum SVM Learning for High-Dimensional Data

Vladimir Cherkassky (University of Minnesota, USA); Wuyang Dai (University of Minnesota, USA)

Relevance Feedback for Content-Based Image Retrieval Using Support Vector Machines and Feature Selection

Apostolos Marakakis (National Technical University of Athens, Greece); Nikolaos Galatsanos (University of Patras, Greece); Aristidis Likas (University of Ioannina, Greece); Andreas Stafylopatis (National Technical University of Athens, Greece)

Vision and image processing I

Room: Grand Hall C

Chair: Anastasios D. Doulamis (National Technical University of Athens, Greece)

Learning features by contrasting natural images with noise

Michael Gutmann (University of Helsinki, Finland); Aapo Hyvarinen (University of Helsinki, Finland)

Feature Selection for Neural-Network Based No-Reference Video Quality Assessment

Dubravko Culibrk (University of Novi Sad, Serbia); Dragan Kukolj (University of Novi Sad, Serbia); Petar Vasiljevic (University of Novi Sad, Serbia); Maja Pokric (RT-RK, Serbia); Vladimir Zlokolica (MicronasNIT, Yugoslavia (defunct))

Learning from examples to generalize over pose and illumination

Marco Müller (University of Bochum, Germany); Rolf Würtz (Ruhr-University of Bochum, Germany)

Semi-supervised learning with constraints for multi-view object recognition

Stefano Melacci (University of Siena, Italy); Marco Maggini (University of Siena, Italy); Marco Gori (University of Siena, Italy)

Large-scale Real-time Object Identification Based on Analytic Features

Stephan Hasler (Honda Research Institute Europe, Germany); Heiko Wersing (Honda Research Institute Europe, Germany); Stephan KIRSTEIN (Honda Research Institute Europe, Germany); Edgar Körner (Honda Research Institute Europe GmbH, Germany)

Computational neuroscience II

Room: Hall Evagoras

Chair: Stefanos Kollias (National Technical University of Athens, Greece)

How Bursts Shape the STDP Curve in the Presence/Absence of GABAergic Inhibition

Vassilis Cutsuridis (University of Stirling, United Kingdom); Stuart Cobb (University of Glasgow, United Kingdom); Bruce P. Graham (University of Stirling, United Kingdom)

Optimizing generic neural microcircuits through reward modulated STDP

Prashant Joshi (Frankfurt Institute for Advanced Studies, Germany); Jochen Triesch (Frankfurt Institute for Advanced Studies, Germany)

Calcium Responses Model In Striatum Dependent On Timed Input Sources

Takashi Nakano (Nara Institute of Science and Technology, Japan); Junichiro Yoshimoto (Okinawa Institute of Science and technology, Japan); Jeff Wickens (Okinawa Institute of Science and technology, Japan); Kenji Doya (Okinawa Institute of Science and technology, Japan)

Independent Component Analysis Aided Diagnosis of Cuban Spino Cerebellar Ataxia 2

Rodolfo García (University of Holguin, Cuba); Fernando Rojas (University of Granada, Spain); Jesús González (University of Granada, Spain); Belén San Román (University of Granada, Spain); Olga Valenzuela (University of Granada, Spain); Alberto Prieto (University of Granada, Spain); Luis Velázquez (Centre for the Research and Rehabilitation of Hereditary Ataxias, Cuba); Roberto Rodríguez (Centre for the Research and Rehabilitation of Hereditary Ataxias, Cuba)

Hippocampus, Amygdala and Basal Ganglia based navigation control

Ansgar Koene (University of Sheffield, United Kingdom); Tony Prescott (University of Sheffield, United Kingdom)

Tutorial II

"Analog VLSI circuits for spiking neural networks", Giacomo Indiveri (University of Zurich - ETH Zurich)

Room: Hall Tefkros

2:10 PM - 4:10 PM

Poster Session II

Room: Corridor

Chair: Christos Panayiotou (University of Cyprus, Cyprus)

Neuro-Fuzzy Rough Classifier Ensemble

Marcin Korytkowski (Czestochowa University of Technology, Poland); Robert Nowicki (Czestochowa University of Technology, Poland); Rafal Scherer (Czestochowa University of Technology, Poland)

Adaptive Feature Transformation for Image Data from Non-stationary Processes

Erik Schaffernicht (Ilmenau University of Technology, Germany); Volker Stephan (Powitec Intelligent Technologies GmbH, Germany); Horst-Michael Gross (Ilmenau University of Technology, Germany)

Bio-inspired connectionist architecture for visual detection and refinement of shapes

Pedro Sánchez Orellana (PhD Student, Mexico); Claudio Castellanos Sánchez (Researcher, Mexico)

Efficient optimization of the parameters of LS-SVM for regression versus cross validation error

Gines Rubio (University of Granada, Spain); Hector Pomares (University of Granada, Spain); Ignacio Rojas (University of Granada, Spain); Luis Javier Herrera (University of Granada, Spain); Alberto Guillien (University of Granada, Spain)

Bayesian estimation of kernel bandwidth for nonparametric modelling

Adrian Bors (University of York, United Kingdom); Nikolaos Nasios (University of York, United Kingdom)

Detection of Failures in Civil Structures using Artificial Neural Networks

Zhan Wei Lim (National University of Singapore, Singapore); Colin Tan (National University of Singapore, Singapore); Winston Seah (Institute for Infocomm Research, Singapore); Guan Hong Tan (SysEng (S) Pte Ltd, Singapore)

Using Kernel Basis with Relevance Vector Machine for Feature Selection

Frederic Suard (CEA, France); David Mercier (CEA, France)

Acquiring and Classifying Signals from Nanopores and Ion-Channels

Bharatan Konnanath (Dept EE, ASU, USA); Prasanna Sattigeri (Arizona State University, USA); Trupthi Mathew (ASU, USA); Andreas Spanias (ASU, USA); Shalini Prasad (ASU, USA); Michael Goryll (ASU, USA); Trevor Thornton (ASU, USA); Peter Knee (ASU, USA)

Hand-Drawn Shape Recognition using the SVM'ed Kernel

Khaled Refaat (Cairo University, Egypt); Amir Atiya (Cairo University, Egypt)

Selective attention improves learning

Antti Yli-Krekola (Helsinki University of Technology, Finland); Jaakko Särelä (Helsinki University of Technology, Finland); Harri Valpola (University of Helsinki, Finland)

Scalable Neural Networks for Board Games

Tom Schaul (IDSIA, Switzerland); Juergen Schmidhuber (IDSIA, Switzerland)

Reservoir size, spectral radius and connectivity in static classification problems

Luís Alexandre (Univ. of Beira Interior, Portugal); Mark Embrechts (Rensselaer Polytechnic Institute, USA)

A Comparison of Three Methods with Implicit Features for Automatic Identification of P300s in a BCI

Luigi Sportiello (Politecnico di Milano, Italy); Bernardo Dal Seno (Politecnico di Milano, Italy); Matteo Matteucci (Politecnico di Milano, Italy)

Self-organizing map simulations confirm similarity of spatial correlation structure in natural images and cortical representations

Ravishankar Rao (IBM Research, USA); Guillermo Cecchi (IBM Research, USA)

4:30 PM - 11:00 PM

CONFERENCE BANQUET

Wednesday, Sep 16

8:30 AM - 9:30 AM

KEYNOTE PLENARY

"Approximative combinatorial optimization by orthogonal nonnegative learning", Erkki Oja (Department of Information and Computer Science, Helsinki University of Technology, Finland)

Room: Grand Hall A

Chair: John Taylor (King's College London, United Kingdom)

9:30 AM - 9:50 AM

COFFEE BREAK

9:50 AM - 11:30 AM

Learning algorithms III

Room: Grand Hall A

Chair: Jacek Mańdziuk (Warsaw University of Technology, Poland)

Robustness of Kernel Based Regression: a Comparison of Iterative Weighting Schemes

Kris De Brabanter (Katholieke Universiteit Leuven, Belgium); Kristiaan Pelckmans (Leuven University, Belgium); Jos De Brabanter (KaHo Sint-Lieven (Associatie K.U.Leuven), Belgium); Michiel Debruyne (Universiteit Antwerpen, Belgium); Johan Suykens (KULeuven, Belgium); Mia Hubert (KULeuven, Belgium); Bart De Moor (KULeuven, ESAT-SCD, Belgium)

Mixing Different Search Biases in Evolutionary Learning Algorithms

Krisitna Davoian (University of Muenster, Germany, Germany); Wolfram Lippe (University of Muenster, Germany, Germany)

Semi-Supervised Learning for Regression with Co-Training by Committee

Mohamed Abdel Hady (University of Ulm, Germany); Friedhelm Schwenker (University of Ulm, Germany); Guenther Palm (University of Ulm, Germany)

