Detailed Program

Note: The given times are as per the Central European Summer Time (CEST) zone.

Monday, June 28, 2021

Session BPA1: Best paper awards – I (Student)
Monday, June 28, 10:00AM-12:00PM, Room 1, Chair: Hemant Singh

Tutorial T9: Evolutionary Computation for Feature Reduction
Monday, June 28, 10:00AM-12:00PM, Room 2, Instructor: Bach Nguyen, Bing Xue, Mengjie Zhang

Tutorial T16: Introduction to Grammar-Based Evolutionary Computation
Monday, June 28, 10:00AM-12:00PM, Room 3, Instructor: Grant Dick, Peter Whigham

Tutorial T22: Evolutionary Machine Learning
Monday, June 28, 10:00AM-12:00PM, Room 4, Instructor: Masaya Nakata, Shinichi Shirakawa and Will Browne

Tutorial T6: Statistical Analyses for Meta-heuristic Stochastic Optimization Algorithms
Monday, June 28, 10:00AM-12:00PM, Room 5, Instructor: Tome Eftimov and Peter Korošec

Tutorial T8: Cartesian Genetic Programming and its Applications
Monday, June 28, 10:00AM-12:00PM, Room 6, Instructor: Lukas Sekanina, Julian F. Miller

Tutorial T20: Evolutionary Computation for Digital Art
Monday, June 28, 10:00AM-12:00PM, Room 7, Instructor: Aneta Neumann, Frank Neumann

Session BPA2: Best paper awards – II (Overall)
Monday, June 28, 12:00PM-2:00PM, Room 1, Chair: Hemant Singh

Tutorial T2: Towards Better Explainable AI Through Genetic Programming
Monday, June 28, 12:00PM-2:00PM, Room 2, Instructor: Yi Mei

Tutorial T23: Embedding Knowledge into Optimization Process
Monday, June 28, 12:00PM-2:00PM, Room 3, Instructor: Amir H. Gandomi

Tutorial T10: Pareto Optimization for Subset Selection: Theories and Practical Algorithms
Monday, June 28, 12:00PM-2:00PM, Room 4, Instructor: Chao Qian and Yang Yu

Tutorial T11: Modern Linkage Learning Techniques in Combinatorial Optimization
Monday, June 28, 12:00PM-2:00PM, Room 5, Instructor: Michal Witold Przewozniczek, Marcin Michal Komarnicki

Tutorial T12: Differential Evolution with Ensembles, Adaptations and Topologies
Monday, June 28, 12:00PM-2:00PM, Room 6, Instructor: P. N. Suganthan

Tutorial T24: Evolutionary Diversity Optimization
Monday, June 28, 12:00PM-2:00PM, Room 7, Instructor: Jakob Bossek, Aneta Neumann and Frank Neumann

Tutorial T14: Large-Scale Optimization and Learning
Monday, June 28, 2:15PM-4:15PM, Room 1, Instructor: Mohammad Nabi Omidvar and Yuan Sun

Tutorial T15: Multiobjective Optimization in the Presence of Constraints
Monday, June 28, 2:15PM-4:15PM, Room 2, Instructor: Bogdan Filipič and Aljoša Vodopija

Tutorial T4: Game Dynamics on Evolutionary Graphs: An Introduction
Monday, June 28, 2:15PM-4:15PM, Room 3, Instructor: Hendrik Richter

Tutorial T17: Benchmarking and Experimentation: Pitfalls and Best Practices
Monday, June 28, 2:15PM-4:15PM, Room 4, Instructor: Thomas Bartz-Beielstein, Boris Naujoks, Mike Preuss

Tutorial T18: An Easy Introduction to Theory of Evolutionary Computation
Monday, June 28, 2:15PM-4:15PM, Room 5, Instructor: Benjamin Doerr

Tutorial T3: Advances in Particle Swarm Optimization Development, Analysis, and Understanding
Monday, June 28, 2:15PM-4:15PM, Room 6, Instructor: Andries Engelbrecht, Christopher Cleghorn

Workshop W1: Workshop on Selection
Monday, June 28, 2:15PM-4:15PM, Room 7, Chair: Stephen Chen

Tutorial T1: Evolutionary Algorithms and Hyper-Heuristics
Monday, June 28, 4:15PM-6:15PM, Room 1, Instructor: Nelishia Pillay

Tutorial T19: Evolution of Neural Networks
Monday, June 28, 4:15PM-6:15PM, Room 2, Instructor: Risto Miikkulainen

Tutorial T21: Adversarial Deep Learning by Using Coevolutionary Computation
Monday, June 28, 4:15PM-6:15PM, Room 3, Instructor: Jamal Toutouh, Una-May O'Reilly

Tutorial T5: Evolutionary Bilevel Optimization
Monday, June 28, 4:15PM-6:15PM, Room 4, Instructor: Ankur Sinha, Kalyanmoy Deb

Tutorial T7: Metaheuristics for NP-hard Combinatorial Problems
Monday, June 28, 4:15PM-6:15PM, Room 5, Instructor: Malek Mouhoub

Tutorial T13: Evolutionary Many-Objective Optimization
Monday, June 28, 4:15PM-6:15PM, Room 6, Instructor: Hisao Ishibuchi, Hiroyuki Sato

Workshop W2: Good Benchmarking Practices for Evolutionary Computation-BENCHMARKING@CEC-2021
Monday, June 28, 4:15PM-6:15PM, Room 7, Chair: Carola Doerr

Tuesday, June 29, 2021

OP: Opening
Tuesday, June 29, 10:00AM-10:30AM, Room 1, Chair: Hussein Abbass and Jacek Mańdziuk

Special Track VT1: Krakow Virtual Tour
Tuesday, June 29, 10:45AM-11:45AM, Room 1, Chair: Janina Naskalska

Session R1: Differential Evolution
Tuesday, June 29, 12:00PM-1:00PM, Room 1, Chair: Valentino Santucci, Ismail Ali

12:00PM Learning to Mutate for Differential Evolution [#156]

Haotian Zhang, Jianyong Sun and Zongben Xu

Xi'an Jiaotong University, China

12:10PM Is Algebraic Differential Evolution Really a Differential Evolution Scheme? [#155]

Valentino Santucci

University for Foreigners of Perugia, Italy

12:20PM An Adaptive Differential Evolution Algorithm Utilizing Failure Information and Success Information [#86]

Tetsuyuki Takahama and Setsuko Sakai

Hiroshima City University, Japan; Hiroshima Shudo University, Japan

12:30PM An Integrated Differential Evolution-based Heuristic Approach for Product Family Design Problem [#19]

Ismail M. Ali, Hasan H. Turan, Ripon K. Chakrabortty, Sondoss Elsawah and Michael J. Ryan

Capability Systems Centre, School of Engineering and Information Technology University of New South Wales, Canberra, Australia

12:40PM A Differential Evolution with Multi-factor Ranking Based Parameter Adaptation for Global Optimization [#313]

Wei Jing, Wang Zuling, Xu Yangyan and Chen Ze

Hangzhou Normal University, China

12:50PM Adaptive Differential Evolution based on Exploration and Exploitation Control [#112]

Hao Bai, Changwu Huang and Xin Yao

INSA Rouen Normandy, France; Southern University of Science and Technology, China

Session R2: Genetic Algorithms - I
Tuesday, June 29, 12:00PM-1:00PM, Room 2, Chair: Darren Chitty, Samuel Yanes Luis

12:00PM A Genetic Algorithm To Optimize Penstocks For Micro-Hydro Power Plants [#79]

Alejandro Tapia Cordoba, Alvaro Rodriguez del Nozal, Daniel Gutierrez Reina and Pablo Millan Gata

Departamento de ingenieria, Universidad Loyola, Spain; Department of electrical engineering, Universidad de Sevilla, Spain; Departamento de ingenieria electronica, Universidad de Sevilla, Spain

12:10PM An Ant Colony Optimisation Inspired Crossover Operator for Permutation Type Problems [#303]

Darren Chitty

Aston University, United Kingdom

12:20PM Genetic Algorithm Performance and the Influence of its Control Parameters on the Optimization of Optical Lens Design [#481]

Neda Hesam Mahmouid Nezhad and Mohamad Ghaffarian Niasar

TU Delft, Netherlands

12:30PM A Sample-Efficiency Comparison Between Evolutionary Algorithms and Deep Reinforcement Learning for Path Planning in an Environmental Patrolling Mission [#27]

Samuel Yanes Luis, Federico Peralta Samaniego, Daniel Gutierrez Reina and Sergio Toral Marin

University of Seville, Spain

12:40PM gaCNN: Composing CNNs and GAs to Build an Optimized Hybrid Classification Architecture [#171]

Mendes Raphael, Alves Alexandre, Gomes Matheus, Bertarini Pedro and Amaral Laurence

Federal University of Uberlandia (UFU), Brazil

12:50PM A Two-level Genetic Algorithm for Inter-domain Path Computation under Node-defined Domain Uniqueness Constraints [#418]

Tuan Anh Do, Huynh Thi Thanh Binh, Hoang Long Nguyen, Bao Thang Ta and Simon Su

Hanoi University of Science and Technology, Viet Nam; DEVCOM Army Research Laboratory, United States of America

Session R3: Evolutionary Computation for Dynamic and Uncertain Environments
Tuesday, June 29, 12:00PM-1:00PM, Room 3, Chair: Shengxiang Yang, Christina Plump

12:00PM Solving Dynamic Many-objective TSP using NSGA-III equipped with SVR-RBF Kernel Predictor [#331]

Rashi Gupta and Satyasai Jagannath Nanda

Department of Electronics and Communication Engineering, Malaviya National Institute of Technology Jaipur, Rajasthan-302017, India

12:10PM Improved Population Prediction Strategy for Dynamic Multi-Objective Optimization Algorithms Using Transfer Learning [#13]

Zhening Liu and Handing Wang

Xidian University, China

12:20PM A Novel Scalable Framework For Constructing Dynamic Multi-objective Optimization Problems [#131]

Qingshan Tan, Changhe Li, Hai Xia, Sanyou Zeng and Shengxiang Yang

China University of Geosciences (Wuhan), China; De Montfort University, United Kingdom

12:30PM Historical Information-based Differential Evolution for Dynamic Optimization Problems [#64]

Sheng-Hao Wu, Ke-Jing Du, Zhi-Hui Zhan, Hua Wang and Jun Zhang

South China University of Technology, China; Victoria University, Australia

12:40PM Improving evolutionary algorithms by enhancing an approximative fitness function through prediction intervals [#471]

Christina Plump, Bernhard J. Berger and Rolf Drechsler

Institute of Computer Science, University of Bremen, Germany; Cyber-Physical Systems, DFKI GmbH, Bremen, Germany

12:50PM Dynamic Optimal Power Flow Based on a Spatio-Temporal Wind Speed Forecast Model [#147]

Wenlei Bai, Xinxin Zhu and Kwang Y. Lee

Hitachi ABB Power Grids, United States of America; Texas A&M University, United States of America; Baylor University, United States of America

Session R4: Multi-objective Evolutionary Algorithms - I
Tuesday, June 29, 12:00PM-1:00PM, Room 4, Chair: Kai Wu, Tingrui Liu

12:00PM A new Diversity Performance Indicator for Many-Objective Optimisation Problems [#200]

Kai Wu and Panoutsos George

University of Sheffield, United Kingdom

12:10PM A Competition-Cooperation Evolutionary Algorithm with Bidirectional Multi-population Local Search and Local Hypervolume-based Strategy for Multi-objective Optimization [#515]

Zhou Sheng hao, Wang Zu ling, Pang Ting ting, Wei Jing and Chen Ze

Hangzhou Normal University, China

12:20PM Comparison of Adaptive Differential Evolution Algorithms on the MOEA/D-DE Framework [#295]

Kei Nishihara and Masaya Nakata

Yokohama National University, Japan

12:30PM Approximating Pareto Optimal Set by An Incremental Learning Model [#97]

Tingrui Liu, Shenmin Song, Xin Li and Liguo Tan

Harbin Institute of Technology, China; Shenzhen Institute of Information Technology, China

12:40PM MOEA/D Using Dynamic Weight Vectors and Stable Matching Schemes for the Deployment of Multiple Airships in the Earth Observing System [#15]

Zhouwu Xu, Jing Liu, Baihao Qiao and Yating Cao

Xidian University, China

12:50PM Empirical Studies on the Role of the Decision Maker in Interactive Evolutionary Multi-Objective Optimization [#230]

Guiyu Lai, Minhui Liao and Ke Li

University of Electronic Science and Technology of China, China; University of Exeter, United Kingdom

Special Session SS44: Evolutionary Algorithms for Complex Optimization in the Energy Domain
Tuesday, June 29, 12:00PM-1:00PM, Room 5, Chair: Joao Soares

12:00PM A Hybrid Multiobjective Solution for the Short-term Hydro-power Dispatch Problem: a Swarm Evolutionary Approach [#93]

Carolina Marcelino, Lucas Oliveira, Elizabeth Wanner, Carla Delgado, Silvia Jimenez-Fernandez and Sancho Salcedo-Sanz

UAH, Spain; CEFET-MG, Brazil; UFRJ, Brazil

12:10PM Compressor Schedule Optimization for a Refrigerated Warehouse Using Metaheuristic Algorithms [#133]

Rafal Biedrzycki, Kamil Kwiatkowski and Pawel Cichosz

Warsaw University of Technology, Institute of Computer Science, Poland; Euros Energy, Poland

12:20PM A Reactive Multiagent System for Self-healing in Smart Distribution Grids [#292]

Italo Campos and Filipe Saraiva

Federal University of Para, Brazil

12:30PM Effective Partial Charging Scheme For Minimizing The Energy Depletion And Charging Cost In Wireless Rechargeable Sensor Networks [#415]

Thi Huong Tran, Van Cuong Le, Bao Ngoc Nguyen, Minh Hai Ngo and Thi Thanh Binh Huynh

VNU University of Science, Vietnam National University, Hanoi; Hanoi University of Science and Technology, Viet Nam; Hanoi University of Science and Technology, Viet Nam

12:40PM Evolutionary Algorithms for Energy Scheduling under Uncertainty considering Multiple Aggregators [#151]

Jose Almeida, Joao Soares, Bruno Canizes, Mohammad Ali Ghazvini Fotouhi, Fernando Lezama and Zita Vale

GECAD, Polytechnic of Porto, Portugal; Chalmers University, Portugal; Polytechnic of Porto, Portugal

12:50PM DSO Contract Market for Demand Response Using Evolutionary Computation [#340]

Eduardo Lacerda, Fernando Lezama, Joao Soares and Zita Vale

GECAD, Polytechnic of Porto, Portugal; Polytechnic of Porto, Portugal

Session R5: Real World Applications - I
Tuesday, June 29, 12:00PM-1:00PM, Room 6, Chair: Mohammed El-Abd, Egor Smirnov

12:00PM   Ant colony system based drone scheduling for ship emission monitoring [#17]
    Luo Xiaosong, Sun Zhao-Hui and Qiu Siqi
    Shanghai Jiao Tong University, China

12:10PM   Knowledge Embedding-Assisted Multi-Exemplar Learning Particle Swarm Optimization for Traffic Signal Timing Optimization [#60]
    Zhuang-Jie Deng, Liu-Yue Luo, Zhi-Hui Zhan and Jun Zhang
    South China University of Technology, China; South China University of Technology, Taiwan; Chaoyang University of Technology, Taiwan

12:20PM   Optimal Production Scheduling using a Production Simulator by Modified Brain Storm Optimization [#178]
    Takahashi Kenjiro, Fukuyama Yoshikazu, Kawaguchi Shuhei and Sato Takaomi
    Meiji University, Japan; Mitsubishi Electric, Japan

12:30PM   Using a Genetic Algorithm for Planning Interesting Tourist Routes in the City on the Basis of Open Street Map Data [#347]
    Egor Smirnov and Sergei Kudinov
    ITMO University, Russia

12:40PM   Genetic Algorithm for Feature and Latent Variable Selection for Nutrient Assessment in Horticultural Products [#229]
    Demelza Robinson, Qi Chen, Bing Xue, Daniel Killeen, Sara Miller, Keith Gordon, Indrawati Oey and Mengjie Zhang
    Victoria University of Wellington, New Zealand; The New Zealand Institute for Plant & Food Research Limited, New Zealand; University of Otago, New Zealand

Session R6: Learning Classifier Systems
Tuesday, June 29, 1:05PM-2:15PM, Room 1, Chair: Will Browne, Laurence Hirsch

1:05PM   Document Clustering with Evolved Single Word Search Queries [#90]
    Laurence Hirsch, Alessandro Di Nuovo and Prasanna Haddela
    Sheffield Hallam University, United Kingdom; Sri Lanka Institute of Information Technology, Sri Lanka

1:15PM   Deep Learning Model with GA-based Visual Feature Selection and Context Integration [#506]
    Ranju Mandal, Basim Azam, Brijesh Verma and Mengjie Zhang
    Central Queensland University, Australia; Victoria University of Wellington, New Zealand

1:25PM   Constructing Complexity-efficient Features in XCS with Tree-based Rule Conditions [#523]
    Trung Nguyen, Will Browne and Mengjie Zhang
    Victoria University of Wellington, New Zealand

1:35PM   XCS with Weight-based Matching in VAE Latent Space and Additional Learning of High-Dimensional Data [#540]
    Masakazu Tadokoro, Hiroyuki Sato and Keiki Takadama
    The University of Electro-Communications, Japan

1:45PM   Increasing Accuracy and Interpretability of High-Dimensional Rules for Learning Classifier System [#541]
    Hiroki Shiraishi, Masakazu Tadokoro, Yohei Hayamizu, Yukiko Fukumoto, Hiroyuki Sato and Keiki Takadama
    The University of Electro-Communications, Japan

1:55PM   Pattern classification applying Neighbourhood Component Analysis and Swarm Evolutionary Algorithms: a coupled methodology [#94]

Gabriel Leite, Carolina Marcelino, Elizabeth Wanner, Carlos Pedreira, Silvia Jimenez-Fernandez and Sancho Salcedo-Sanz
UFRJ, Brazil; UAH, Spain; CEFET-MG, Brazil

Special Session SS2: Memetic Computing
Tuesday, June 29, 1:05PM-2:15PM, Room 2, Chair: Ferrante Neri

1:05PM   A Memetic Algorithm for Optimizing Inter-links to Enhance the Robustness of Interdependent Networks Against Malicious Attacks [#36]
Junyuan Chen and Jing Liu
Guangzhou Institute of Technology, Xidian University, China

1:15PM   Covariance Pattern Search with Eigenvalue-determined Radii [#77]
Ferrante Neri and Yuyang Zhou
University of Nottingham, United Kingdom; Imperial College, United Kingdom

1:25PM   Designing Urban Transit Network using Memetic Algorithm [#100]
Hanan Ba ali and Adam Roman
Faculty of Mathematics and Computer Science Jagiellonian University Cracow, Poland, Poland

1:35PM   Hybrid Quantum Computing - Tabu Search Algorithm for Partitioning Problems: preliminary study on the Traveling Salesman Problem [#12]
Osaba Eneko, Villar-Rodriguez Esther, Oregi Izaskun and Moreno-Fernandez-de-Leceta Aitor
TECNALIA, Basque Research and Technology Alliance, Spain; Instituto Ibermatica de Innovacion, Spain

1:45PM   Memetic Differential Evolution Using Coordinate Descent [#245]
Azam Asilian Bidgoli and Shahryar Rahnamayan
Department of Electrical, Computer, and Software Engineering, Ontario Tech University, Oshawa, Canada, Canada

Session R7: Discrete and Combinatorial Optimization
Tuesday, June 29, 1:05PM-2:15PM, Room 3, Chair: Roberto Pietrantuono, Isao Ono

1:05PM   A Novel Evolutionary Algorithm with Adaptation Mechanism for Fuzzy Permutation Flow-Shop Scheduling [#128]
Zi-xiao Pan, Ling Wang, Jing-fang Chen and Yu-ting Wu
Department of Automation Tsinghua University, China

1:15PM   A Biased Random-key Genetic Algorithm with a Local Search Component for the Optimal Bucket Order Problem [#146]
Luiz Henrique Lorena, Luiz Antonio Lorena and Antonio Chaves
Univ Fed of Sao Paulo, Brazil

1:25PM   An Evolutionary Algorithm Taking Account of Epistasis among Parameters for Black-Box Discrete Optimization [#164]
Sho Shimazu and Isao Ono
Tokyo Institute of Technology, Japan

1:35PM   A General Framework Based on Walsh Decomposition for Combinatorial Optimization Problems [#353]
Imanol Unanue, Maria Merino and Jose A. Lozano
University of the Basque Country UPV/EHU, Spain; Basque Center for Applied Mathematics, Spain

1:45PM   Automated Hypotheses Generation via Combinatorial Causal Optimization [#386]
Roberto Pietrantuono
University of Naples Federico II, Italy

1:55PM   An Evolutionary Approach for Solving Multi-Objective WCSPs using Mini-Bucket Elimination Heuristics [#448]
         Vlad-Ioan Lupoaie, Ivona-Alexandra Chili, Madalina Raschip and Mihaela Elena Breaban
         Faculty of Computer Science,"Alexandru Ioan Cuza" University of Iasi, Romania

2:05PM   Quantum-inspired Estimation of Distribution Algorithm to solve the Travelling Salesman Problem [#349]
         Vicente P. Soloviev, Concha Bielza and Pedro Larranaga
         Universidad Politecnica de Madrid, Spain

Special Session SS22: Bioinformatics and Bioengineering Applications
Tuesday, June 29, 1:05PM-2:15PM, Room 4, Chair: James Hughes

1:05PM   Evolution of amino acid properties in the context of protein secondary structure prediction [#40]
         Jose Santos and Hector Rivas
         University of Corunna, Spain

1:15PM   Evaluation of Communities from Exploratory Evolutionary Compression of Weighted Graphs [#435]
         Emilia Rutkowski, James Sargant, Sheridan Houghten and Joseph Brown
         Brock University, Canada; Innopolis University, Russia

1:25PM   Optimisation of Cancer Status Prediction Pipelines using Bio-Inspired Computing [#458]
         Mariel Barbachan e Silva, Pedro Henrique Narloch, Marcio Dorn and Pilib O Broin
         NUI Galway, Ireland; UFRGS, Brazil

1:35PM   Weighting on the World to Change... an Epidemic [#284]
         Rodrigo Vega Jimenez, Michael Dube, Sheridan Houghten and James Hughes
         Brock University, Canada; University of Guelph, Canada; St. Francis Xavier University, Canada

1:45PM   Applying Never-Ending Learning (NEL) Principles to build a Gene Ontology (GO) Biocurator [#43]
         Amaral Laurence, Alves Alexandre, Mendes Raphael, Gomes Matheus, Bertarini Pedro and Hruschka Jr. Estevam
         Federal University of Uberlandia (UFU), Brazil; Carnegie Mellon University (CMU), United States of America

1:55PM   Multistage Evolutionary Strategies for Adjusting a Cellular Automata-based Epidemiological Model [#499]
         Larissa M. Fraga, Gina M. B. Oliveira and Luiz G. A. Martins
         Federal University of Uberlandia, Brazil

Special Session SS4: Nature-Inspired Algorithms and Machine Learning
Tuesday, June 29, 1:05PM-2:15PM, Room 5, Chair: Marcin Wozniak

1:05PM   Human Activity Recognition Using Parallel Cartesian Genetic Programming [#305]
         Bruno Silva, Heder Bernardino and Helio Barbosa
         Universidade Federal de Juiz de Fora, Brazil

1:15PM   A Genetic Algorithm with Tree-structured Mutation for Hyperparameter Optimisation of Graph Neural Networks [#489]
         Yingfang Yuan, Wenjun Wang and Wei Pang
         Heriot-Watt University, United Kingdom

1:25PM   Solar Irradiance Forecasting in Tropical Weather using an Evolutionary Lean Neural Network [#277]

Yong Foo and Cindy Goh

Nanyang Polytechnic, Singapore; University of Glasgow, United Kingdom

1:35PM Exploration Of Encoding And Decoding Methods For Spiking Neural Networks On The Cart Pole And Lunar Lander Problems Using Evolutionary Training [#507]

Andrew Rafe, Jaime Garcia and William Raffe

University of Technology Sydney, Australia

1:45PM A Comparison of Evolutionary and Neural Attention Modeling Relative to Adversarial Learning [#290]

Charlie Veal, Marshall Lindsay, Scott Kovaleski, Derek Anderson and Stanton Price

University of Missouri, Department of Electrical Engineering & Computer Science, United States of America; U.S. Army Engineer Research and Development Center, United States of America

Session R8: Real World Applications - II
Tuesday, June 29, 1:05PM-2:15PM, Room 6, Chair: Victor Parque, Thiago Rios

1:05PM Exploiting Local Geometric Features in Vehicle Design Optimization with 3D Point Cloud Autoencoders [#282]

Thiago Rios, Bas van Stein, Patricia Wollstadt, Thomas Baeck, Bernhard Sendhoff and Stefan Menzel

Honda Research Institute Europe GmbH, Germany; Leiden Institute of Advanced Computer Science (LIACS), Netherlands

1:15PM A Differential Particle Scheme with Successful Parent Selection and its Application to PID Control Tuning [#351]

Victor Parque

Waseda University, Japan

1:25PM A New Optimization Approach for Task Scheduling Problem Using Water Cycle Algorithm in Mobile Cloud Computing [#496]

Behzad Saemi, Mehdi Sadeghilalimi, Ali Asghar Rahmani Hosseinabadi, Malek Mouhoub and Samira Sadaoui

Kavosh Institute of Higher Education, Iran; University of Regina, Canada

1:35PM Domain-driven Correlation-aware Recombination and Mutation Operators for Complex Real-world Applications [#498]

Christina Plump, Bernhard J. Berger and Rolf Drechsler

Institute of Computer Science, University of Bremen, Germany; Cyber-Physical Systems, DFKI GmbH, Bremen, Germany

1:45PM Hybrid MLP-PSO-based Technique to Predict Process Parameters and Alloying Compositions in ADI for Sustainable Manufacturing [#103]

Ravindra Savangouder, Jagdish Patra and Suresh Palanisamy

1:55PAM A New Subspace Multi-Objective Approach for the Clustering and Selection of Regions of Interests in Histopathological Images [#243]

Mohammed Oualid Attaoui, Hanene Azzag, Nabil Keskes and Mustapha Lebbah

University Sorbonne Paris Nord, France; Ecole Superieure en Informatique SBA (ESI-SBA), Algeria

Special Track AW: Awards Ceremony
Tuesday, June 29, 2:30PM-3:30PM, Room 1, Chair: Bernadette Bouchon-Meunier, Jacek Mańdziuk

Plenary Talk P1: Xin Yao (When Everything Else Fails, Try Co-evolution)
Tuesday, June 29, 3:45PM-4:45PM, Room 1, Chair: Jacek Mańdziuk

Plenary Talk P2: Marco Dorigo (Towards Robust and Secure Robot Swarms)
Tuesday, June 29, 5:00PM-6:00PM, Room 1, Chair: Janusz Kacprzyk

Special Track SBF: IEEE Student Branch Forum
Tuesday, June 29, 6:05PM-7:05PM, Room 1, Chair: Marde Helbig

Wednesday, June 30, 2021

Session R9: Genetic Programming and Symbolic Regression
Wednesday, June 30, 9:00AM-10:00AM, Room 2, Chair: Qi Chen, Fergal Stapleton

9:00AM   Genetic Programming with Random Binary Decomposition for Multi-Class Classification Problems [#405]

Lushen Liao, Adam Kotaro Pindur and Hitoshi Iba

The University of Tokyo, Japan

9:10AM   Stabilization of Higher Periodic Orbits of the Lozi and Henon Maps using Meta-evolutionary Approaches [#406]

Radomil Matousek, Rene Lozi and Tomas Hulka

Brno University of Technology, Czech Republic; Universite Cote dAzur, France

9:20AM   Semantic Neighborhood Ordering in Multi-objective Genetic Programming based on Decomposition [#553]

Fergal Stapleton and Edgar Galvan

Maynooth University, Ireland

9:30AM   Genetic Programming for Symbolic Regression: A Study on Fish Weight Prediction [#234]

Yunhan Yang, Bing Xue, Linley Jesson and Mengjie Zhang

Victoria University of Wellington, New Zealand; The New Zealand Institute for Plant & Food Research Limited, New Zealand

9:40AM   Multi-objective discovery of PDE systems using evolutionary approach [#526]

Mikhail Maslyaev and Alexander Hvatov

ITMO University, Russian Federation

9:50AM   GP with a Hybrid Tree-vector Representation for Instance Selection and Symbolic Regression on Incomplete Data [#479]

Baligh Al-Helali, Qi Chen, Bing Xue and Mengjie Zhang

Victoria University Of Wellington, New Zealand; Victoria University of Wellington, New Zealand

Special Session SS16-I: Evolutionary Scheduling and Combinatorial Optimisation - I
Wednesday, June 30, 9:00AM-10:00AM, Room 3, Chair: Aaron Chen

9:00AM   Modular Analysis and Development of a Genetic Algorithm with Standardized Representation for Resource-Constrained Project Scheduling [#394]

Ali Ahrari, Saber Elsayed, Ruhul Sarker, Daryl Essam and Carlos Coello Coello

University of New South Wales, Australia; CINVESTAV-IPN, Mexico

9:10AM   A Max-Min Ant System based on Decomposition for the Multi-Depot Cumulative Capacitated Vehicle Routing Problem [#527]

Mengyi Niu, Ruochen Liu and Handing Wang

Xidian University, China

9:20AM   Surrogate-Assisted Genetic Programming with Diverse Transfer for the Uncertain Capacitated Arc Routing Problem [#58]

Mazhar Ansari Ardeh, Yi Mei and Mengjie Zhang

Victori University of Wellington, New Zealand; Victoria University of Wellington, New Zealand

9:30AM   A Multi-Objective Genetic Programming Approach with Self-Adaptive Alpha Dominance to Uncertain Capacitated Arc Routing Problem [#140]

Shaolin Wang, Yi Mei and Mengjie Zhang

Victoria University of Wellington, New Zealand

9:40AM   Feature Selection for Evolving Many-Objective Job Shop Scheduling Dispatching Rules with Genetic Programming [#400]

Atiya Masood, Gang Chen and Zhang Mengjie

Iqra University, Pakistan; Victoria University of Wellington, New Zealand

9:50AM   A Hybrid Discrete Differential Evolution Approach for the Single Machine Total Stepwise Tardiness Problem with Release Dates [#318]

Gaurav Srivastava, Alok Singh and Rammohan Mallipeddi

University of Hyderabad, India; Kyungpook National University, Korea, Republic of

Special Session SS30: Accelerated Evolutionary Algorithms for Deep Learning and Parallel Models in Future Generation Computing
Wednesday, June 30, 9:00AM-10:00AM, Room 4, Chair: Marcin Woźniak

9:00AM   Embedded representations of Wikipedia Categories [#154]

Julian Szymanski, Andrzej Sobecki, Mora Higinio, David Gil and Jan Majkutewicz

Gdansk University of Technology, Poland; Gdansk university of tehnology, Poland; Alicante University, Spain

9:10AM   Meta-heuristic algorithm as feature selector for convolutional neural networks [#288]

Dawid Polap, Marcin Wozniak and Jacek Mandziuk

Faculty of Applied Mathematics, Silesian University of Technology, Poland; Faculty of Mathematics and Information Science, Warsaw University of Technology, Poland

9:20AM   Heuristic optimization of 18-pulse rectifier system [#289]

Andrzej Sikora, Andrzej Zielonka and Marcin Wozniak

Faculty of Electrical Engineering, Silesian University of Technology, Poland; Faculty of Applied Mathematics, Silesian University of Technology, Poland

9:30AM   Polar Bear Optimization For Industrial Computed Tomography With Incomplete Data [#525]

Mariusz Pleszczynski, Adam Zielonka, Dawid Polap, Marcin Wozniak and Jacek Mandziuk

Faculty of Applied Mathematics, Silesian University of Technology, Poland; Faculty of Mathematics and Information Science, Warsaw University of Technology, Poland

Special Session SS1: Evolutionary Unsupervised Learning and Applications
Wednesday, June 30, 9:00AM-10:00AM, Room 5, Chair: Andrew Lensen

9:10AM   Genetic Programming for Evolving Similarity Functions Tailored to Clustering Algorithms [#360]

Hayden Andersen, Andrew Lensen and Bing Xue

Victoria University of Wellington, New Zealand

9:20AM   Hybrid Multiobjective Evolutionary Algorithms for Unsupervised QPSO, BBPSO and Fuzzy clustering [#74]

Daphne Teck Ching Lai and Yuji Sato

Institute of Applied Data Analytics, Universiti Brunei Darussalam, Brunei Darussalam; Faculty of Computer and Information Sciences, Hosei University, Japan

9:30AM   Using Genetic Programming to Find Functional Mappings for UMAP Embeddings [#529]

Finn Schofield and Andrew Lensen

Victoria University of Wellington, New Zealand

Special Session SS20+25: Evolutionary Computation in Healthcare
Wednesday, June 30, 9:00AM-10:00AM, Room 6, Chair: Handing Wang

9:00AM   Blood Glucose Prediction Using a Two Phase TSKFuzzy Rule Based System [#198]

Jorge Alvarado, J. Manuel Velasco, Francisco Chavez, J. Ignacio Hidalgo and Francisco Fernandez de Vega

Universidad Complutense de Madrid, Spain; Universidad de Extremadura, Spain

9:10AM   Optimal Control Policies to Address the Pandemic Health-Economy Dilemma [#474]

Rohit Salgotra, Amiram Moshaiov, Thomas Seidelmann, Dominik Fischer and Mostaghim Sanaz

Tel Aviv University, Israel; Otto von Guericke University Magdeburg, Germany

9:20AM   Optimization and Adaptation of a Resource Planning Tool for Hospitals Under Special Consideration of the COVID-19 Pandemic [#524]

Thomas Bartz-Beielstein, Marcel Droescher, Alpar Guer, Alexander Hinterleitner, Tom Lawton, Olaf Mersmann, Dessislava Peeva, Lennard Reese, Frederik Rehbach, Nicolas Rehbach, Amrita Sen, Aleksandr Subbotin and Martin Zaefferer

TH Koeln, Germany; Bradford Institute for Health Research, United Kingdom

9:30AM   Probabilistic Fitting of Glucose Models with Real-Coded Genetic Algorithms [#267]

Carlos Cervigon, J. Manuel Velasco, Clara Burgos-Simon, Rafael Villanueva and J. Ignacio Hidalgo

Universidad Complutense de Madrid, Spain; Universitat Politecnica de Valencia, Spain

9:40AM   Weighted Ensemble of Deep Learning Models based on Comprehensive Learning Particle Swarm Optimization for Medical Image Segmentation [#346]

Truong Dang, Tien Thanh Nguyen, Carlos Moreno-Garcia, Eyad Elyan and John McCall

School of Computing, Robert Gordon University, United Kingdom

Special Session SS3: Evolutionary Computation for Feature Selection, Extraction and Dimensionality Reduction
Wednesday, June 30, 10:05AM-11:15AM, Room 1, Chair: Bach Nguyen

10:05AM   Particle Swarm Optimization for Feature Selection in Emotion Categorization [#325]

Harisu Abdullahi Shehu, Will Browne and Hedwig Eisenbarth

School of Engineering and Computer Science, Victoria University of Wellington, New Zealand; School of Psychology, Victoria University of Wellington, New Zealand

10:15AM   Multi-objective Multi-label Feature Selection with an Aggregated Performance Metric and Dominance-based Initialisation [#385]

Kaan Demir, Bach Nguyen, Bing Xue and Mengjie Zhang

Victoria University of Wellington, New Zealand

10:25AM   An Entropy Driven Multiobjective Particle Swarm Optimization Algorithm for Feature Selection [#390]

Juanjuan Luo, Dongqing Zhou, Lingling Jiang and Huadong Ma

Beijing University of Posts and Telecommunications, China; Northern Institute of Electronic Equipment of China, China

10:35AM Surrogate-Assisted Genetic Algorithm for Wrapper Feature Selection [#528]

Mohammed Ghaith Altarabichi, Slawomir Nowaczyk, Sepideh Pashami and Peyman Sheikholharam Mashhadi

Halmstad University, Sweden

10:45AM A Forward Search Inspired Particle Swarm Optimization Algorithm for Feature Selection in Classification [#105]

An-Da Li, Bing Xue and Mengjie Zhang

Tianjin University of Commerce, China; Victoria University of Wellington, New Zealand

10:55AM Binary Differential Evolution based Feature Selection Method with Mutual Information for Imbalanced Classification Problems [#404]

Arka Ghosh, Bing Xue and Mengjie Zhang

School of Engineering and Computer Science, Victoria University of Wellington, }\\ PO BOX 600, Wellington 6140, New Zealand, New Zealand

11:05AM Feature Selection for Polygenic Risk Scores using Genetic Algorithm and Network Science [#308]

Zhendong Sha, Ting Hu and Yuanzhu Chen

Queen's University, Canada; Memorial University of Newfoundland, Canada

Special Session SS46: Special Session Associated with Numerical Optimization Competitions
Wednesday, June 30, 10:05AM-11:15AM, Room 2, Chair: P. Suganthan

10:05AM NL-SHADE-RSP Algorithm with Adaptive Archive and Selective Pressure for CEC 2021 Numerical Optimization [#125]

Vladimir Stanovov, Shakhnaz Akhmedova and Eugene Semenkin

Reshetnev Siberian State University of Science and Technology, Russia

10:15AM Self-adaptive Differential Evolution Algorithm with Population Size Reduction for Single Objective Bound-Constrained Optimization: Algorithm j21 [#159]

Janez Brest, Mirjam Sepesy Maucec and Borko Boskovic

University of Maribor, FEECS, Slovenia

10:25AM A New Step-Size Adaptation Rule for CMA-ES Based on the Population Midpoint Fitness [#204]

Eryk Warchulski and Jaroslaw Arabas

Warsaw University of Technology, Institute of Computer Science, Poland

10:35AM Improving Differential Evolution through Bayesian Hyperparameter Optimization [#221]

Subhodip Biswas, Debanjan Saha, Shuvodeep De, Adam Cobb, Swagatam Das and Brian Jalaian

Virginia Tech, United States of America; Cognizant Technology Solutions, India; University of Alabama, United States of America; SRI International, United States of America; Indian Statistical Institute, India; US Army Research Laboratory, United States of America

10:45AM Gaining-Sharing Knowledge Based Algorithm with Adaptive Parameters Hybrid with IMODE Algorithm for Solving CEC 2021 Benchmark Problems [#336]

Ali Mohamed, Anas Hadi, Prachi Agrawal, Karam Sallam and Ali Mohamed

Cairo University, Egypt; King Abdulaziz University, Saudi Arabia; National Institute of Technology Hamirpur, India; Faculty of Computers and Informatics, Zagazig University, Egypt, Egypt; October University for Modern Sciences and Arts (MSA), Egypt

10:55AM Differential Evolution with Distance-based Mutation-selection Applied to CEC 2021 Single Objective Numerical Optimisation [#453]

Petr Bujok and Patrik Kolenovsky

University of Ostrava, Czech Republic

Special Session SS18: Benchmarking of Computational Intelligence Algorithms (BOCIA)
Wednesday, June 30, 10:05AM-11:15AM, Room 3, Chair: Thomas Weise

10:05AM   Novel Zigzag-based Benchmark Functions for Bound Constrained Single Objective
          Optimization [#80]
          Jakub Kudela
          Brno University of Technology, Czech Republic
10:15AM   Comparison with State-of-the-Art: Traps and Pitfalls [#268]
          Rafal Biedrzycki
          Warsaw University of Technology, Institute of Computer Science, Poland
10:25AM   Benchmark Set Reduction for Cheap Empirical Algorithmic Studies [#309]
          Mustafa Misir
          Istinye University; Duke Kunshan University, Turkey
10:35AM   Blending Dynamic Programming with Monte Carlo Simulation for Bounding the Running
          Time of Evolutionary Algorithms [#364]
          Kirill Antonov, Maxim Buzdalov, Arina Buzdalova and Carola Doerr
          ITMO University, Russia; Sorbonne Universite, France
10:45AM   Using Double Well Function as a Benchmark Function for Optimization Algorithm [#380]
          Peng Wang and Guosong Yang
          Southwest Minzu University, China; Chengdu Institute of computer application, Chinese
          Academy of Sciences, China

**Special Session SS9: Data-Driven Evolutionary Optimization of Computationally Expensive
Problems**
Wednesday, June 30, 10:05AM-11:15AM, Room 4, Chair: Marcin Wozniak

10:05AM   A Population Prescreening Strategy for Kriging-Assisted Evolutionary Computation [#75]
          Dawei Zhan and Huanlai Xing
          Southwest Jiaotong University, China
10:15AM   Surrogate-assisted Reference Vector Adaptation to Various Pareto Front Shapes for Many-
          objective Bayesian Optimization [#233]
          Nobuo Namura
          Jiteki Lab, Japan
10:25AM   A Data-Driven Multi-Objective Evolutionary Algorithm Based on Combinatorial Parallel
          Infilling Criterion [#259]
          Chunna Li, Lianbo Yang and Chunlin Gong
          Northwestern Polytechnical University, China
10:35AM   Hyper-Parameter Optimization for Deep Learning by Surrogate-based Model with Weighted
          Distance Exploration [#337]
          Zhenhua Li and Christine Shoemaker
          Nanjing University of Aeronautics and Astronautics, China; National University of
          Singapore, Singapore
10:45AM   Multi-Objective Evolutionary Design of Composite Data-Driven Models [#545]
          Iana Polonskaia, Nikolay Nikitin, Ilia Revin, Pavel Vychuzhanin and Anna Kalyuzhnaya
          Natural Systems Simulation Lab, ITMO University, Russian Federation

Special Session SS5-I: Evolutionary Deep Learning and Applications - I
Wednesday, June 30, 10:05AM-11:15AM, Room 5, Chair: Yanan Sun

10:05AM   A Flexible Variable-length Particle Swarm Optimization Approach to Convolutional Neural Network Architecture Design [#136]

Junhao Huang, Bing Xue, Yanan Sun and Mengjie Zhang

Victoria University of Wellington, New Zealand; Sichuan University, China

10:15AM   Two-Stage Genetic Algorithm for Designing Long Short Term Memory (LSTM) Ensembles [#382]

Ramya Anasseriyil Viswambaran, Gang Chen, Bing Xue and Mohammad Nekooei

Victoria University of Wellington, New Zealand

10:25AM   A Survey of Advances in Evolutionary Neural Architecture Search [#417]

Xun Zhou, A.K. Qin, Yanan Sun and Kay Chen Tan

Department of Computer Science, City University of Hong Kong, Hong Kong; Department of Computer Science and Software Engineering, Swinburne University of Technology, Australia; College of Computer Science, Sichuan University, China; Department of Computing, Hong Kong Polytechnic University, Hong Kong

10:35AM   Evolutionary Hyperparameter Optimisation for Sentence Classification [#374]

Brendan Rogers, Nasimul Noman, Stephan Chalup and Pablo Moscato

University of Newcastle, Australia

10:45AM   Evolutionary Neural Architecture Search by Mutual Information Analysis [#375]

Shizuma Namekawa and Taro Tezuka

University of Tsukuba, Japan

Session R10: Real World Applications - III

Wednesday, June 30, 10:05AM-11:15AM, Room 6, Chair: Amina Abdullahi, Mounir Hafsa

10:05AM   New Evolutionary Method for Studying Physical Properties of Magneto Caloric Materials [#57]

Anna Ouskova Leonteva, Radia Hamane, Michel Risser, Anne Jeannin-Girardon, Pierre Parrend and Pierre Collet

University of Strasbourg, ICUBE Lab, France; University of Caen, Crismat Lab, France; Ubiblue Company, France; ECAM Strasbourg Europe, ICUBE Lab, France

10:15AM   A Binary NSGA-II Model for De-clustering Seismicity of Turkey and Chile [#424]

Ashish Sharma, Satyasai Jagannath Nanda and Rahul Kumar Vijay

Department of Electronics and Communication Engineering, Malaviya National Institute of Technology, Jaipur-302017, India, India; Department of Computer Science and Engineering, Banasthali Vidyapith, Rajasthan-304022,India, India

10:25AM   Predicting Disease Outbreaks with Climate Data [#180]

Geoff Nitschke and Amina Abdullahi

University of Cape Town, South Africa

10:35AM   A Multi-Objective Evolutionary Approach to Professional Course Timetabling: A Real-World Case Study [#334]

Mounir Hafsa, Pamela Wattebled, Julie Jacques and Laetitia Jourdan

Mandarine Academy, Univ. Lille, CNRS Centrale Lille, UMR-9189 CRIStAL, France; Mandarine Academy, France; Lille Catholic University, FGES, Univ. Lille, CNRS Centrale Lille, UMR-9189 CRIStAL, France; Univ. Lille, CNRS Centrale Lille, UMR-9189 CRIStAL, France

10:45AM   Geometry Assisted Energy Efficient Sweep Coverage Algorithm For Wireless Sensor Networks [#395]

Fuyou Li, Dong Bei, Wu Xiaojun and Xu Hongshang

Shaanxi Normal University, China

10:55AM   Three-Dimensional Robot Motion Design by Combining Interactive and Non-Interactive
          Evolutionary Computation for an Intelligent Transformable Phone Robot: BaBi [#459]
          Jiansheng Liu, Satoshi Ono and Bilan Zhu
          Kagoshima University, Japan

Panel Session PD1: Panel Discussion: Evolutionary Computation in Real-World Applications
Wednesday, June 30, 11:30AM-12:30PM, Room 1, Chair: Amir H. Gandomi

Session R11: Large-scale Optimization and Data-mining
Wednesday, June 30, 1:00PM-2:00PM, Room 1, Chair: Szymon Łukasik

1:00PM   Fuzzy Filtering in Large-Scale Prediction of Intrinsically Disordered Regions of Proteins on
         Apache Spark [#352]
         Bozena Malysiak-Mrozek, Lukasz Bozek and Dariusz Mrozek
1:10PM   A Hybrid Dimension Reduction Based Linear Discriminant Analysis for Classification of
         High-Dimensional Data [#82]
         Zorarpaci Ezgi
         Iskenderun Technical University, Turkey
1:20PM   3D-RadViz: Three Dimensional Radial Visualization for Large-Scale Data Visualization
         [#505]
         Abdelrahman Elewah, Abeer A.Badawi, Haytham Khalil, Shahryar Rahnamayan and Khalid
         Elgazzar
         Ontario Tech University, Canada
1:30PM   Enhancing Cooperative Coevolution for Large Scale Optimization by Exploiting
         Decomposition Solutions [#443]
         An Chen, Zhigang Ren, Yongsheng Liang and Daofu Guo
         Xi'an Jiaotong University, China
1:40PM   Using MajorClust Algorithm for Sandbox-based ATM Security [#95]
         Michal Maliszewski and Urszula Boryczka
         Diebold Nixdorf, Poland; University of Silesia, Poland
1:50PM   An Exploration-only Exploitation-only Hybrid for Large Scale Global Optimization [#117]
         Antonio Bolufe-Rohler and Dania Tamayo-Vera
         University of Prince Edward Island, Canada; Thinking Big Inc., Canada

Session R12: Genetic Algorithms - II
Wednesday, June 30, 1:00PM-2:00PM, Room 2, Chair: Efren Mezura-Montes, Aaron Jimenez-Aparicio

1:00PM   A Multi-objective Approach to the Protein StructurePrediction Problem using the Biased
         Random-KeyGenetic Algorithm [#139]
         Felipe Marchi and Rafael Stubs Parpinelli
         UDESC, Brazil
1:10PM   A Biologically-Inspired Model of Mass Extinction in Genetic Algorithms [#310]
         Kaelan Engholdt and David Mathias
         University of Wisconsin - La Crosse, United States of America
1:20PM   IG-CEE: An Embedded Information Gain approach to Genetic Algorithms [#409]
         Alves Alexandre, Mendes Raphael, Gomes Matheus, Bertarini Pedro and Amaral Laurence
         Federal University of Uberlandia, Brazil

1:30PM   Evolutionary Algorithms for Searching Almost-Equienergetic Graphs [#437]
Aaron Jimenez-Aparicio, Efren Mezura-Montes and Hector-Gabriel Acosta-Mesa
University of Veracruz, Mexico
1:40PM   Distance-weighted Exponential Natural Evolution Strategy for Implicitly Constrained Black-Box Function Optimization [#399]
Masahiro Nomura, Nobuyuki Sakai, Nobusumi Fukushima and Isao Ono
Tokyo Institute of Technology, Japan
1:50PM   A Genetic Algorithm for the Nesting Problem With Continuous Rotations [#185]
Wesley Henrique Nunes, Mayron Moreira and Marina Andretta
Universidade Federal de Lavras, Brazil; Universidade de Sao Paulo, Brazil

Special Session SS57+42: Representation Learning and Automated Meta-heuristics
Wednesday, June 30, 1:00PM-2:00PM, Room 3, Chair: Carola Doerr, Nelishia Pillay

1:00PM   Machine Learning for Determining the Transition Point in Hybrid Metaheuristics [#126]
Antonio Bolufe-Rohler and Ye Yuan
University of Prince Edward Island, Canada
1:10PM   Automated Development of Latent Representations for Optimization of Sequences Using Autoencoders [#329]
Piotr Kaszuba, Maciej Komosinski and Agnieszka Mensfelt
Poznan University of Technology, Institute of Computing Science, Poland
1:20PM   Local Optima Network Sampling for Permutation Flowshop [#466]
Lucas Pavelski, Marie-Eleonore Kessaci and Myriam Delgado
Federal University of Technology - Parana, Brazil; Univ. Lille, CNRS - Centrale Lille - UMR 9189 - F-59000, France
1:30PM   The Effect of Sampling Methods on the Invariance to Function Transforms When Using Exploratory Landscape Analysis [#165]
Urban Skvorc, Tome Eftimov and Peter Korosec
Jozef Stefan Institute, Slovenia
1:40PM   A Neural Approach to Generation of Constructive Heuristics [#413]
Mohamad Alissa, Kevin Sim and Emma Hart
Edinburgh Napier University, United Kingdom
1:50PM   Automated Design of Unfolded Metaheuristics and the Effect of Population Size [#148]
Jorge M. Cruz-Duarte, Ivan Amaya, Jose C. Ortiz-Bayliss and Nelishia Pillay
Tecnologico de Monterrey, Mexico; University of Pretoria, South Africa

Session R13: Multi-objective Evolutionary Algorithms - II
Wednesday, June 30, 1:00PM-2:00PM, Room 4, Chair: Bilel Derbel, Amiram Moshaiov

1:00PM   Enhancing MOEA/D with Escape Mechanisms [#383]
Bilel Derbel, Geoffrey Pruvost and Byung-Woo Hong
Univ. Lille, CRIStAL, Inria, France; Chung-Ang University, Korea (South)
1:10PM   Revisiting Pareto-Optimal Multi- and Many-Objective Reference Fronts for Continuous Optimization [#398]
Gabriela Cavalcante da Silva, Elizabeth Wanner, Leonardo Bezerra and Thomas Stutzle
UFRN, Brazil; CEFET-MG, Brazil; Universite Libre de Bruxelles, Belgium
1:20PM   Investigating Constraint Relationship in Evolutionary Many-Constraint Optimization [#411]
Mengjun Ming, Rui Wang and Tao Zhang
National University of Defense Technology, China

1:30PM   Towards a More Balanced Reference Set Adaptation Method: First Results [#430]
Luis A. Marquez-Vega, Jesus Guillermo Falcon-Cardona and Edgar Covantes Osuna
Tecnologico de Monterrey, Mexico; UAM-Cuajimalpa, Mexico
1:40PM   Multi-Modal Multi-Objective Evolutionary Optimization for Problems with Solutions of Variable-Length [#450]
Amiram Moshaiov, Yosef Breslav and Eliran Farhi
Tel-Aviv University, Israel
1:50PM   An Empirical Study on the Use of the S-energy Performance Indicator in Mating Restriction Schemes for Multi-Objective Optimizers [#468]
Amin V. Bernabe Rodriguez and Carlos A. Coello Coello
CINVESTAV-IPN, Mexico

Session R14: Evolved Neural Networks - I
Wednesday, June 30, 1:00PM-2:00PM, Room 5, Chair: Maryam Parsa, Hayden Andersen

1:00PM   Comparative performances of Neural Networks of variant architectures trained with Backpropagation and Differential Evolution [#120]
Zakaria Oussalem, Rochan Avlur, Jahnavi Malagavalli and Arya Bhattacharya
Ecole Centrale Lille, France; Mahindra University, India
1:10PM   Fast Evolutionary Neural Architecture Search Based on Bayesian Surrogate Model [#196]
Rui Shi, Jianping Luo and Qiqi Liu
Shenzhen University, China; University of Surrey, United Kingdom
1:20PM   Multi-Objective Hyperparameter Optimization for Spiking Neural Network Neuroevolution [#224]
Maryam Parsa, Shruti Kulkarni, Mark Coletti, Jeffrey Bassett, J. Parker Mitchell and Catherine Schuman
Oak Ridge National Laboratory, United States of America; Independent Researcher, United States of America
1:30PM   Differential Evolution-based Neural Network Training Incorporating a Centroid-based Strategy and Dynamic Opposition-based Learning [#293]
Seyed Jalaleddin Mousavirad, Diego Oliva, Hinojosa Salvador and Schaefer Gerald
Hakim Sabzevari University, Iran; Universidad de Guadalajara, Mexico; Loughborough University, England
1:40PM   Evolving Neural Networks for Text Classification using Genetic Algorithm-based Approaches [#357]
Hayden Andersen, Sean Stevenson, Tuan Ha, Xiaoying Gao and Bing Xue
Victoria University of Wellington, New Zealand
1:50PM   Evaluating Anytime Performance on NAS-Bench-101 [#363]
Carlos Vieira, Leslie Perez Caceres and Leonardo C. T. Bezerra
Universidade Federal do Rio Grande do Norte, Brazil; Pontificia Universidad Catolica de Valparaiso, Chile

Session R15: Real World Applications - IV
Wednesday, June 30, 1:00PM-2:00PM, Room 6, Chair: Renan Mendes, Leonardo Moreira

1:00PM   Aggregation or Selection? Clustering Many Objectives for Vehicle Routing Problem with Demand Responsive Transport [#436]
Renan Mendes, Elizabeth Wanner, Flavio Martins and Kalyanmoy Deb
CEFET-MG, Brazil; Michigan State University, United States of America

1:10PM   Mitigating Attacks on Fake News Detection Systems using Genetic-Based Adversarial Training [#483]

Marcellus Smith, Brandon Brown, Gerry Dozier and Michael King

Auburn University, United States of America; Florida Institute of Technology, United States of America

1:20PM   Evaluation of Decision-making Strategies for Robots in Intralogistics Problems Using Multi-agent Planning [#497]

Leonardo Moreira and Celia Ralha

University of Brasilia, Brazil

1:30PM   Multi Objective UAV Network Deployment for Dynamic Fire Coverage [#503]

Kripash Shrestha, Rahul Dubey, Ashutosh Singandhupe, Sushil Louis and Hung La

University of Nevada Reno, USA, United States of America

1:40PM   Heuristic Strategies for Solving Complex Interacting Large-Scale Stockpile Blending Problems [#251]

Yue Xie, Aneta Neumann and Frank Neumann

The University of Adelaide, Australia

1:50PM   Detecting Anomalies in Daily COVID-19 Cases Data from Brazil Capitals using GSP Theory [#423]

Rodrigo Francisquini, Tiago Silva and Maria Nascimento

Universidade Federal de Sao Paulo (UNIFESP), Brazil

Session R16: Swarm Intelligence Algorithms - I
Wednesday, June 30, 2:05PM-3:15PM, Room 1, Chair: John Oyekan

2:05PM   Genetic Algorithm Assisted HIDMS-PSO: A New Hybrid Algorithm for Global Optimisation [#177]

Fevzi Tugrul Varna and Phil Husbands

University of Sussex, United Kingdom

2:15PM   Multi-Objective Optimisation of Robotic Active Particle Swarms for Continuous Repair of Large Scale High Value Structures [#442]

John Oyekan

The University of Sheffield, United Kingdom

2:25PM   A Niche Based Multi-objective Particle Swarm Optimizer [#182]

Jinglei Guo, Miaomiao Shao, Shouyong Jiang and Xinyu Zhou

School of Computer Science, Central China Normal University, China; School of Computer, University of Lincoln, United Kingdom; School of Computer and Information Engineering, Jiangxi Normal University, China

2:35PM   PSO with Coupled Map Lattice and Worker Ant's Law [#256]

Kanta Matsumoto and Chihiro Ikuta

NAIST, Nara Institute of Technology, Japan; NIT, Suzuka College, Japan

2:45PM   Optimal Train Speed Optimization under Several Safety Points by the PSO Algorithm [#29]

Liu Jun, Shi Tianyun, Ma Xiaoning, Xue Rui and Liu Min

Institute of Computing Technologies, Chinese Academy of Railway Sciences, China; CARS, China

2:55PM   Upper Bounds for Particle Location Variance Convergence Measures in the Stochastic Model of Particle Swarm [#132]

Krzysztof Wojcik, Tomasz Kulpa and Krzysztof Trojanowski

Cardinal Stefan Wyszynski University in Warsaw, Poland

3:05PM   A Population Size Dynamic Reduction Criterion in PSO Algorithms [#143]

Samuel Basilio, Afonso Lemonge and Erica Carvalho

Federal Center for Technological Education of Minas Gerais, Brazil; Federal University of Juiz de Fora, Brazil

Session R17: Heuristics, Meta-heuristics and Hyper-heuristics - I
Wednesday, June 30, 2:05PM-3:15PM, Room 2, Chair: Yan Pei, Tami Alghamdi

2:05PM   Cooperative Chaotic Evolution [#30]
Jun Yu, Zitong Wang and Yan Pei
Niigata University, Japan; University of Aizu, Japan

2:15PM   Fast Heuristics for Traveling Salesman Problems with Multiple Flying Sidekicks [#402]
Gustavo Delazeri and Marcus Ritt
Universidade Federal do Rio Grande do Sul, Brazil

2:25PM   Configuring the Perturbation Operations of an Iterated Local Search Algorithm for Cross-domain Search: A Probabilistic Learning Approach [#438]
Stephen Adubi, Olufunke Oladipupo and Oludayo Olugbara
Covenant University, Nigeria; Durban University of Technology, South Africa

