

2014 IEEE Congress on Evolutionary Computation

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Tuesday, July 8, 4:00PM-6:00PM

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| | Peng Cheng, Jeng-Shyang Pan and Chun-Wei Lin | 1108 |
| 4:40PM | <i>An Online Evolutionary Rule Learning Algorithm with Incremental Attribute Discretization</i> | |
| | Essam Debie, Kamran Shafi, Kathryn Merrick and Chris Lokan | 1116 |
| 5:00PM | <i>An External Archive Guided Multiobjective Evolutionary Approach Based on Decomposition for Continuous Optimization</i> | |
| | Yexing Li, Xinye Cai, Zhun Fan and Qingfu Zhang | 1124 |
| 5:20PM | <i>Multi-Objective Differential Evolution with Leadership Enhancement (MODEL)</i> | |
| | Farid Bourennani, Shahryar Rahnamayan and Greg F. Naterer | 1131 |
| 5:40PM | <i>On the Performance of Classification Algorithms for Learning Pareto-Dominance Relations</i> | |
| | Sunith Bandaru, Amos Ng and Kalyanmoy Deb | 1139 |

Wednesday, July 9, 1:30PM-3:30PM

WeE1-1 Multi-Objective Evolutionary Algorithms I, Chair: Kalyanmoy Deb, Room: 203A

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|--------|---|------|
| 1:30PM | <i>A Review of Hybrid Evolutionary Multiple Criteria Decision Making Methods</i> | |
| | Robin Purshouse, Kalyanmoy Deb, Maszatul M. Mansor, Sanaz Mostaghim and Rui Wang | 1147 |
| 1:50PM | <i>MOEA/D with Tabu Search for Multiobjective Permutation Flow Shop Scheduling Problems</i> | |
| | Ahmad Alhindi and Qingfu Zhang | 1155 |
| 2:10PM | <i>Online Objective Reduction for Many-Objective Optimization Problems</i> | |
| | Yiu-ming Cheung and Fangqing Gu | 1165 |
| 2:30PM | <i>Diversity Preservation with Hybrid Recombination for Evolutionary Multiobjective Optimization</i> | |
| | Sen Bong Gee and Kay Chen Tan | 1172 |
| 2:50PM | <i>An Evolutionary Approach to the Solution of Multi-Objective Min-Max Problems in Evidence-Based Robust Optimization</i> | |
| | Simone Alicino and Massimiliano Vasile | 1179 |
| 3:10PM | <i>Kriging Model Based Many-Objective Optimization with Efficient Calculation of Expected Hypervolume Improvement</i> | |
| | Chang Luo, Koji Shimoyama and Shigeru Obayashi | 1187 |

WeE1-2 Evolutionary Games and Multi-Agent Systems, Chair: Hussein Abbass, Room: 203B

1:30PM	<i>Effects of Ensemble Action Selection on the Evolution of Iterated Prisoner's Dilemma Game Strategies</i> Takahiko Sudo, Yusuke Nojima and Hisao Ishibuchi	1195
1:50PM	<i>The Structure of a Probabilistic 2-State Finite Transducer Representation for Prisoner's Dilemma</i> Jeffrey Tsang	1202
2:10PM	<i>Competitive Coevolutionary Training of Simple Soccer Agents from Zero Knowledge</i> Christiaan Scheepers and Andries Engelbrecht	1210
2:30PM	<i>Online Generation of Trajectories for Autonomous Vehicles Using a Multi-Agent System</i> Garrison Greenwood, Saber Elsayed, Ruhul Sarker and Hussein Abbass	1218
2:50PM	<i>A Cooperative Coevolutionary Approach to Multi-Robot Formation Control</i> Seung-Mok Lee and Hyun Myung	1225
3:10PM	<i>Graph Centrality Measures and the Robustness of Cooperation</i> Menglin Li and Colm O'Riordan	1232

Special Session: WeE1-3 Hybrid Evolutionary Computational Methods for Complex Optimization Problems, Chair: Kit Yan Chan, Room: 203C

1:30PM	<i>Non-Invasive Detection of Hypoglycemic Episodes in Type1 Diabetes Using Intelligent Hybrid Rough Neural System</i> Sai Ho Ling, Phyo Phyo San, Hak Keung Lam and Hung Nguyen	1238
1:50PM	<i>Image Deblurring Using a Hybrid Optimization Algorithm</i> Kit Yan Chan, N. Rajakaruna, C. Rathnayake and I. Murray	1243
2:10PM	<i>An Algorithm for Scalable Clustering: Ensemble Rapid Centroid Estimation</i> Mitchell Yuwono, Steven W. Su, Bruce D. Moulton, Ying Guo and Hung T. Nguyen	1250
2:30PM	<i>Evolutionary Regional Network Modeling for Efficient Engineering Optimization</i> Jyh-Cheng Yu and Zhi-Fu Liang	1258
2:50PM	<i>Quantum Bacterial Foraging Optimization Algorithm</i> Fei Li, Yuting Zhang and Haibo Li	1265
3:10PM	<i>A Cultural Algorithm for Spatial Forest Harvest Scheduling</i> Wan-Yu Liu and Chun-Cheng Lin	1273

Special Session: WeE1-4 Large Scale Global Optimization, Chair: Xiaodong Li, Room: 203D

1:30PM	<i>A Hybrid Adaptive Coevolutionary Differential Evolution Algorithm for Large-Scale Optimization</i> Sishi Ye, Guangming Dai and Lei Peng	1277
1:50PM	<i>Cooperative Co-Evolution with a New Decomposition Method for Large-Scale Optimization</i> Sedigheh Mahdavi, Mohammad Ebrahim Shiri and Shahryar Rahnamayan	1285
2:10PM	<i>Variable Grouping Based Differential Evolution Using an Auxiliary Function for Large Scale Global Optimization</i> Fei Wei, Yuping Wang and Tingting Zong	1293
2:30PM	<i>Solving Dynamic Double-Row Layout Problem via an Improved Simulated Annealing Algorithm</i> Shengli Wang, Xingquan Zuo and Xinchao Zhao	1299
2:50PM	<i>Effective Decomposition of Large-Scale Separable Continuous Functions for Cooperative Co-Evolutionary Algorithms</i> Mohammad Nabi Omidvar, Yi Mei and Xiaodong Li	1305
3:10PM	<i>Variable Neighborhood Decomposition for Large Scale Capacitated Arc Routing Problem</i> Yi Mei, Xiaodong Li and Xin Yao	1313

Wednesday, July 9, 3:30PM-6:00PM

Poster Session: PE3 Poster Session III, Chair: Tadahiko Murata, Room: Posters Area (Level 2

P501	<i>A New Dynamic Probabilistic Particle Swarm Optimization with Dynamic Random Population Topology</i> Qingjian Ni, Cen Cao and Xushan Yin	1321
P502	<i>An Adaptive PSO Based on Motivation Mechanism and Acceleration Restraint Operator</i> Jiangshao Gu and Xuanhua Shi	1328
P503	<i>The Enhanced Vector of Convergence for Particle Swarm Optimization Based on Constrict Factor</i> Wei Zhang, Yanan Gao and Chengxing Zhang	1337
P504	<i>Evolutionary Semi-Supervised Learning with Swarm Intelligence</i> Xiaohua Xu, Lin Lu, Ping He, Jie Ding and Yongsheng Ju	1343
P505	<i>A Fast Restarting Particle Swarm Optimizer</i> Junqi Zhang, Xiong Zhu, Wei Wang and Jing Yao	1351
P506	<i>Dimensions Cooperate by Euclidean Metric in Particle Swarm Optimization</i> Zezhou Li, Junqi Zhang, Wei Wang and Jing Yao	1359
P507	<i>Biclustering of Gene Expression Data Using Particle Swarm Optimization Integrated with Pattern-Driven Local Search</i> Yangyang Li, Xiaolong Tian, Licheng Jiao and Xiangrong Zhang	1367
P508	<i>Simulating the Coevolution of Language and Long-Term Memory</i> Lan Shuai, Zhen Wang and Tao Gong	1374
P509	<i>Evolutionary Clustering with Differential Evolution</i> Gang Chen, Wenjian Luo and Tao Zhu	1382
P510	<i>Smart Hybrid Genetic Algorithms in the Bandwidth Optimization of a PIFA Antenna</i> Mohammad Riyad Ameerudden and Harry Rughooputh	1390
P511	<i>Evolutionary Many-Objective Optimization by MO-NSGA-II with Enhanced Mating Selection</i> Shao-Wen Chen and Tsung-Che Chiang	1397
P512	<i>A Niching Two-Layered Differential Evolution with Self-Adaptive Control Parameters</i> Yongxin Luo, Sheng Huang and Jinglu Hu	1405
P513	<i>Application of the MOAA for the Optimization of CORAIL Assemblies for Nuclear Reactors</i> Valerio Lattarulo, Benjamin A. Lindley and Geoffrey T. Parks	1413
P514	<i>A Hybrid Approach Based on Genetic Algorithms for Solving the Clustered Vehicle Routing Problem</i> Petrica Pop and Camelia Chira	1421
P515	<i>Identifying and Exploiting the Scale of a Search Space in Differential Evolution</i> James Montgomery, Stephen Chen and Yasser Gonzalez-Fernandez	1427
P516	<i>Enhancing Relevance Re-Ranking Using Nature-Inspired Meta-Heuristic Optimization Algorithms</i> Amel Ksibi, Anis Ben Ammar and Chokri Ben Amar	1435
P517	<i>Can Deterministic Chaos Improve Differential Evolution for the Linear Ordering Problem?</i> Pavel Kromer, Ivan Zelinka and Vaclav Snasel	1443
P518	<i>Two Parameter Update Schemes for Recurrent Reinforcement Learning</i> Jin Zhang and Dietmar Maringer	1449
P519	<i>Differential Evolution Strategy Based on the Constraint of Fitness Values Classification</i> Zhihui Li, Zhigang Shang, Jane Jing Liang and Boyang Qu	1454
P520	<i>A Lagrangian and Surrogate Information Enhanced Tabu Search for the MMKP</i> Skander Htiouech and Sadok Bouamama	1461
P521	<i>Estimation of Distribution Algorithms Based Unmanned Aerial Vehicle Path Planner Using a New Coordinate</i> Peng Yang, Ke Tang and Jose Antonio Lozano	1469

P522	<i>An Uncultivated Wolf Pack Algorithm for High-Dimensional Functions and Its Application in Parameters Optimization of PID Controller</i>	
	Husheng Wu, Fengming Zhang and Lushan Wu	1477
P523	<i>On the Inference of Deterministic Chaos: Evolutionary Algorithm and Metabolic P System Approaches</i>	
	Luca Marchetti, Vincenzo Manca and Ivan Zelinka	1483
P524	<i>A New Method and Application for Controlling the Steady-State Probability Distributions of Probabilistic Boolean Networks</i>	
	Meng Yang, Rui Li and Tianguang Chu	1490
P525	<i>Evolutionary Community Detection in Social Networks</i>	
	Tiantian He and Keith C.C. Chan	1496
P526	<i>Experiments in Program Synthesis with Grammatical Evolution: A Focus on Integer Sorting</i>	
	Michael O'Neill, Miguel Nicolau and Alexandros Agapitos	1504
P527	<i>A Social-Evolutionary Approach to Compose a Similarity Function Used on Event Recommendation</i>	
	Luiz Mario Lustosa Pascoal, Celso Goncalves Camilo-Junior, Edjalma Queiroz Silva and Thiersen Couto Rosa	1512
P528	<i>Applying Evolutionary Computation for Evolving Ontologies</i>	
	Oliviu Matei, Diana Contrás and Petrica Pop	1520

Wednesday, July 9, 4:00PM-6:00PM

Special Session: WeE2-1 Evolutionary Computation in Dynamic and Uncertain Environments, Chair: Michalis Mavrovouniotis, Room: 203A

4:00PM	<i>Find Robust Solutions Over Time by Two-Layer Multi-Objective Optimization Method</i>	
	Yinan Guo, Meirong Chen, Haobo Fu and Yun Liu	1528
4:20PM	<i>Niching-Based Self-adaptive Ensemble DE with MMTS for Solving Dynamic Optimization Problems</i>	
	Sheldon Hui and Ponnuthurai Nagaratnam Suganthan	1536
4:40PM	<i>Interactive and Non-Interactive Hybrid Immigrants Schemes for Ant Algorithms in Dynamic Environments</i>	
	Michalis Mavrovouniotis and Shengxiang Yang	1542
5:00PM	<i>What Are Dynamic Optimization Problems?</i>	
	Haobo Fu, Peter Lewis, Bernhard Sendhoff, Ke Tang and Xin Yao	1550
5:20PM	<i>A Dynamic History-Driven Evolutionary Algorithm</i>	
	Chi Kin Chow and Shiu Yin Yuen	1558
5:40PM	<i>Adaptive Particle Swarm Optimization with Variable Relocation for Dynamic Optimization Problems</i>	
	Zhi-Hui Zhan and Jun Zhang	1565

Special Session: WeE2-2 Intelligent Design for Reliable Cloud Computing, Chair: Wei-Chang Yeh, Room: 203B

4:00PM	<i>Macroscopic Indeterminacy Swarm Optimization (MISO) Algorithm for Real-Parameter Search</i>	
	Po-Chun Chang and Xiangjian He	1571
4:20PM	<i>A Cooperative Honey Bee Mating Algorithm and Its Application in Multi-Threshold Image Segmentation</i>	
	Yunzhi Jiang, Zhenlun Yang, Zhifeng Hao, Yinglong Wang and Huojiao He	1579
4:40PM	<i>A RFID Network Design Methodology for Decision Problem in Health Care</i>	
	Chun-Hua Chou, Huang Chia-Ling and Po-Chun Chang	1586
5:00PM	<i>Pareto Simplified Swarm Optimization for Grid-Computing Reliability and Service Makspan in Grid-RMS</i>	
	Wei Shang-Chia, Yeh Wei-Chang and Yen Tso-Jung	1593
5:20PM	<i>A New Grouping Genetic Algorithm for the MapReduce Placement Problem in Cloud Computing</i>	
	Xiaoyong Xu and Maolin Tang	1601

5:40PM	<i>Composite SaaS Scaling in Cloud Computing Using a Hybrid Genetic Algorithm</i> Zeratul Mohd Yusoh and Maolin Tang	1609
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Special Session: WeE2-3 Single Objective Numerical Optimization II, Chair: Jane Jing Liang and Boyang Qu, Room: 203C

4:00PM	<i>A Differential Evolution with Replacement Strategy for Real-Parameter Numerical Optimization</i> Changjian Xu, Han Huang and ShuJin Ye	1617
4:20PM	<i>Evaluating the Mean-Variance Mapping Optimization on the IEEE-CEC 2014 Test Suite</i> Istvan Erlich, Jose L. Rueda and Sebastian Wildenhues	1625
4:40PM	<i>Influence of Regions on the Memetic Algorithm for the Special Session on Real-Parameter Single Objective Optimisation</i> Daniel Molina, Benjamin Lacroix and Francisco Herrera	1633
5:00PM	<i>Analysis and Classification of Optimisation Benchmark Functions and Benchmark Suites</i> Robert Garden and Andries Engelbrecht	1641
5:20PM	<i>Testing United Multi-Operator Evolutionary Algorithms on the CEC2014 Real-Parameter Numerical Optimization</i> Saber Elsayed, Ruhul Sarker, Daryl Essam and Noha Hamza	1650
5:40PM	<i>Improving the Search Performance of SHADE Using Linear Population Size Reduction</i> Ryoji Tanabe and Alex Fukunaga	1658

WeE2-4 Learning Classifier Systems, Chair: Hisao Ishibuchi, Room: 203D

4:00PM	<i>Towards Better Generalization in Pittsburgh Learning Classifier Systems</i> Shubhra Kanti Karmaker Santu, Md. Mustafizur Rahman, Md. Monirul Islam and Kazuyuki Murase	1666
4:20PM	<i>GP-Based Kernel Evolution for L2-Regularization Networks</i> Simone Scardapane, Danilo Comminiello, Michele Scarpiniti and Aurelio Uncini	1674
4:40PM	<i>Generalized Classifier System: Evolving Classifiers with Cyclic Conditions</i> Xianneng Li, Wen He and Kotaro Hirasawa	1682
5:00PM	<i>Applying LCS to Affective Images Classification in Spatial-Frequency Domain</i> Po-Ming Lee and Tzu-Chien Hsiao	1690
5:20PM	<i>A Novel Genetic Algorithm Approach for Simultaneous Feature and Classifier Selection in Multi Classifier System</i> Tien Thanh Nguyen, Alan Wee-Chung Liew, Minh Toan Tran, Xuan Cuong Pham and Mai Phuong Nguyen	1698
5:40PM	<i>Lookup Table Partial Reconfiguration for an Evolvable Hardware Classifier System</i> Kyrre Glette and Paul Kaufmann	1706

Thursday, July 10, 1:30PM-3:30PM

ThE1-1 Ant Colony Optimization, Chair: Andries Engelbrecht, Room: 203A

1:30PM	<i>Ant Colony Optimization and Hypergraph Covering Problems</i> Ankit Pat	1714
1:50PM	<i>Confidence-Based Ant Random Walks</i> Ping He, Ling Lu, Xiaohua Xu, Kanwen Li, Heng Qian and Wei Zhang	1721
2:10PM	<i>The Coupled EigenAnt Algorithm for Shortest Path Problems</i> Eugenius Kaszkurewicz, Amit Bhaya, Jayadeva Jayadeva and Joao Marcos Meirelles da Silva	1729
2:30PM	<i>Accelerating Ant Colony Optimization-Based Edge Detection on the GPU Using CUDA</i> Laurence Dawson and Iain Stewart	1736
2:50PM	<i>Absorption in Model-Based Search Algorithms for Combinatorial Optimization</i> Zijun Wu and Michael Kolonko	1744

- 3:10PM *Elitism-Based Immigrants for Ant Colony Optimization in Dynamic Environments: Adapting the Replacement Rate*
Michalis Mavrovouniotis and Shengxiang Yang 1752

ThE1-2 Opposition-Based Learning and Differential Evolution, Chair: Shahryar Rahnamayan, Room: 203B

- 1:30PM *Gaussian Adaptation Based Parameter Adaptation for Differential Evolution*
Rammohan Mallipeddi, Guohua Wu, Minh Lee and Ponnuthurai Nagarathnam Suganthan 1760
- 1:50PM *Toward Using Type-II Opposition in Optimization*
Hojjat Salehinejad, Shahryar Rahnamayan and Hamid R. Tizhoosh 1768
- 2:10PM *Improved Differential Evolution with Adaptive Opposition Strategy*
Huichao Liu, Zhijian Wu, Hui Wang, Shahryar Rahnamayan and Changshou Deng 1776
- 2:30PM *Differential Evolution Assisted by a Surrogate Model for Bilevel Programming Problems*
Jaqueline Angelo, Eduardo Krempser and Helio Barbosa 1784
- 2:50PM *Adaptive Inflationary Differential Evolution*
Edmondo Minisci and Massimiliano Vasile 1792
- 3:10PM *Computing Opposition by Involving Entire Population*
Shahryar Rahnamayan, Jude Jesuthasan, Farid Bourennani, Hojjat Salehinejad and Greg F. Naterer 1800

ThE1-3 Genetic Programming, Chair: Michael O'Neill, Room: 203C

- 1:30PM *Adaptive Genetic Network Programming*
Xianneng Li, Wen He and Kotaro Hirasawa 1808
- 1:50PM *Evolving Exact Integer Algorithms with Genetic Programming*
Thomas Weise, Mingxu Wan, Ke Tang and Xin Yao 1816
- 2:10PM *A Sequential Genetic Programming Method to Learn Forward Construction Heuristics for Order Acceptance and Scheduling*
Su Nguyen, Mengjie Zhang and Mark Johnston 1824
- 2:30PM *Anomaly Detection in Crowded Scenes Using Genetic Programming*
Cheng Xie and Lin Shang 1832
- 2:50PM *A Genetic Programming Approach to Distributed QoS-Aware Web Service Composition*
Yang Yu, Hui Ma and Mengjie Zhang 1840
- 3:10PM *Generating Lambda Term Individuals in Typed Genetic Programming Using Forgetful A**
Tomas Kren and Roman Neruda 1847

ThE1-4 Heuristics, Metaheuristics and Hyper-heuristics I, Chair: Graham Kendall, Room: 203D

- 1:30PM *AIRP: A Heuristic Algorithm for Solving the Unrelated Parallel Machine Scheduling Problem*
Luciano Perdigao Cota, Matheus Nohra Haddad, Marcone Jamilson Freitas Souza and Vitor Nazario Coelho 1855
- 1:50PM *Heuristic Space Diversity Management in a Meta-Hyper-Heuristic Framework*
Jacomine Grobler, Andries Engelbrecht, Graham Kendall and V.S.S. Yadavalli 1863
- 2:10PM *An Improved Bilevel Evolutionary Algorithm Based on Quadratic Approximations*
Ankur Sinha, Pekka Malo and Kalyanmoy Deb 1870
- 2:30PM *A Cooperative Approach between Metaheuristic and Branch-and-Price for the Team Orienteering Problem with Time Windows*
Liangjun Ke 1878
- 2:50PM *Hyper-Heuristics with Penalty Parameter Adaptation for Constrained Optimization*
Yu-Jun Zheng, Bei Zhang and Zhen Cheng 1883
- 3:10PM *Control of Numeric and Symbolic Parameters with a Hybrid Scheme Based on Fuzzy Logic and Hyper-heuristics*
Eduardo Segredo, Carlos Segura and Coromoto Leon 1890

Industrial Session: ThE1-5 Computational Intelligence on Predictive Maintenance and Optimization, Chair: Shiji Song and Christoph Hametner, Room: 303

1:30PM	<i>A Decomposition-Based Algorithm for Dynamic Economic Dispatch Problems</i> Eman Sayed, Daryl Essam, Ruhul Sarker and Saber Elsayed	1898
1:50PM	<i>Minimizing Makespan for a No-Wait Flowshop Using Tabu Mechanism Improved Iterated Greedy Algorithm</i> Jianya Ding, Shiji Song, Rui Zhang and Cheng Wu	1906
2:10PM	<i>Black-Hole PSO and SNO for Electromagnetic Optimization</i> Matteo Ruello, Francesco Grimaccia, Marco Mussetta and Riccardo E. Zich	1912
2:30PM	<i>An Improved Ant Colony Algorithm for Winner Determination in Multi-Attribute Combinatorial Reverse Auction</i> Xiaohu Qian, Min Huang, Taiguang Gao and Xingwei Wang	1917
2:50PM	<i>Soft Computing Techniques Based Optimal Tuning of Virtual Feedback PID Controller for Chemical Tank Reactor</i> Manikandan Pandiyan	1922

Thursday, July 10, 3:30PM-6:00PM

Poster Session: PE4 Poster Session IV, Chair: Tadahiko Murata, Room: Posters Area (Level 2)

P701	<i>Dynamic Multi-Objective Optimization Using Charged Vector Evaluated Particle Swarm Optimization</i> Kyle Harrison, Beatrice Ombuki-Berman and Andries Engelbrecht	1929
P702	<i>A New Self-Adaptive PSO Based on the Identification of Planar Regions</i> Eddy Mesa, Juan David Velasquez and Patricia Jaramillo	1937
P703	<i>PSO-Based Evacuation Simulation Framework</i> Pei-Chuan Tsai, Chih-Ming Chen and Ying-ping Chen	1944
P704	<i>PSO-Based Update Memory for Improved Harmony Search Algorithm to the Evolution of FBBFNT' Parameters</i> Souhir Bouaziz, Adel M. Alimi and Ajith Abraham	1951
P705	<i>Fuzzy Multiobjective Differential Evolution Using Performance Metrics Feedback</i> Chatkaew Jariyatantiwait and Gary Yen	1959
P706	<i>Multiobjective Evolutionary Algorithm Portfolio: Choosing Suitable Algorithm for Multiobjective Optimization Problem</i> Shiu Yin Yuen and Xin Zhang	1967
P707	<i>A Novel Algorithm for Many-Objective Dimension Reductions: Pareto-PCA-NSGA-II</i> Ronghua Shang, Kun Zhang and Licheng Jiao	1974
P708	<i>An Experimental Analysis of Evolutionary Algorithms for the Three-Objective Oil Derivatives Distribution Problem</i> Thatiana Souza, Elizabeth Goldberg and Marco Goldberg	1982
P709	<i>A New Strategy for Finding Good Local Guides in MOPSO</i> Man Fai Leung, Sin Chun Ng, Chi Chung Cheung and Andrew K Lui	1990
P710	<i>An Inter-Molecular Adaptive Collision Scheme for Chemical Reaction Optimization</i> James J.Q. Yu, Victor O.K. Li and Albert Y.S. Lam	1998
P711	<i>Analysis of Constraint Handling Methods for the Gravitational Search Algorithm</i> Daniel Poole, Christian Allen and Thomas Rendall	2005
P712	<i>Distributed Wireless Sensor Scheduling for Multi-Target Tracking Based on Matrix-Coded Parallel Genetic Algorithm</i> Zixing Cai, Sha Wen and Lijue Liu	2013
P713	<i>Effect of Pseudo Gradient on Differential Evolutionary for Global Numerical Optimization</i> Jinliang Ding, Lipeng Chen, Qingguang Xie, Tianyou Chai and Xiuping Zheng	2019

P714	<i>Protein Folding Estimation Using Paired-Bacteria Optimizer</i>	2027
	Mengshi Li, Tianyao Ji, Peter Wu, Shan He and Qinghua Wu	
P715	<i>A Self-Adaptive Group Search Optimizer with Elitist Strategy</i>	2033
	Xiang-wei Zheng, Dian-jie Lu and Zhen-hua Chen	
P716	<i>Optimization Based on Adaptive Hinging Hyperplanes and Genetic Algorithm</i>	2040
	Jun Xu, Xiangming Xi and Shuning Wang	
P717	<i>Combining Multipopulation Evolutionary Algorithms with Memory for Dynamic Optimization Problems</i>	2047
	Tao Zhu, Wenjian Luo and Lihua Yue	
P718	<i>Micro-Differential Evolution with Vectorized Random Mutation Factor</i>	2055
	Hojjat Salehinejad, Shahryar Rahnamayan and Hamid R. Tizhoosh	
P719	<i>Application of BPSO with GA in Model-Based Fault Diagnosis of Traction Substation</i>	2063
	Song Gao, Zhigang Liu, Chenxi Dai and Xiao Geng	
P720	<i>Performance of AI Algorithms for Mining Meaningful Roles</i>	2070
	Xuanni Du and Xiaolin Chang	
P721	<i>Using Estimation of Distribution Algorithm to Coordinate Decentralized Learning Automata for Meta-Task Scheduling</i>	2077
	Jie Li and Junqi Zhang	
P722	<i>A Modular Approach for Query Spotting in Document Images and Its Optimization Using Genetic Algorithms</i>	2085
	Housseem Chatbri, Paul Kwan and Keisuke Kameyama	
P723	<i>An Improved Genetic Algorithm for Dynamic Shortest Path Problems</i>	2093
	Xuezhi Zhu, Wenjian Luo and Tao Zhu	
P724	<i>A Novel Genetic Algorithm Considering Measures and Phrases for Generating Melody</i>	2101
	Chia-Lin Wu, Chien-Hung Liu and Chuan-Kang Ting	
P725	<i>Optimal Sizing of DGs and Storage for Microgrid with Interruptible Load Using Improved NSGA-II</i>	2108
	Zhe Shi, Yonggang Peng and Wei Wei	
P726	<i>Lion Algorithm for Standard and Large Scale Bilinear System Identification: A Global Optimization Based on Lion's Social Behavior</i>	2116
	B. R. Rajakumar	
P727	<i>Intelligent Search Optimized Edge Potential Function (EPF) Approach to Synthetic Aperture Radar (SAR) Scene Matching</i>	2124
	Yifei Wang and Jihao Yin	

Thursday, July 10, 4:00PM-6:00PM

ThE2-1 Multi-Objective Evolutionary Algorithms II, Chair: Robin Purshouse, Room: 203A

4:00PM	<i>A Replacement Strategy for Balancing Convergence and Diversity in MOEA/D</i>	2132
	Zhenkun Wang, Qingfu Zhang, Maoguo Gong and Aimin Zhou	
4:20PM	<i>A Test Problem for Visual Investigation of High-Dimensional Multi-Objective Search</i>	2140
	Miqing Li, Shengxiang Yang and Xiaohui Liu	
4:40PM	<i>MD-MOEA : A New MOEA Based on the Maximin Fitness Function and Euclidean Distances between Solutions</i>	2148
	Adriana Menchaca-Mendez and Carlos A. Coello Coello	
5:00PM	<i>Multiobjective Test Problems with Complicated Pareto Fronts: Difficulties in Degeneracy</i>	2156
	Hui Li, Qingfu Zhang and Jingda Deng	
5:20PM	<i>A Comparison Study of Binary Multi-Objective Particle Swarm Optimization Approaches for Test Case Selection</i>	2164
	Luciano Souza, Ricardo Prudencio and Flavia Barros	
5:40PM	<i>The Effect of Different Local Search Algorithms on the Performance of Multi-Objective Optimizers</i>	2172
	Martin Pilat and Roman Neruda	

ThE2-2 Cultural Algorithms and Knowledge Extraction in Evolutionary Algorithms, Chair: Robert G. Reynolds, Room: 203B

4:00PM	<i>Cultural Algorithms Applied to the Evolution of Robotic Soccer Team Tactics: A Novel Perspective</i> Mostafa Ali, Abdulmalik Morghem, Jafar AlBadarneh, Rami Al-Gharaibeh, Ponnuthurai Nagaratnam Suganthan and Robert G. Reynolds	2180
4:20PM	<i>Cultural Learning for Multi-Agent System and Its Application to Fault Management</i> Teran Juan, Aguilar Jose and Cerrada Mariela	2188
4:40PM	<i>Analyzing Prehistoric Hunter Behavior with Cultural Algorithms</i> Samuel Stanley, Thomas Palazzolo and David Warnke	2196
5:00PM	<i>GSCA: Reconstructing Biological Pathway Topologies Using a Cultural Algorithms Approach</i> Thair Judeh, Thaer Jayyousi, Lipi Acharya, Robert G. Reynolds and Dongxiao Zhu	2206
5:20PM	<i>A Social Metrics Based Process Model on Complex Social System</i> Xiangdong Che and Robert G. Reynolds	2214
5:40PM	<i>Online Knowledge-Based Evolutionary Multi-Objective Optimization</i> Bin Zhang, Kamran Shafi and Hussein Abbass	2222

Special Session: ThE2-3 Single Objective Numerical Optimization III, Chair: Ponnuthurai Nagaratnam Suganthan and Qin Chen, Room: 203C

4:00PM	<i>Controlled Restart in Differential Evolution Applied to CEC2014 Benchmark Functions</i> Radka Polakova, Josef Tvrdik and Petr Bujok	2230
4:20PM	<i>Non-Uniform Mapping in Real-Coded Genetic Algorithms</i> Yashesh Dhebar, Kalyanmoy Deb and Sunith Bandaru	2237
4:40PM	<i>Bandits Attack Function Optimization</i> Preux Philippe, Munos Remi and Valko Michal	2245
5:00PM	<i>Differential Evolution with Rotation-Invariant Mutation and Competing-Strategies Adaptation</i> Petr Bujok, Josef Tvrdik and Radka Polakova	2253
5:20PM	<i>Partial Opposition-Based Adaptive Differential Evolution Algorithms: Evaluation on the CEC 2014 Benchmark Set for Real-Parameter Optimization</i> Zhongyi Hu, Yukun Bao and Tao Xiong	2259
5:40PM	<i>Memetic Differential Evolution Based on Fitness Euclidean-Distance Ratio</i> Jane Jing Liang, Boyang Qu, H. Song and Z. G. Shang	2266

ThE2-4 Music, Art, Creativity, Games and Multi-Agent Systems, Chair: Francisco Fernández de Vega, Room: 203D

4:00PM	<i>A Self Organising Map Based Method for Understanding Features Associated with High Aesthetic Value Evolved Abstract Images</i> Allan Campbell, Vic Ciesielski and Karen Trist	2274
4:20PM	<i>When Artists Met Evospace-i</i> Francisco Fernandez de Vega, Mario Garcia-Valdez, Lilian Navarro, Cayetano Cruz, Patricia Hernandez, Tania Gallego and J. Vicente Albarran	2282
4:40PM	<i>Parallelization of Information Set Monte Carlo Tree Search</i> Nicholas Sephton, Peter Cowling, Edward Powley, Daniel Whitehouse and Nicholas Slaven	2290
5:00PM	<i>Comparing Crossover Operators in Neuro-Evolution with Crowd Simulations</i> Sunrise Wang, James Gain and Geoff Nitschke	2298
5:20PM	<i>Genotype Coding, Diversity, and Dynamic Environments: A Study on an Evolutionary Neural Network Multi-Agent System</i> Jaime Davila	2306
5:40PM	<i>The 2013 Multi-Objective Physical Travelling Salesman Problem Competition</i> Diego Perez, Edward Powley, Daniel Whitehouse, Spyridon Samothrakis, Simon Lucas and Peter Cowling	2314

ThE2-5 Real-World Applications I, Chair: Maoguo Gong and Qing Cai, Room: 303

4:00PM	<i>Vessel Track Correlation and Association Using Fuzzy Logic and Echo State Networks</i> Hang Shao, Rami Abielmona, Rafael Falcon and Nathalie Japkowicz	2322
4:20PM	<i>Automatic Target Recognition Using Multiple-Aspect Sonar Images</i> Xiaoguang Wang, Xuan Liu, Nathalie Japkowicz and Stan Matwin	2330
4:40PM	<i>Base Station Switching Problem for Green Cellular Networks with Social Spider Algorithm</i> James J.Q. Yu and Victor O.K. Li	2338
5:00PM	<i>Deployment Optimization of Near Space Airships Based on MOEA/D with Local Search</i> Zhao Wang, Maoguo Gong, Qing Cai, Lijia Ma and Licheng Jiao	2345
5:20PM	<i>Novel Traffic Signal Timing Adjustment Strategy Based on Genetic Algorithm</i> Hsiao-Yu Tung, Wei-Chiu Ma and Tian-Li Yu	2353
5:40PM	<i>Encodings for Evolutionary Algorithms in Smart Buildings with Energy Management Systems</i> Ingo Mauser, Marita Dorscheid, Florian Allerding and Hartmut Schmeck	2361

Friday, July 11, 8:10AM-10:10AM**FrE1-1 Differential Evolution, Chair: Carlos Segura, Room: 203A**

8:10AM	<i>Evolving Artificial Datasets to Improve Interpretable Classifiers</i> Michael Mayo and Quan Sun	2367
8:30AM	<i>Differential Evolution in Constrained Sampling Problems</i> Gervasio Varela, Pilar Caamano, Felix Orjales, Alvaro Deibe, Fernando Lopez-Pena and Richard Duro	2375
8:50AM	<i>Unsupervised Clustering and Multi-Optima Evolutionary Search</i> Vassilis Plagianakos	2383
9:10AM	<i>A Novel Differential Evolution (DE) Algorithm for Multi-Objective Optimization</i> Xin Qiu, Jianxin Xu and Kay Chen Tan	2391
9:30AM	<i>Differential Evolution Algorithm Applied to Non-Stationary Bandit Problem</i> David L. St-Pierre and Jialin Liu	2397
9:50AM	<i>Effects of Population Initialization on Differential Evolution for Large Scale Optimization</i> Borhan Kazimipour, Xiaodong Li and A. K. Qin	2404

FrE1-2 Process Mining and Data Mining, Chair: Andrea Burattin, Room: 203B

8:10AM	<i>Declarative Process Discovery with Evolutionary Computing</i> Seppe vanden Broucke, Jan Vanthienen and Bart Baesens	2412
8:30AM	<i>Control-Flow Discovery from Event Streams</i> Andrea Burattin, Alessandro Sperduti and Wil M. P. van der Aalst	2420
8:50AM	<i>Perturbing Event Logs to Identify Cost Reduction Opportunities: A Genetic Algorithm-Based Approach</i> W.Z. Low, J. De Weerd, M.T. Wynn, A.H.M. ter Hofstede, Wil M. P. van der Aalst and Seppe vanden Broucke	2428
9:10AM	<i>A Clustering-Based Approach for Exploring Sequences of Compiler Optimizations</i> Luiz Martins, Ricardo Nobre, Alexandre Delbem, Eduardo Marques and Joao Cardoso	2436
9:30AM	<i>A Study on Non-Correspondence in Spread between Objective Space and Design Variable Space for Trajectory Designing Optimization Problem</i> Toru Yoshida and Tomohiro Yoshikawa	2444
9:50AM	<i>Ensemble Bayesian Model Averaging in Genetic Programming</i> Alexandros Agapitos, Michael O'Neill and Anthony Brabazon	2451

FrE1-3 Estimation of Distribution Algorithms and Machine Learning, Chair: Jose Antonio Lozano, Room: 203C