An analysis of meta-learning techniques for ranking clustering algorithms applied to artificial data

Rodrigo Soares (Federal University of Pernambuco, Brazil); Teresa Ludermir (Federal University of Pernambuco, Brazil); Francisco De Carvalho (UFPE, Brazil)

Probability-based distance function for distance-based classifiers

Cezary Dendek (Warsaw University of Technology, Poland); Jacek Mańdziuk (Warsaw University of Technology, Poland)

Computational neuroscience III

Room: Grand Hall B

Chair: Ali Minai (University of Cincinnati, USA)

A framework for simulation and analysis of dynamically organized distributed neural networks

Vladyslav Shaposhnyk (Grenoble Institut des Neurosciences, Universite Joseph Fourier, Grenoble, France); Pierre Dutoit (Grenoble Institute of Neuroscience, Universite Joseph Fourier, Grenoble, France); Victor Contreras-Lamus (Grenoble Institute of Neuroscience, Universite Joseph Fourier, Grenoble, France); Stephen Perrig (Sleep Research Laboratory, Hopitaux Universitaires de Geneve, Switzerland); Alessandro E. P. Villa (Neuroheuristic, France)

Continuous Attractors of Lotka-Volterra Recurrent Neural Networks

Haixian Zhang (University of Electronic Science and Technology of China, P.R. China); Jiali Yu (University of Electronic Science and Technology of China, P.R. China); Zhang Yi (Sichuan University, P.R. China)

Coexistence of Cell Assemblies and STDP

Florian Hauser (Ulm University, Germany); David Bouchain (Ulm University, Germany); Guenther Palm (University of Ulm, Germany)

Structural Analysis on STDP neural networks using Complex Network Theory

Hideyuki Kato (Saitama University, Japan); Tohru Ikeguchi (Saitama University and ERATO, JST, Japan); Kazuyuki Aihara (University of Tokyo and ERATO, JST, Japan)

Time Coding of Input Strength Is Intrinsic to Synapses with Short Term Plasticity

Márton Hajnal (Eötvös Loránd University, Hungary)

IntelliCIS Workshop: Reliable Management and Control of Telecommunication Networks

Room: Grand Hall C

Chair: Halina Tarasiuk (Warsaw University of Technology, Poland)

The IntelliCIS COST Action: Status and Steps Ahead

Elias Kyriakides (University of Cyprus, Cyprus)

QoS and Resilience in Self-Aware Networks

Erol Gelenbe (Imperial College London, United Kingdom)

Management and Monitoring Issues in Transparent Optical and Converged Optical Wireless Networks

Kyriakos Vlachos (University of Patras, Greece)

One Network, Two Networks, Three Networks...Multilayer Networking

Xavi Masip-Bruin (Technical University of Catalonia, Spain)

Vision and image processing II

Room: Hall Tefkros

Chair: Thomas Martinetz (University of Lübeck, Germany)

Estimation Method of Motion Fields from Images by Model Inclusive Learning of Neural Networks

Yasuaki Kuroe (Kyoto Institute of Technology, Japan); Hajimu Kawakami (Ryukoku University, Japan)

Hybrid neural systems for reduced-reference image quality assessment

Judith Redi (University of Genoa, Italy); Paolo Gastaldo (University of Genoa, Italy); Rodolfo Zunino (University of Genoa, Italy)

Representing Images with χ^2 Distance Based Histograms of SIFT Descriptors

Ville Viitaniemi (Helsinki University of Technology (TKK), Finland); Jorma Laaksonen (HUT, Finland)

Modelling image complexity by independent component analysis, with application to content-based image retrieval

Jukka Perkiö (Helsinki Institute for Information Technology and University of Helsinki, Finland); Aapo Hyvarinen (University of Helsinki, Finland)

Adaptable Neural Networks for Objects' Tracking Re-Initialization

Anastasios D. Doulamis (National Technical University of Athens, Greece)

Signal and time series processing II

Room: Hall Evagoras

Chair: Georgios Ellinas (University of Cyprus, Cyprus)

An Associated-memory-based Stock Price Predictor

Shigeki Nagaya (Tokyo Institute of Technology, Japan); Zhang Chenli (Student, P.R. China); Osamu Hasegawa (Imaging Science and Engineering Lab., Tokyo Institute of Technology, Japan)

A Case Study of ICA with Multi-scale PCA of Simulated Traffic Data

Shengkun Xie (University of Guelph, Canada); Pietro Lio' (University of Cambridge, United Kingdom); Anna Lawniczak (University of Guelph, Canada)

Decomposition methods for detailed analysis of content in ERP recordings

Vasiliki Iordanidou (Technical University of Crete, Greece); Kostas Michalopoulos (Technical University of Crete, Greece); Vangelis Sakkalis (Institute of Computer Science, Foundation for Research and Technology, Greece); Michalis Zervakis (Technical University of Crete, Greece)

Outlier Analysis in BP/RP spectral bands

Diego Ordóñez (University of A Coruña, Spain); Carlos Dafonte (University of A Coruña, Spain); Bernardino Arcay (University of A Coruña, Spain); Minia Manteiga (University of A Coruña, Spain)

Comparison of Adaptive Algorithms for Significant Feature Selection in Neural Network Based Solution of the Inverse Problem of Electrical Prospecting

Sergey Dolenko (D.V.Scobeltsyn Nuclear Physics Institute, M.V.Lomonosov Moscow State University, Russia); Alexander Guzhva (D.V. Skobeltsyn Institute of Nuclear Physics, M.V.Lomonosov State University, Russia); Eugeny Osbornev (S.Ordjonikidze Russian State Geological Prospecting University, Russia); Igor Persiantsev (D.V. Skobeltsyn Institute of Nuclear Physics, M.V.Lomonosov State University, Russia); Mikhail Shimelevich (S.Ordjonikidze Russian State Geological Prospecting University, Russia)

11:45 AM - 12:45 PM

KEYNOTE PLENARY

"Evolving, Training and Designing Neural Network Ensembles", Xin Yao (CERCIA, School of Computer Science, University of Birmingham, UK)

Room: Grand Hall A

Chair: Wlodek Duch (Nicolaus Copernicus University, Poland)

12:45 PM - 2:10 PM

LUNCH

2:10 PM - 3:50 PM

Neural and hybrid architectures III

Room: Grand Hall A

Chair: Michalis Zervakis (Technical University of Crete, Greece)

Switching Hidden Markov Models for learning of motion patterns in videos

Matthias Höffken (Fraunhofer Institute for Applied Information Technology (FIT), Germany); Daniel Oberhoff (Fraunhofer Institute for Applied Information Technology (FIT), Germany); Marina Kolesnik (Fraunhofer Institute for Applied Information Technology (FIT), Germany)

Multimodal Belief Integration by HMM/SVM-Embedded Bayesian Network: Applications to Ambulating PC Operation by Body Motions and Brain Signals

Yasuo Matsuyama (Waseda University, Japan); Fumiya Matsushima (University of Waseda, Japan); Youichi Nishida (Waseda University, Japan); Takashi Hatakeyama (Waseda University, Japan); Nimiko Ochiai (Waseda University, Japan); Shogo Aida (Waseda University, Japan)

A Neural Network Model of Metaphor Generation with Dynamic Interaction

Asuka Terai (Tokyo Institute of Technology, Japan); Masanori Nakagawa (Tokyo Institute of Technology, Japan)

Almost Random Projection Machine

Tomasz Maszczyk (Nicolaus Copernicus University, Poland); Wlodek Duch (Nicolaus Copernicus University, Poland)

Optimized Learning Vector Quantization Classifier with an Adaptive Euclidean Distance

Renata Souza (Universidade Federal de Pernambuco, Brazil); Telmo Silva Filho (Universidade Federal de Pernambuco, Brazil)

Special Session: Neuro-Evolution and Hybrid Techniques for Mobile Agents Control

Room: Grand Hall B

Chair: Jan Koutnik (IDSIA Switzerland)

Evolving memory cell structures for sequence learning

Justin Bayer (IDSIA, Switzerland); Daan Wierstra (IDSIA, Switzerland); Julian Togelius (IDSIA, Switzerland); Juergen Schmidhuber (IDSIA, Switzerland)

Measuring and Optimizing Behavioral Complexity for Evolutionary Reinforcement Learning

Faustino Gomez (IDSIA, Switzerland); Julian Togelius (IDSIA, Switzerland); Juergen Schmidhuber (IDSIA, Switzerland)

