



2nd International Conference on the Theory and Practice of Natural Computing

TPNC 2013, December 3 - 5, 2013
Cáceres, Spain



Program

Tuesday, December 3	
9:00 – 9:50	Registration
9:50 – 10:00	Opening
10:00 – 10:50	EUGEN CZEIZLER, PEKKA ORPONEN: <i>Yield optimization strategies for (DNA) staged Tile Assembly Systems</i>
Miroslaw Kordos	VINAY KUMAR GAUTAM, PAULINE C. HADDOW, MARTIN KUIPER: <i>Reliable Self-assembly by Self-triggered Activation of Enveloped DNA Tiles</i>
10:50 – 11:20	Coffee Break
11:20 – 13:00	MIROSLAW KORDOS, ANDRZEJ RUSIECKI: <i>Improving MLP Neural Network Performance by Noise Reduction</i>
Eugen Czeizler	OMAR K. SHOUKRY, MAGDA B. FAYEK: <i>Evolutionary Scheduling for Mobile Content Pre-fetching</i>
	MARIUS NAGY, NAYA NAGY: <i>General Quantum Encryption Scheme based on Quantum Memory</i>
	MARIUS NAGY, NAYA NAGY: <i>Quantum Secret Communication without an Encryption Key</i>
13:00 – 15:00	Lunch
15:00 – 15:50	OLIVER RICE, ROBERT SMITH, RICKARD NYMAN: <i>GPU Multi-Objective Genetic Algorithm: Asynchronously Parallel Distributed NSGA-II</i>
Marius Nagy	ANNE JEANNIN-GIRARDON, PASCAL BALLEST, VINCENT RODIN: <i>An Efficient Biomechanical Cell Model to Simulate Large Multi-cellular Tissue Morphogenesis: Application to Cell Sorting Simulation on GPU</i>
15:50 – 16:05	Break
16:05 – 16:55	RISTO MIIKKULAINEN: <i>Evolving Neural Networks: Approaches – Invited Tutorial I</i>
M. Á. Vega- Rodríguez	



Wednesday, December 4	
9:00 – 10:40 Risto Miikkulainen	RIM HENTECH, ILYES JENHANI, ZIED ELOUEDI: <i>Learning from Uncertain Data Using Possibilistic Artificial Immune Recognition Systems</i>
	MASSIMILIANO D'ANGELO, BEREND WEEL, AGOSTON E. EIBEN: <i>Online Gait Learning for Modular Robots with Arbitrary Shapes and Sizes</i>
	JOSÉ M. LANZA-GUTIÉRREZ, JUAN A. GÓMEZ-PULIDO, MIGUEL ÁNGEL VEGA-RODRÍGUEZ: <i>A Trajectory Algorithm to Solve the Relay Node Placement Problem in Wireless Sensor Networks</i>
	RAFAEL NOGUERAS, CARLOS COTTA, CARLOS M. FERNANDES, JUAN LUIS JIMÉNEZ LAREDO, JUAN JULIÁN MERELO, AGOSTINHO C. ROSA: <i>An Analysis of a Selecto-Lamarckian Model of Multimemetic Algorithms with Dynamic Self-Organized Topology</i>
10:40 – 11:10	Coffee Break
11:10 – 11:50	Poster Session I (see next page)
11:50 – 12:05	Break
12:05 – 12:55 M. Á. Vega-Rodríguez	RISTO MIIKKULAINEN: <i>Evolving Neural Networks: Applications</i> – Invited Tutorial II
12:55 – 14:50	Lunch
14:50 – 15:30	Poster Session II (see next page)
15:40	Visit to the City



Plaza Mayor

Wednesday, December 4 – Poster Session I

11:10 – 11:50 Carlos Cotta	ORLANDO DURAN: <i>A Hybrid Solution to the Multi-Echelon Inventory Problem of Repairable Spare Parts Using Discrete Swarm Intelligence and a Local Search Procedure</i>
	JESÚS TORRECILLA-PINERO, FERNANDO TORRECILLA-PINERO, JUAN A. GÓMEZ-PULIDO, CARLOS URUEÑA-FERNÁNDEZ: <i>A Novel Way to Optimize Cantilever Walls by Means of Natural Computing and Multiobjective Optimization</i>
	HECTOR ZENIL: <i>Complexity and Algorithmic Probability of Animal Behaviour from Cognition to Communication</i>
	CRISTINA MARTÍNEZ-RAMÍREZ, ALBERTO BESANA: <i>Models for the Distribution of Letters in Random Generated Words</i>

Wednesday, December 4 – Poster Session II

14:50 – 15:30 Naya Nagy	RAÚL DOMÍNGUEZ, TIM KÖHLER, CHRISTIAN RAUCH, ELMAR BERGHÖFER, FRANK KIRCHNER: <i>Autonomous Robot Long Distance Traversing by a Robust Nature-Inspired Behaviour Control Model Using Sensor Feedback Expectations</i>
	KAZUNARI OZASA, JEESOO LEE, SIMON SONG, MASAHIKO HARA, MIZUO MAEDA: <i>Introduction of Artificial Pheromone Effects on Euglena Cells Toward Ant Colony Optimization Experiments</i>
	MIKHAIL PERETYAT'KIN: <i>Combinatorial Computation in First-Order Predicate Logic as a Formal Prototype of Natural Computing</i>
	ANTONIO J. TALLÓN-BALLESTEROS, JOSÉ C. RIQUELME, CÉSAR HERVÁS-MARTÍNEZ, ROBERTO RUIZ: <i>Enhancing the Performance of a Feature Selection Method Based Jointly on Feature Ranking and Feature Subset Selection in the Context of a Neural Network Classifier</i>
	ÁNGELA VILLOTA, JESÚS ARANDA: <i>Towards a General Approach to Model Biological Systems from Membrane Systems into a Concurrent Constraint Calculus</i>

Thursday, December 5	
9:00 – 9:50 Antonio Martí Campoy	XIN YAO: <i>Evolutionary Algorithm Portfolios for Numerical Optimisation</i> – Invited Talk
9:50 – 10:05	Break
10:05 – 11:20 Lingling Jin	YARA KHALUF, MAURO BIRATTARI, FRANZ RAMMIG: <i>Probabilistic Analysis of Long-term Swarm Performance under Spatial Interferences</i> VÍCTOR BERROCAL-PLAZA, MIGUEL ÁNGEL VEGA-RODRÍGUEZ, JUAN M. SÁNCHEZ-PÉREZ: <i>A New Version of the Multiobjective Artificial Bee Colony Algorithm for Optimizing the Location Areas Planning in a Realistic Network</i> TAKUYA NISHIDA, TAKA AKI MIZUKI, HIDEAKI SONE: <i>Securely Computing the Three-Input Majority Function with Eight Cards</i>
11:20 – 11:50	Coffee Break
11:50 – 13:05 Takaaki Mizuki	YAHYA O. MOHAMED ELHADJ, MANSOUR ALGHAMDI, MOHAMED ALKANHAL: <i>Approach for Recognizing Allophonic Sounds of the Classical Arabic Based on Quran Recitations</i> ANTONIO MARTÍ CAMPOY, FRANCISCO RODRÍGUEZ-BALLESTER, RAFAEL ORS CAROT: <i>Using Dynamic, Full Cache Locking and Genetic Algorithms for Cache Size Minimization in Multitasking, Preemptive, Real-time Systems</i> LINGLING JIN, IAN MCQUILLAN: <i>Computational Modelling of the Interruptional Activities between Transposable Elements</i>
13:05	Closing

We acknowledge the support by:

