Technical Program – NaBIC'14 / CASoN'14

July 30 – 31, 2014
Porto, Portugal

Sixth World Congress on Nature and Biologically Inspired Computing (NaBIC 2014)
http://www.mirlabs.net/nabic14/

Sixth International Conference on Computational Aspects of Social Networks (CASoN 2014)
http://www.mirlabs.net/cason14/

July 30, 2014

08:30 - 09:00: Opening Ceremony (Room H202)

09:00 - 10:00: Plenary Talk 1 (Room H202)
Spectrum of Rule Algorithms: From Classical, through Multiple-instance, to One-class
Speaker: Krzysztof (Krys) Cios, Virginia Commonwealth University, USA

10:00 - 10:30: Coffee Break

10:30 - 13:00: NaBIC Session I - Global Optimization (Room H202)
Chair: E. J. Solteiro Pires and Mauro Castelli

A Hybrid Harmony Search Algorithm with Variable Neighbourhood Search for the Bin-Packing Problem
Mauro Castelli and Leonardo Vanneschi

Implementing Flower Multi-objective Algorithm for selection of University academic credits
C. Alberto Ochoa-Zezatti

Diversity study of Multi-Objective Genetic Algorithm based on Shannon Entropy
E. J. Solteiro Pires, J. A. Tenreiro Machado and P. B. de Moura Oliveira

Performance Analysis of Multiobjective Artificial Bee Colony Implementations for Phylogenetic Reconstruction
Sergio Santander-Jiménez and Miguel A. Vega-Rodríguez

On The Efficiency of Multi-core Grammatical Evolution (MCGE) Evolving Multi-Core Parallel Programs
Gopinath Chennupati

Demonstrating the Power of Object-Oriented Genetic Programming via the Inference of Graph Models for Complex Networks
Michael Medland, Kyle Harrison and Beatrice Ombuki-Berman

Multiobjective optimization for Volt/THD problem in Distribution System
Angelo Almeida, Franklin Pamplona, Helon Braz, José Silva and Luciano Barros

An Experimental Analysis of the Echo State Network Initialization Using the Particle Swarm Optimization
Sebastián Basterrech, Enrique Alba and Vaclav Snasel

13:00 - 14:00: Lunch Break

14:00 - 15:00 : Plenary Talk II (Room H202)
Hyper-heuristics: Automatic Design of Optimization Algorithms with Grammatical Evolution
Francisco B. Pereira, Instituto Superior de Engenharia de Coimbra, Portugal

15:00 - 16:00: NaBIC Session II - Intelligent Applications (Room H202)
Chair: Pedro Machado and Habiba Drias

Towards an autonomous multistate biomolecular devices built on DNA
Tadeusz Krasiski, Sebastian Sakowski and Tomasz Popawski

Studying the Reporting Cells Strategy in a Realistic Mobile Environment
Víctor Berrocal-Plaza, Miguel Ángel Vega-Rodríguez and Juan Manuel Sánchez-Pérez

Archives-holding XCS Classifier System: A Preliminary Study
Takahiro Komine, Masaya Nakata and Keiki Takadama

Si elegans: FPGA Hardware Emulation of C. elegans Nematode Nervous System
Pedro Machado, John Wade and Martin McGinnity

Genetic Algorithm versus Memetic algorithm for Association Rules Mining
Habiba Drias

16:00 - 16:20: Coffee Break

16:20 - 18:00: NaBIC Session III - Intelligent Applications (Room H202)
Chair: R. Muhammad Atif Azad and Ivo Pereira

A Perturbation and Observation Routine Used To Control A Power Converter
Tiago Santos and Acácio Galhardo

Fuzzy Linguistic Controllers Applied to Decouple Control Loop Effects
João Calado and Andrei Sousa

Information Acquisition Performance by Supervised Information-Theoretic Self-Organizing Maps
Ryotaro Kamimura

Efficient Approaches to Interleaved Sampling of training data for Symbolic Regression
R. Muhammad Atif Azad, David Medernach and Conor Ryan

A Multi-Objective Imperialist Competitive Algorithm to Solve a New Multi-Modal Tree Hub Location Problem
Reza Tavakkoli-Moghaddam and Samaneh Sedehzadeh

08:30 - 09:30: Plenary Talk III (Room H202) - Biologically Inspired Algorithms for Speech Based Interfaces
Speaker: Luis Coelho, Escola Superior de Estudos Industriais e de Gestão, Portugal

09:30 - 10:00 : Coffee Break

10:00 - 13:00: CASoN Session I - Social Networks (Room H207)
Chair: Manuel Grana and Darko Obradovic

Direct Generation of Random Graphs Exactly Realising a Prescribed Degree Sequence
Darko Obradovic and Maximilien Danisch

Community Detection on Heterogeneous Networks by Multiple Semantic-Path Clustering
Qinxue Meng, Paul Kennedy and Siamak Tafavogh

An ANP-based Method for Modeling Centrality in Online Social Networks
Rafael Giordano Vieira, Fernanda Sales Bittencourt de Lemos and Janine Kniess

Group Adjacency Matrices: Effective Visualisation of Community Structure in Large Networks
Darko Obradovic

Recipe tuning by Reinforcement Learning in the SandS ecosystem
Borja Fernandez-Gauna and Manuel Grana

10:00 - 11:00: NaBIC Session IV- Data Mining (Room H202)
Chair: Parimala Thulasiraman and Jorge M. Santos

Reusable Knowledge by Linkage-Classifier in Accuracy-based Learning Classifier System
Kotaro Usui, Masaya Nakata and Keiki Takadama

Portfolio Diversification Using Ant Brood Sorting Clustering
Ruppa Thulasiram, Parimala Thulasiraman and Olayinka Idowu Oduntan

Incremental clustering of data stream using real ants behavior
Nesrine Masmoudi, Hanane Azzag, Mustapha Lebbah and Cyrille Bertelle

11:00 - 13:00: NaBIC Session V- Scheduling (Room H202)
Chair: Leonilde Varela and João Paulo Pereira

An Ordered Approach to Minimum Completion Time in Unrelated Parallel- Machines for the Makespan Optimization
André Serra Santos, Ana Maria Madureira and Maria Leonilde Varela

Alternative Approaches Analysis for Scheduling in an Extended Manufacturing Environment
André Serra Santos, Maria Leonilde Varela, Goran D. Putnik and Ana Maria Madureira

An Architecture for User Modeling on Intelligent and Adaptive Scheduling Systems
Ana Madureira, Bruno Cunha, João Pereira Pereira, Ivo Pereira and Silvia Gomes

Energy Optimization for Task Scheduling in Distributed Systems by an Artificial Bee Colony Approach
María Arsuaga-Ríos and Miguel Ángel Vega Rodríguez

Prototype of an Adaptive Decision Support System for Interactive Scheduling with MetaCognition and User Modeling Experience
Ana Madureira, Silvia Gomes, Bruno Cunha, João Pereira, Jorge Santos and Ivo Pereira

Scheduling Single-machine Problem based on Just-In-Time Principles
Joana Dantas and Leonilde Varela

13:00 - 14:00: Lunch Break

14:00 - 15:00: Plenary Talk IV (Room H202) - So, What's New About Social Networks?
Benjamim Fonseca, University of Trás-os-Montes e Alto Douro , Portugal

15:00 - 16:00: NaBIC Session VI – Scheduling (Room H202)
Chair: Ana Madureira and Luis Coelho

Comparative Analysis of Scheduling Rules through Arena for Parallel Machines - A Case Study
Filipa Teixeira, Lara Oliveira and Leonilde Varela

Scheduling in Product Oriented Manufacturing Systems - Comparing hybrid flowshop with parallel-machine flowshop: an industrial study
Natália Costa, Leonilde Varela and Sílvio Carmo-Silva

Parallel Machines Scheduling with Fuzzy Simulated Annealing
André Serra Santos, Maria Leonilde Varela, Ana Maria Madureira and Rita A. Ribeiro

Manufacturing Rush Orders Rescheduling: a Supervised Learning based Approach
Ana Madureira, Jorge Santos, Silvia Gomes, João P. Pereira and Ivo Pereira

15:00 - 16:00: NaBIC Session VII - Hybrid Systems(Room H207)
Chair: Nelishia Pillay and Amélia Loja

Hybridizing Evolutionary Algorithms for Creating Classifier Ensembles
Emmanuel Dufourq and Nelishia Pillay

Hybrid Genetic-Fuzzy Systems for Improved Performance in Residual-Based Fault Detection
Francisco Serdio, Ciprian Zavoianu, Edwin Lughofer, Kurt Pichler, Thomas Buchegger and Hajrudin Efendic

Feature Selection and Ensemble of Regression models for Predicting the Protein Macromolecule Dissolution Profile
Varun Ojha, Konrad Jackowski, Ajith Abraham and Vaclav Snasel