Combining Multiple Inputs in HyperNEAT Mobile Agent Controller

Jan Drchal (Czech Technical University in Prague, Czech Republic); Ondrej Kapral (Czech Technical University in Prague, Czech Republic); Jan Koutník (IDSIA, Switzerland); Miroslav Snorek (Czech Technical University in Prague, Czech Republic)

Evolving Spiking Neural Parameters for Behavioral Sequences

Thomas Poulsen (University of Sheffield, United Kingdom); Roger Moore (University of Sheffield, United Kingdom)

Robospike Sensory Processing for a Mobile Robot Using Spiking Neural Networks

Michael Mc Bride (University of Ulster, United Kingdom); Martin McGinnity (University of Ulster, United Kingdom); Liam Maguire (University of Ulster, United Kingdom)

IntelliCIS Workshop: Reliable Management and Control of Electric Power Systems

Room: Grand Hall C

Chair: René Serral Gracià (Technical University of Catalonia, Spain)

Measurements Get Together

Vladimir Terzija (University of Manchester, United Kingdom)

Reliable Management and Control of Power Grids under Vulnerable Operating Conditions

Chen-Ching Liu (University College Dublin, Ireland)

Wide Area Monitoring in Power Systems: Data Aggregation and Measurement Uncertainty Issues

Mihaela Albu (University Politehnica Bucharest, Romania)

The FP7 Viking Project

Pontus Johnson (Royal Institute of Technology, Sweden)

Neural control, planning and robotics applications

Room: Hall Tefkros

Chair: Haris Psillakis (Technical University of Crete, Greece)

Basis Decomposition of Motion Trajectories using Spatio-Temporal NMF

Sven Hellbach (Ilmenau University of Technology, Germany); Julian Eggert (Honda Research Institute Europe, Germany); Edgar Körner (Honda Research Institute Europe GmbH, Germany); Horst-Michael Gross (Ilmenau University of Technology, Germany)

An Adaptive NN Controller with Second Order SMC-based NN Weight Update Law for Asymptotic Tracking

Haris Psillakis (Technical University of Crete, Greece)

Optimizing Control by Robustly Feasible Model Predictive Control and Application to Drinking Water Distribution Systems

Vu Nam Tran (PhD Student at University of Birmingham, United Kingdom); Mietek Brdys (University of Birmingham, United Kingdom)

Distributed Control over Networks using smoothing techniques

Ion Necoara (University Politehnica Bucharest, Romania)

Trajectory Tracking of a Nonholonomic Mobile Robot Considering the Actuator Dynamics: Design of a Neural Dynamic Controller Based on Sliding Mode Theory

Nardênio Martins (UFSC - Federal University of Santa Catarina, Brazil); Douglas Bertol (Federal University of Santa Catarina, Brazil); Edson De Pieri (UFSC - Federal University of Santa Catarina, Brazil)

Special Session: Intelligent Tools and Methods for Multimedia Annotation

Room: Hall Evagoras

Chair: Nicolas Tsapatsoulis (Cyprus University of Technology, Cyprus)

AM-FM Texture Image Analysis of the Intima and Media Layers of the Carotid Artery

Christos Loizou (Intercollege, Cyprus); Marios Pattichis (University of New Mexico, USA); Constantinos Pattichis (University of Cyprus, Cyprus); Christodoulos Christodoulou (UCY, Cyprus); Andies Nicolaides (Vascular Screening and Diagnostic Centre, Cyprus); Victor Murray (University of New Mexico, USA); Marios Pantzaris (Cyprus Institute of Neurology and Genetics, Cyprus)

Unsupervised Clustering of Clickthrough Data for Automatic Annotation of Multimedia Content

Klimis Ntalianis (National Technical University of Athens, Greece); Anastasios D. Doulamis (National Technical University of Athens, Greece); Nikolaos Doulamis (National Technical University of Athens, Greece); Nicolas Tsapatsoulis (Cyprus University of Technology, Cyprus)

Object Classification using the MPEG-7 visual descriptors: An experimental evaluation using state of the art data classifiers

Nicolas Tsapatsoulis (Cyprus University of Technology, Cyprus); Zenonas Theodosiou (Cyprus University of Technology, Cyprus)

MuLVAT: A Video Annotation Tool based on XML-dictionaries and Shot Clustering

Zenonas Theodosiou (Cyprus University of Technology, Cyprus); Anastasis Kounoudes (Signal Generix, Cyprus); Nicolas Tsapatsoulis (Cyprus University of Technology, Cyprus); Marios Milis (Signal GeneriX Ltd, Cyprus)

Multimodal Sparse Features for Object Detection

Martin Haker (University of Lubeck, Germany); Thomas Martinetz (University of Lübeck, Germany); Erhardt Barth (Univ of Luebeck, Germany)

3:50 PM - 4:10 PM

COFFEE BREAK

4:10 PM - 5:50 PM

Data analysis and pattern recognition III

Room: Grand Hall A

Chair: Guenther Palm (University of Ulm, Germany)

Kernel Alignment k-NN for Human Cancer Classification using the Gene Expression Profiles

Manuel Martin-Merino (Universidad Pontificia de Salamanca, Spain); Javier De Las Rivas (Cancer Research Center (CIC-IBMCC, CSIC/USAL), Spain)

Feature Extraction Using Linear and Non-Linear Subspace Techniques

Ana Maria Tome (University of Aveiro, Portugal); Ana Teixeira (DETUA/IEETA, University of Aveiro, Portugal); Elmar Lang (Institute of Biophysics, University of Regensburg, Germany)

Strengthening the Forward Variable Selection Stopping Criterion

Luis Javier Herrera (University of Granada, Spain); G. Rubio (University of Granada, Spain); H. Pomares (University of Granada, Spain); B. Paechter (University of Granada, Spain); A. Guillien (University of Granada, Spain); I. Rojas (University of Granada, Spain)

Features and metric from a classifier improve visualizations with dimension reduction

Eliina Parviainen (Helsinki University of Technology, Finland); Aki Vehtari (Helsinki University of Technology, Finland)

Fuzzy Cluster Validation Using the Partition Negentropy Criterion

Luis Lago-Fernández (Universidad Autónoma de Madrid, Spain); Manuel Sánchez-Montañés (Universidad Autónoma de Madrid, Spain); Fernando Corbacho (Cognodata Consulting, Spain)

Applications II

Room: Grand Hall B

Chair: Leszek Rutkowski (Czestochowa University of Technology, Poland)

Connectionist Models For Formal Knowledge Adaptation

Ilianna Kollia (National Technical University of Athens, Greece); Nikolaos Simou (National Technical University of Athens, Greece); Giorgos Stamou (National Technical University of Athens, Greece); Andreas Stafylopatis (National Technical University of Athens, Greece)

Modeling Human Operator Controlling Process in Different Environments

Darko Kovacevic (Faculty of Maritime Studies, Split, Croatia, Croatia); Nikica Pribacic (Faculty of Maritime Studies, Split, Croatia, Croatia); Mate Jovic (Technical School Imotski, Imotski, Croatia, Croatia); Radovan Antonic (Faculty of Maritime Studies, Split, Croatia, Croatia); Asja Kovacevic (Clinical Hospital SPLIT, Split, Croatia, Croatia)

Discriminating between V and N beats from ECGs introducing an integrated reduced representation along with a Neural Network classifier

Václav Chudáček (Czech Technical University in Prague, Czech Republic); George Georgoulas (TEI of Epirus, Greece); Michal Huptych (Czech Technical University in Prague, Czech Republic); Chrysostomos Stylios (TEI of Epirus, Greece); Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

Mental Tasks Classification for a Noninvasive BCI Application

Alexandre Barbosa (PUC-Rio, Brazil); David Diaz (PUC-Rio, Brazil); Marley Vellasco (Pontificia Universidade Católica do Rio de Janeiro, Brazil); Marco Meggiolaro (PUC-Rio, Brazil); Ricardo Tanscheit (Pontificia Universidade Católica do Rio de Janeiro, Brazil)

Municipal Creditworthiness Modelling by Radial Basis Function Neural Networks and Sensitive Analysis of their Input Parameters

Petr Hajek (University of Pardubice, Czech Republic); Vladimir Olej (University of Pardubice, Czech Republic)

Computational Intelligence

Room: Hall Tefkros

Chair: Haris Psillakis (Technical University of Crete, Greece)

ANNs and Other Machine Learning Techniques in Modelling Models' Uncertainty

Durga Lal Shrestha (UNESCO-IHE Institute for Water Education, The Netherlands); Nagendra Kayastha (UNESCO-IHE Institute for Water Education, The Netherlands); Dimitri Solomatine (UNESCO-IHE Institute for Water Education, The Netherlands)

Bilinear Adaptive Parameter Estimation in Fuzzy Cognitive Networks

Theodoris Kottas (Democritus University of Thrace, Greece); Yiannis Boutalis (Democritus University of Thrace, Greece); Manolis Christodoulou (Technical University of Crete, Greece)

Constrained Learning Vector Quantization or Relaxed k-Separability

Marek Grochowski (Nicolaus Copernicus University, Poland); Wlodek Duch (Nicolaus Copernicus University, Poland)

Efficient Parametric Adjustment of Fuzzy Inference System Using Error Backpropagation Method

Ivan Silva (University of Sao Paulo, Brazil); Rogerio Flauzino (University of Sao Paulo, Brazil)

Minimization of Quadratic Binary Functional with Additive Connection Matrix

Leonid Litinskii (Russian Academy of Sciences, Russia)

Critical infrastructure systems

Room: Hall Evagoras

Chair: Eugene Tuv (Intel, USA)

Multiple Kernel Learning of Environmental Data. Case Study: Analysis and Mapping of Wind Fields

Loris Foresti (University of Lausanne, Switzerland); Devis Tuia (University of Lausanne, Switzerland); Alexei Pozdnoukhov (National University of Ireland, Ireland); Mikhail Kanevski (University of Lausanne, Switzerland)

Contributor Diagnostics for Anomaly Detection

George Runger (Arizona State University, USA); Alexander Borisov (Intel, Russia); Eugene Tuv (Intel, USA)

Indoor Localization using Neural Networks with Location Fingerprints

Christos Laoudias (University of Cyprus, Cyprus); Demetrios Eliades (University of Cyprus, Cyprus); Paul Kempfi (VTT Technical Research Centre of Finland, Finland); Christos Panayiotou (University of Cyprus, Cyprus); Marios Polycarpou (University of Cyprus, Cyprus)

Distributed Faulty Sensor Detection in Sensor Networks

Xuanwen Luo (Wayne State University, USA); Ming Dong (Wayne State University, USA)

Congestion Control in Autonomous Decentralized Networks based on the Lotka-Volterra Competition Model

Pavlos Antoniou (University of Cyprus, Cyprus); Andreas Pitsillides (University of Cyprus, Cyprus)

Thursday, Sep 17

9:00 AM - 10:00 AM

IntelliCIS Workshop keynote

Massoud Amin (University of Minnesota, USA)

Room: [Grand Hall A](#)

10:00 AM - 10:30 AM

COFFEE BREAK

10:30 AM - 12:30 PM

WORKSHOP on Data, Data mining and Modelling of Brain Activity for Understanding Attentional Mechanisms

Room: [Grand Hall A](#)

WORKSHOP on Machine Learning for Immunology

Room: [Grand Hall B](#)

IntelliCIS Workshop: Intelligent System-Theoretic Approaches for Critical Infrastructure Systems

Room: [Grand Hall C](#)

Chair: [Iain Phillips \(Loughborough University, United Kingdom\)](#)

Distributed Monitoring of Large-Scale Critical Infrastructure Systems

Marios Polycarpou (University of Cyprus, Cyprus)

The Structured Intelligence Approach for Modelling and Simulation of Intelligent Behaviour

Essam Badreddin (University of Heidelberg, Germany)

Wireless, Wired and Hybrid monitoring systems

Cesare Alippi (Politecnico di Milano, Italy)

Technologies and Infrastructures for Information and Knowledge Processing in Intelligent Monitoring Systems

Vincenzo Piuri (Università degli Studi di Milano, Italy)

12:30 PM - 2:00 PM

LUNCH

2:00 PM - 4:30 PM

Toxicity prediction competition

Room: Grand Hall B

IntelliCIS Workshop: Health Monitoring and Control of Water Systems

Room: Grand Hall C

Chair: Attila Vidács (Budapest University of Technology and Economics, Hungary)

Risk-based Methodology for Monitoring and Operational Management of Water Distribution Systems

Dragan Savic (University of Exeter, United Kingdom)

Intelligent Control and Security of Critical Infrastructure Systems: methodology, structures, algorithms and applications to drinking water distribution systems and integrated wastewater treatment systems - control systems engineering approach

Mietek Brdys (Gdansk University of Technology, Poland)

Multi-Objective Optimization of Urban Water Networks: Two Problems

Dimitri Solomatine (UNESCO - IHE Institute for Water Education, The Netherlands)

Early Warning Monitoring Design and Forensic Investigation in Drinking Water Systems

Marco Propato (Networks, Water Treatment and Water Quality Research Unit, France)