8:10AM	<i>Extending Distance-Based Ranking Models in Estimation of Distribution Algorithms</i> Josu Ceberio, Ekhine Irurozki, Alexander Mendiburu and Jose Antonio Lozano	2459
8:30AM	<i>Quantum-Inspired Evolutionary Algorithm with Linkage Learning</i> Bo Wang, Hua Xu and Yuan Yuan	2467
8:50AM	<i>Investigation on Efficiency of Optimal Mixing on Various Linkage Sets</i> Shih-Ming Wang, Yu-Fan Tung and Tian-Li Yu	2475
9:10AM	<i>A Locally Weighted Metamodel for Pre-Selection in Evolutionary Optimization</i> QiuXiao Liao, Aimin Zhou and Guixu Zhang	2483
9:30AM	<i>Use Model Building on Discretization Algorithms for Discrete EDAs to Work on Real-Valued Problems</i> Yi-En Su and Tian-Li Yu	2491
9:50AM	<i>Transformation of Input Space Using Statistical Moments: EA-Based Approach</i> Ahmed Kattan, Michael Kampouridis, Yew-Soon Ong and Khalid Mehamdi	2499

FrE1-4 Evolutionary Computation Theory and Parameter Optimization, Chair: Yaochu Jin, Room: 203D

8:10AM	<i>A Progressive Random Walk Algorithm for Sampling Continuous Fitness Landscapes</i> Katherine Malan and Andries Engelbrecht	2507
8:30AM	<i>Runtime Analysis of Selection Hyper-Heuristics with Classical Learning Mechanisms</i> Fawaz Alanazi and Per Kristian Lehre	2515
8:50AM	<i>Particle Swarm Convergence: An Empirical Investigation</i> Christopher Cleghorn and Andries Engelbrecht	2524
9:10AM	<i>Phase Transition Particle Swarm Optimization</i> Ji Ma, Junqi Zhang, Wei Wang and Jing Yao	2531
9:30AM	<i>Fitness Level Based Adaptive Operator Selection for Cutting Stock Problems with Contiguity</i> Kai Zhang, Thomas Weise and Jinlong Li	2539
9:50AM	<i>Parameter Optimization by Means of Statistical Quality Guides in F-Race</i> Ronald Klazar and Andries Engelbrecht	2547

FrE1-5 Multimodal Optimization and Population Initialization, Chair: Jonathan Fieldsend, Room: 303

8:10AM	<i>A Globally Diversified Island Model PGA for Multimodal Optimization</i> Lifeng Zhang and Rong He	2553
8:30AM	<i>A Topological Niching Covariance Matrix Adaptation for Multimodal Optimization</i> Marcio Pereira, Mauro Roisenberg and Guenther Neto	2562
8:50AM	<i>Balancing the Exploration and Exploitation in an Adaptive Diversity Guided Genetic Algorithm</i> Fateme Vafaee, Gyorgy Turan, Peter Nelson and Tanya Berger-Wolf	2570
9:10AM	<i>Compensate Information from Multimodal Dynamic Landscapes: An Anti-Pathology Cooperative Coevolutionary Algorithm</i> Xingguang Peng, Xiaokang Lei and Kun Liu	2578
9:30AM	<i>A Review of Population Initialization Techniques for Evolutionary Algorithms</i> Borhan Kazimipour, Xiaodong Li and A. K. Qin	2585
9:50AM	<i>Running Up Those Hills: Multi-Modal Search with the Niching Migratory Multi-Swarm Optimiser</i> Jonathan Fieldsend	2593

Friday, July 11, 10:30AM-12:30PM**FrE2-1 Multi-Objective Evolutionary Algorithms III, Chair: Slawomir Wesolkowski, Room: 203A**

10:30AM	<i>Multi-Scenario Optimization Using Multi-Criterion Methods: A Case Study on Byzantine Agreement Problem</i>	
	Ling Zhu, Kalyanmoy Deb and Sandeep Kulkarni	2601
10:50AM	<i>Multi-Objective Evolutionary Recurrent Neural Network Ensemble for Prediction of Computational Fluid Dynamic Simulations</i>	
	Christopher Smith, John Doherty and Yaochu Jin	2609
11:10AM	<i>TraDE: Training Device Selection Via Multi-Objective Optimization</i>	
	Slawomir Wesolkowski, Nevena Francetic and Stuart Grant	2617
11:30AM	<i>Multi-view Clustering of Web Documents Using Multi-Objective Genetic Algorithm</i>	
	Wahid Abdul, Xiaoying Gao and Andreae Peter	2625
11:50AM	<i>Visual Examination of the Behavior of EMO Algorithms for Many-Objective Optimization with Many Decision Variables</i>	
	Hiroyuki Masuda, Yusuke Nojima and Hisao Ishibuchi	2633
12:10PM	<i>Sensitivity Analysis of Parallel Cell Coordinate System in Many-Objective Particle Swarm Optimization</i>	
	Wang Hu, Gary Yen and Xin Zhang	2641

FrE2-2 Numerical Optimization, Chair: Joao M. Sousa, Room: 203B

10:30AM	<i>Real-Parameter Optimization with OptBees</i>	
	Renato Maia, Leandro de Castro and Walimir Caminhas	2649
10:50AM	<i>A Levy Flight-Based Hybrid Artificial Bee Colony Algorithm for Solving Numerical Optimization Problems</i>	
	Hai Shan, Toshiyuki Yasuda and Kazuhiro Ohkura	2656
11:10AM	<i>Comparison of Random Number Generators in Particle Swarm Optimization Algorithm</i>	
	Ke Ding and Ying Tan	2664
11:30AM	<i>A Evolutionary Algorithm Based on Covariance Matrix Learning and Searching Preference for Solving CEC 2014 Benchmark Problems</i>	
	Lei Chen, Hai-Lin Liu, Zhe Zheng and Shengli Xie	2672
11:50AM	<i>Optimization of Power Flow with Energy Storage Using Genetic Algorithms</i>	
	Vitor Leite, Carlos Silva, Joao Claro and Joao M. Sousa	2678
12:10PM	<i>A New Self-Learning TLBO Algorithm for RBF Neural Modelling of Batteries in Electric Vehicles</i>	
	Zhile Yang, Kang Li, Aoife Foley and Cheng Zhang	2685

FrE2-3 Coevolution and Collective Behavior, Chair: Grant Dick, Room: 203C

10:30AM	<i>Codynamic Fitness Landscapes of Coevolutionary Minimal Substrates</i>	
	Hendrik Richter	2692
10:50AM	<i>Model Representation and Cooperative Coevolution for Finite-State Machine Evolution</i>	
	Grant Dick and Xin Yao	2700
11:10AM	<i>Evolutionary Path Planning of a Data Mule in Wireless Sensor Network by Using Shortcuts</i>	
	Shao-You Wu and Jing-Sin Liu	2708
11:30AM	<i>Coevolutionary Genetic Algorithm for Variable Ordering in CSPs</i>	
	Muhammad Rezaul Karim and Malek Mouhoub	2716
11:50AM	<i>A Co-Evolutionary Multi-Objective Approach for a K-Adaptive Graph-Based Clustering Algorithm</i>	
	Hector D. Menendez, David F. Barrero and David Camacho	2724
12:10PM	<i>Evolving Multiplication as Emergent Behavior in Cellular Automata Using Conditionally Matching Rules</i>	
	Michal Bidlo	2732

FrE2-4 Biometrics, Bioinformatics and Biomedical Applications, Chair: Mengjie Zhang, Room: 203D

10:30AM	<i>Combining Graph Connectivity and Genetic Clustering to Improve Biomedical Summarization</i>	
	Hector D. Menendez, Laura Plaza and David Camacho	2740
10:50AM	<i>Selecting the Optimal EEG Electrode Positions for a Cognitive Task Using an Artificial Bee Colony with Adaptive Scale Factor Optimization Algorithm</i>	
	Shreyasi Datta, Pratyusha Rakshit, Amit Konar and Atulya Nagar	2748
11:10AM	<i>A New GP-Based Wrapper Feature Construction Approach to Classification and Biomarker Identification</i>	
	Soha Ahmed, Mengjie Zhang and Lifeng Peng	2756
11:30AM	<i>An Examination of Synchronisation in Artificial Gene Regulatory Networks</i>	
	Jonathan Byrne, Miguel Nicolau, Anthony Brabazon and Michael O'Neill	2764
11:50AM	<i>Memetic Algorithm for Sorting Unsigned Permutations by Reversals</i>	
	Jose Luis Soncco-Alvarez and Mauricio Ayala-Rincon	2770
12:10PM	<i>Evolved Neural Networks for HIV-1 Co-Receptor Identification</i>	
	Gary Fogel, Enoch Liu, Marco Salemi, Susanna Lamers and Michael McGrath	2778

FrE2-5 Robotics and Engineering Applications, Chair: Amiram Moshaiov, Room: 303

10:30AM	<i>Analysis of Fitness Noise in Particle Swarm Optimization: From Robotic Learning to Benchmark Functions</i>	
	Ezequiel Di Mario, Inaki Navarro and Alcherio Martinoli	2785
10:50AM	<i>A Comparison of Neural Networks and Physics Models as Motion Simulators for Simple Robotic Evolution</i>	
	Christiaan Pretorius, Mathys du Plessis and John Gonsalves	2793
11:10AM	<i>Family Bootstrapping: A Genetic Transfer Learning Approach for Onsetting the Evolution for a Set of Related Robotic Tasks</i>	
	Amiram Moshaiov and Amir Tal	2801
11:30AM	<i>Is MO-CMA-ES Superior to NSGA-II for the Evolution of Multi-Objective Neuro-Controllers?</i>	
	Amiram Moshaiov and Omer Abramovich	2809
11:50AM	<i>Optimization of the Picking Sequence of an Automated Storage and Retrieval System (AS/RS)</i>	
	Rolf Dornberger, Thomas Hanne, Remo Ryter and Stauffer Michael	2817
12:10PM	<i>Practical Application of an Evolutionary Algorithm for the Design and Construction of a Six-Inch Submarine</i>	
	Khairul Alam, Tapabrata Ray and Sreenatha G. Anavatti	2825

Friday, July 11, 1:30PM-3:30P

FrE3-1 Large-Scale Problems and Real-World Applications, Chair: Ke Tang, Room: 203A

1:30PM	<i>A Novel Hybridization of Opposition-Based Learning and Cooperative Co-Evolutionary for Large-Scale Optimization</i>	
	Borhan Kazimipour, Mohammad Nabi Omidvar, Xiaodong Li and A. K. Qin	2833
1:50PM	<i>Optimising Large Scale Public Transport Network Design Problems Using Mixed-Mode Parallel Multi-Objective Evolutionary Algorithms</i>	
	Ian Cooper, Matthew John, Rhydian Lewis, Andrew Olden and Christine Mumford	2841
2:10PM	<i>Many-Objective Evolutionary Computation for Optimization of Separated-Flow Control Using a DBD Plasma Actuator</i>	
	Takeshi Watanabe, Tomoaki Tatsukawa, Antonio Lopez Jaimes, Hikaru Aono, Taku Nonomura, Akira Oyama and Kozo Fujii	2849
2:30PM	<i>A Hybrid EA for High-Dimensional Subspace Clustering Problem</i>	
	Lin Lin, Gen Mitsuo and Liang Yan	2855

- 2:50PM *A Simplified Glowworm Swarm Optimization Algorithm*
Ming-yu Du, Xiu-juan Lei and Zhen-qiang Wu 2861
- 3:10PM *An Improved Two Archive Algorithm for Many-Objective Optimization*
Bingdong Li, Jinlong Li, Ke Tang and Xin Yao 2869

FrE3-2 Evolvable Hardware and Software and Genetic Programming, Chair: Andy Song, Room: 203B

- 1:30PM *Two Step Evolution Strategy for Device Motif BSIM Model Parameter Extraction*
Yang Xiao, Martin Trefzer, James Walker, Simon Bale and Andy Tyrrell 2877
- 1:50PM *Maximising Axiomatization Coverage and Minimizing Regression Testing Time*
Markus Wagner 2885
- 2:10PM *A New Adaptive Kalman Filter by Combining Evolutionary Algorithm and Fuzzy Inference System*
Yudan Huo, Zhihua Cai, Wenying Gong and Qin Liu 2893
- 2:30PM *Cartesian Genetic Programming as Local Optimizer of Logic Networks*
Lukas Sekanina, Ondrej Ptak and Zdenek Vasicek 2901
- 2:50PM *Wave Height Quantification Using Land Based Seismic Data with Grammatical Evolution*
Sarah Donne, Miguel Nicolau, Christopher Bean and Michael O'Neill 2909
- 3:10PM *Genetic Programming Based Activity Recognition on a Smartphone Sensory Data Benchmark*
Feng Xie, Andy Song and Vic Ciesielski 2917

FrE3-3 Swarm Intelligence, Chair: Thomas Runkler, Room: 203C

- 1:30PM *Swarm/Evolutionary Intelligence for Agent-Based Social Simulation*
Andreas Janecek, Tobias Jordan and Fernando Buarque de Lima-Neto 2925
- 1:50PM *Solving the Multidimensional Knapsack Problem Using a CUDA Accelerated PSO*
Drahoslav Zan and Jiri Jaros 2933
- 2:10PM *Multidimensional Scaling with Multiswarming*
Thomas Runkler and James Bezdek 2940
- 2:30PM *Chaos-Driven Discrete Artificial Bee Colony*
Magdalena Metlicka and Donald Davendra 2947
- 2:50PM *Web Bots Detection Using Particle Swarm Optimization Based Clustering*
Shafiq Alam, Gillian Dobbie, Yun Sing Koh and Patricia Riddle 2955
- 3:10PM *An Ant Colony Optimization Algorithm for Multi-Objective Clustering in Mobile Ad Hoc Networks*
Chung-Wei Wu, Tsung-Che Chiang and Li-Chen Fu 2963

FrE3-4 Heuristics, Metaheuristics and Hyper-Heuristics II, Chair: Madalina Drugan, Room: 203D

- 1:30PM *Designing Reusable Metaheuristic Methods: A Semi-Automated Approach*
Steven Adriaensen, Tim Brys and Ann Nowe 2969
- 1:50PM *Network Path Optimization Under Dynamic Conditions*
Yaser Enaya and Kalyanmoy Deb 2977
- 2:10PM *A Parallel Lagrangian-ACO Heuristic for Project Scheduling*
Oswyn Brent, Dhananjay Thiruvady, Antonio Gomez-Iglesias and Rodolfo Garcia-Flores 2985
- 2:30PM *A Multidirectional Physarum Solver for the Automated Design of Space Trajectories*
Luca Masi and Massimiliano Vasile 2992
- 2:50PM *A Genetic Programming-Based Hyper-heuristic Approach for Storage Location Assignment Problem*
Jing Xie, Yi Mei, Andreas Ernst, Xiaodong Li and Andy Song 3000
- 3:10PM *The Monarchy Driven Optimization Algorithm*
Ritambhar Burman, Swagatam Das, Zheshanul Haque, Athanasios V. Vasilakos and Soumyadip Chakraborti 3008

FrE3-5 Real-World Applications II, Chair: Isaac Triguero, Room: 303

1:30PM	<i>Heuristic Optimization for Software Project Management with Impacts of Team Efficiency</i>	
	Nanlin Jin and Xin Yao	3016
1:50PM	<i>A Multiobjective Optimization Method Based on MOEA/D and Fuzzy Clustering for Change Detection in SAR Images</i>	
	Qiao Wang, Hao Li, Maoguo Gong, Linzhi Su and Licheng Jiao	3024
2:10PM	<i>A Novel Evaluation Function for LT Codes Degree Distribution Optimization</i>	
	Pei-Chuan Tsai, Chih-Ming Chen and Ying-ping Chen	3030
2:30PM	<i>A Combined MapReduce-Windowing Two-Level Parallel Scheme for Evolutionary Prototype Generation</i>	
	Isaac Triguero, Daniel Peralta, Jaume Bacardit, Salvador Garcia and Francisco Herrera	3036
2:50PM	<i>A Dynamic-Weighted Collaborative Filtering Approach to Address Sparsity and Adaptivity Issues</i>	
	Liang Gu, Peng Yang and Yongqiang Dong	3044
3:10PM	<i>Carry Trade Portfolio Optimization using Particle Swarm Optimization</i>	
	Stuart Reid, Katherine Malan and Andries Engelbrecht	3051

Friday, July 11, 4:00PM-6:00PM**FrE4-1 Constraint-Handling and Preference-Handling, Chair: Ruhul Sarker, Room: 203A**

4:00PM	<i>On the Edge of Feasibility: A Case Study of the Particle Swarm Optimizer</i>	
	Mohammad reza Bonyadi and Zbigniew Michalewicz	3059
4:20PM	<i>Linear Sparse Arrays Designed by Dynamic Constrained Multi-Objective Evolutionary Algorithm</i>	
	Wei Dong and Sanyou Zeng	3067
4:40PM	<i>Mapping Constrained Optimization Problems to Penalty Parameters: An Empirical Study</i>	
	Chengyong Si, Jianqiang Shen, Xuan Zou, Lei Wang and Qidi Wu	3073
5:00PM	<i>A Constrained Multi-Objective Surrogate-Based Optimization Algorithm</i>	
	Prashant Singh, Ivo Couckuyt, Francesco Ferranti and Tom Dhaene	3080
5:20PM	<i>A Feature-Based Analysis on the Impact of Linear Constraints for e-Constrained Differential Evolution</i>	
	Shayan Poursoltan and Frank Neumann	3088
5:40PM	<i>DMOPSO: Dual Multi-Objective Particle Swarm Optimization</i>	
	Lee Ki-Baek and Kim Jong-Hwan	3096

FrE4-2 Particle Swarm Optimization, Chair: Kazuaki Masuda, Room: 203B

4:00PM	<i>Demonstrator Selection in a Social Learning Particle Swarm Optimizer</i>	
	Ran Cheng and Yaochu Jin	3103
4:20PM	<i>Filter Based Backward Elimination in Wrapper Based PSO for Feature Selection in Classification</i>	
	Bach Hoai Nguyen, Bing Xue, Ivy Liu and Mengjie Zhang	3111
4:40PM	<i>An Archive Based Particle Swarm Optimisation for Feature Selection in Classification</i>	
	Bing Xue, A. K. Qin and Mengjie Zhang	3119
5:00PM	<i>A Graph-Based Particle Swarm Optimisation Approach to QoS-Aware Web Service Composition and Selection</i>	
	Alexandre Sawczuk da Silva, Hui Ma and Mengjie Zhang	3127
5:20PM	<i>Task Allocation Under Communication Constraints Using Motivated Particle Swarm Optimization</i>	
	Medria Hardhienata, Valery Ugrinovskii and Kathryn Merrick	3135
5:40PM	<i>Serial PSO Results are Irrelevant in a Multi-Core Parallel World</i>	
	Andrew McNabb and Kevin Seppi	3143

Special Session: FrE4-3 Dynamic Multi-Objective Optimization, Chair: Marde Helbig, Room: 203C

4:00PM	<i>Heterogeneous Dynamic Vector Evaluated Particle Swarm Optimisation for Dynamic Multi-Objective Optimisation</i> Marde Helbig and Andries Engelbrecht	3151
4:20PM	<i>An Adaptive Diversity Introduction Method for Dynamic Evolutionary Multiobjective Optimization</i> Min Liu, Jinhua Zheng, Junnian Wang, Yuzhen Liu and Lei Jiang	3160
4:40PM	<i>A Multiple Reference Point-Based Evolutionary Algorithm for Dynamic Multi-Objective Optimization with Undetectable Changes</i> Radhia Azzouz, Slim Bechikh and Lamjed Ben Said	3168
5:00PM	<i>Artificial Bee Colony Induced Multi-Objective Optimization in Presence of Noise</i> Pratyusha Rakshit, Amit Konar and Atulya Nagar	3176
5:20PM	<i>A Cascaded Evolutionary Multi-Objective Optimization for Solving the Unbiased Universal Electric Motor Family Problem</i> Timo Friedrich and Stefan Menzel	3184
5:40PM	<i>Evolutionary Multiobjective Optimization in Dynamic Environments: A Set of Novel Benchmark Functions</i> Subhodip Biswas, Swagatam Das, Ponnuthurai Nagaratnam Suganthan and Carlos A. Coello Coello	3192

Special Session: FrE4-4 Fireworks Algorithms for Optimization, Chair: Ying Tan, Room: 203D

4:00PM	<i>A Hybrid Biogeography-Based Optimization and Fireworks Algorithm</i> Bei Zhang, Min-Xia Zhang and Yu-Jun Zheng	3200
4:20PM	<i>Analysis on Global Convergence and Time Complexity of Fireworks Algorithm</i> Jianhua Liu, Shaoqiu Zheng and Ying Tan	3207
4:40PM	<i>Adaptive Fireworks Algorithm</i> Junzhi Li, Shaoqiu Zheng and Ying Tan	3214
5:00PM	<i>Dynamic Search in Fireworks Algorithm</i> Shaoqiu Zheng, Andreas Janeczek, Junzhi Li and Ying Tan	3222
5:20PM	<i>Maintaining Population Diversity in Brain Storm Optimization Algorithm</i> Shi Cheng, Yuhui Shi, Quande Qin, T. O. Ting and Ruibin Bai	3230
5:40PM	<i>Fireworks Algorithm with Differential Mutation for Solving the CEC 2014 Competition Problems</i> Chao Yu, Lingchen Kelley, Shaoqiu Zheng and Ying Tan	3238

FrE4-5 Real-World Applications III, Chair: David Camacho, Room: 303

4:00PM	<i>Evolutionary Algorithms Dynamics and Its Hidden Complex Network Structures</i> Zelinka Ivan, Lampinen Jouni, Senkerik Roman, Pluhacek Michal and Davendra Donald	3246
4:20PM	<i>Knowledge Acquisition Issues for Intelligent Route Optimization by Evolutionary Computation</i> Masaki Suzuki, Setsuo Tsuruta, Rainer Knauf and Yoshitaka Sakurai	3252
4:40PM	<i>A Memetic Algorithm for the Prize Collecting Traveling Car Renter Problem</i> Matheus Menezes, Marco Goldberg and Elizabeth Goldberg	3258
5:00PM	<i>Network on Chip Optimization Based on Surrogate Model Assisted Evolutionary Algorithms</i> Mengyuan Wu, Ammar Karkar, Bo Liu, Alex Yakovlev and Georges Gielen	3266
5:20PM	<i>A Genetic Algorithm for the Minimum Latency Pickup and Delivery Problem</i> Xin-Lan Liao, Chih-Hung Chien and Chuan-Kang Ting	3272
5:40PM	<i>A Heuristic Approach to Greener Airport Ground Movement</i> Michal Weiszer, Jun Chen, Stefan Ravizza, Jason Atkin and Paul Stewart	3280