Optimization of Interval Type-2 Fuzzy Logic Systems using Tabu Search Algorithms
Majid Almaraashi and Abdel-Rahman Hedar

16:00 - 16:20: Coffee Break

16:20 - 17:30: NaBIC Session VIII - Hybrid Systems (Room H202)
Chair: Joaquim Infante Barbosa and Yuko Osana

Fall Avoidance of Bipedal Walking Robot by Profit Sharing that can Lear n Deterministic Policy for POMDPs Environments
Toshihiro Suzuki and Yuko Osana

Automatic Melody Generation considering Chord Progression by Genetic Algorithm
Motoki Kikuchi and Yuko Osana

Logarithmically Proportional Objective Function for Planar Surfaces Recognition in 3D Point Cloud
Mosab Bazargani, Luís Mateus and Maria Amélia R. Loja

Optimal Location of Supports in Beam Structures Using Genetic Algorithms
Diógenes Loureiro, Amélia Loja and Tiago Silva

16:20 - 17:30: NaBIC Session IX - Intelligent Applications (Room H207)
Chair: Paulo Goncalves and Judite Ferreira

Optimization of structures modeled with a meshfree approach
Gonçalo Bernardo and M. Amélia Loja

Reg4OptFlux: an OptFlux plug-in that comprises meta-heuristics approaches for Metabolic Engineering using Integrated Models
Orlando Rocha, Paulo Vilaça, Miguel Rocha and Rui Mendes

Effect of Communication Topologies on Hybrid Evolutionary Algorithms
Wayne Franz and Parimala Thulasiram

Towards a low-cost framework for Intelligent Robots
Paulo Goncalves, Fábio Santos and Pedro Torres

Deleting or Keeping Outliers for Classifier Training?
Antonio J. Tallón-Ballesteros and José C. Riquelme

18:30 - 21:00: Conference Banquet

- Poster Presentation During Coffee Breaks -

** NaBIC 2014 Posters **

Optimal Operation Point in Electrical Grids Using a MOPSO Algorithm
Paulo Pereira, Sérgio Leitão and Eduardo Solteiro Pires

Magnetotactic Bacteria Optimization Algorithm Based On Best-Rand Scheme
Hongwei Mo and Mengjiao Geng

Discount Heuristics and Heterogeneous Probabilities for Optimal Influence in Social Networks
Kalyanasundaram Sivasailam, Vinu Sebastian, Dhanya Jacob and Swapan Bhattacharaya

Fuzzy C-Means with Wavelet Filtration for MR Image Segmentation
Shang-Ling Jui, Chao Lin, Haibing Guan, Ajith Abraham, Aboul Ella Hassanien and Kai Xiao

Extracting Three-Dimensional Cellular Automaton for Cement Microstructure Development using Gene Expression Programming
Zhifeng Liang, Bo Yang, Lin Wang, Xiaoqiang Zhang, Nana He and Ajith Abraham

Improvement of FCM Neural Network Classifier using K-Medoids Clustering
Xiaoqian Zhang, Bo Yang, Lin Wang, Zhifeng Liang and Ajith Abraham

Rapid Way Mobile Application in Wireless Sensor Network: A Practical Research in Transportation System
Iman Valizadeh, Mohammad Shojafar and Ajith Abraham

Feedforward and Feedback Optimal Vibration Rejection for Active Suspension Discrete-Time Systems under In-Vehicle Networks
Shi-Yuan Han, Dong Wang, Yue-Hui Chen, Kun Ma, Ajith Abraham and Zhong-Guang Liu

Genetic Algorithm for Solving Survivable Network Design Problem with Extending-Cycle-Based Protected Working Capacity Envelope
Le Khac Tuan and Huynh Thi Thanh Binh

** CASoN Posters **

Maximization of entropy in a asymmetry-coupled network
Xiaoling Nian and Hongguang Fu

Internet of Things Communication Reference Model
Adel Al-hamedi

Hybrid Parallel Approach for Personalized Literature Recommendation System
Kun Ma, Ting ting Lu and Ajith Abraham

A New Protein Structure Classification Model

Dong Wang, Shiyuan Han, Yuehui Chen, Wenzheng Bao, Xumi Qu, Kun Ma and Ajith Abraham

Modeling Dynamics of Social Networks: A Survey
Saoussen Aouay, Salma Jamoussi, Faiez Gargouri and Ajith Abraham