2:35PM   An Evolutionary Computation Based Model for Testing Transfer Learning Strategies [#28]
Tami Alghamdi and Robert Heckendorn
Dept. Computer Science, United States of America

2:45PM   The Sectional Art Gallery and an Evolutionary Algorithm for Approaching Its Minimum Point Guard Problem [#102]
Fynn Terhar and Christian Icking
BMW Group, FernUniversitaet in Hagen, Germany; FernUniversitaet in Hagen, Germany

2:55PM   HIDMS-PSO with Bio-inspired Fission-Fusion Behaviour and a Quorum Decision Mechanism [#225]
Fevzi Tugrul Varna and Phil Husbands
University of Sussex, United Kingdom

3:05PM   Exponentially Decaying Explosion in Fireworks Algorithm [#222]
Maiyue Chen and Ying Tan
Peking University, China

Special Session SS41: Candidate Solutions Representation and Fitness Landscape Manipulation
Wednesday, June 30, 2:05PM-3:15PM, Room 3, Chair: Marco Nobile

2:05PM   If You Can't Beat It, Squash It: Simplify Global Optimization by Evolving Dilation Functions [#286]
Daniele M. Papetti, Daniel A. Ashlock, Paolo Cazzaniga, Daniela Besozzi and Marco S. Nobile
University of Milano-Bicocca, Italy; University of Guelph, Canada; University of Bergamo, Italy; Eindhoven University of Technology, Netherlands

2:15PM   The Impact Of Representation On The Optimization Of Marker Panels For Single-cell RNA Data [#197]
Andrea Tangherloni, Simone G. Riva, Simone Spolaor, Daniela Besozzi, Marco S. Nobile and Paolo Cazzaniga
University of Bergamo, Italy; University of Cambridge, United Kingdom; University of Milano-Bicocca, Italy; Eindhoven University of Technology, Netherlands

2:25PM   Cheating like the Neighbors: Logarithmic Complexity for Fitness Evaluation in Genetic Algorithms [#332]
Erik Pitzer and Michael Affenzeller
University of Applied Sciences Upper Austria, Austria

2:35PM   Ensembled Crossover based Evolutionary Algorithm for Single and Multi-objective Optimization [#451]

Shreya Sharma, Julian Blank, Kalyanmoy Deb and Bijaya Ketan Panigrahi

Indian Institute of Technology Delhi, India; Michigan State University, United States of America

2:45PM   Tackling the Subset Sum Problem with Fixed Size using an Integer Representation Scheme [#548]

Victor Parque

Waseda University, Japan

Special Session SS33: Advances in Decomposition-based Evolutionary Multi-objective Optimization (ADEMO)

Wednesday, June 30, 2:05PM-3:15PM, Room 4, Chair: Saúl Zapotecas-Martínez

2:05PM   Local Neighborhood-based Adaptation of Weights in Multi-Objective Evolutionary Algorithms based on Decomposition [#168]

Paulo Pinheiro Junqueira, Ivan Reinaldo Meneghini and Frederico Guimaraes

UFMG, Brazil; IFMG, Brazil

2:15PM   Weight Vector Arrangement Using Virtual Objective Vectors in Decomposition-based MOEA [#326]

Tomoaki Takagi, Keiki Takadama and Hiroyuki Sato

The University of Electro-Communications, Japan

2:25PM   A Dynamic Penalty Function within MOEA/D for Constrained Multi-objective Optimization Problems [#257]

Hugo Monzon Maldonado and Saul Zapotecas-Martinez

Technopro IT, Japan; Department of Applied Mathematics and Systems,UAM-Cuajimalpa, Mexico

2:35PM   Modified Decomposition Framework and Algorithm for Many-objective Topology and Weight Evolution of Neural Networks [#206]

Adham Salih and Amiram Moshaiov

Tel-Aviv University, Israel

2:45PM   Using a Genetic Algorithm-based Hyper-heuristic to Tune MOEA/D for a Set of Various Test Problems [#422]

Lie Meng Pang, Hisao Ishibuchi and Ke Shang

Southern University of Science and Technology, China

2:55PM   Inconstant Update of Reference Point Value for Parallel and Distributed MOEA/D [#275]

Mikiko Sato, Yuji Sato, Mads Midtlyng and Minami Miyakawa

Tokai University, Japan; Hosei University, Japan; Shinshu University, Japan

Session R18: Meta-modeling and Surrogate Models

Wednesday, June 30, 2:05PM-3:15PM, Room 5, Chair: Jonathan Fieldsend, Xiaofen Lu

2:05PM   Multi-objective Bayesian optimisation using an exploitative attainment front acquisition function [#487]

Finley Gibson, Everson Richard and Fieldsend Jonathan

University of Exeter, United Kingdom

2:15PM   Monitoring Water Resources through a Bayesian Optimization-based Approach using Multiple Surface Vehicles: The Ypacarai Lake Case Study [#88]

Federico Peralta, Samuel Yanes, Daniel Gutierrez Reina and Sergio Toral

University of Seville, Spain

2:25PM   Adaptation of Search Generations in Extreme Learning Assisted MOEA/D Based on Estimation Accuracy of Surrogate Model [#372]

       Koki Tsujino, Tomohiro Harada and Ruck Thawonmas

       Ritsumeikan University, Japan; Tokyo Metropolitan University, Japan

2:35PM   The Performance Effect of Model Accuracy on Classification-Assisted Evolutionary Algorithms [#535]

       Cao Chang, Lu Xiaofen, Li Yachen, Zhu Junda and Tang Ke

       Department of Computer Science and Engineering, Southern University of Science and Technology, China

2:45PM   Efficient Global Multi-Objective Aerodynamic Optimization Using Combined Multi-Point Infilling Strategy and Surrogate Models [#429]

       Yiming Yao and Xudong Yang

       School of Aeronautics, Northwestern Polytechnical University, China

Session R19: Finance and Economics
Wednesday, June 30, 2:05PM-3:15PM, Room 6, Chair: Oscar Cordon, Maisa Melo

2:05PM   A Genetic Algorithm For Investment Tracking With Stochastic Model Predictive Control [#207]

       Maisa Melo, Rodrigo Cardoso and Tales Jesus

       Formiga Campus of the Federal Institute of Minas Gerais, Brazil; Federal Center of Technological Education of Minas Gerais, Brazil

2:15PM   Hyperparameter Optimization: Comparing Genetic Algorithm against Grid Search and Bayesian Optimization [#84]

       Hussain Alibrahim and Simone Ludwig

       North Dakota State University, United States of America

2:25PM   A simulated IMO-DRSA approach for cognitive reduction in multiobjective financial portfolio interactive optimization [#484]

       Julio Cezar Soares Silva and Adiel Teixeira de Almeida-Filho

       Universidade Federal de Pernambuco, Brazil

2:35PM   Evaluation of Index Tracking portfolios during the COVID-19 pandemic [#486]

       Thiago Wanderley de Amorim, Julio Cezar Soares Silva and Adiel Teixeira de Almeida-Filho

       Universidade Federal de Pernambuco, Brazil

2:45PM   IPOP-CMA-ES and the Influence of Different Deviation Measures for Agent-Based Model Calibration [#285]

       Victor Vargas-Perez, Manuel Chica and Oscar Cordon

       University of Granada, Spain

Plenary Talk P3: Zbigniew Michalewicz (AI-based Business Applications and the EC Research)
Wednesday, June 30, 3:30PM-4:30PM, Room 1, Chair: Yew Soon Ong

Plenary Talk P4: Carlos Artemio Coello Coello (Lessons Learned after 25 Years Designing Multi-Objective Evolutionary Algorithms)
Wednesday, June 30, 4:45PM-5:45PM, Room 1, Chair: Hemant Singh

Special Track VT2: Krakow Virtual Tour
Wednesday, June 30, 6:00PM-7:00PM, Room 1, Chair: Janina Naskalska

Session R20: Evolutionary Games and Multi-agent Systems
Thursday, July 1, 9:00AM-10:00AM, Room 2, Chair: Yuhui Shi, Anirudh Suresh

9:00AM Multiple-Preys Pursuit based on Biquadratic Assignment Problem [#70]

Lijun Sun, Chao Lyu, Yuhui Shi and Chin-Teng Lin

University of Technology Sydney, Australia; Harbin Institute of Technology, China, China; Southern University of Science and Technology, China

9:10AM Necrotic Behavioral Control of Agent Behavior in the Iterated Prisoner's Dilemma [#279]

Amanda Saunders, Daniel Ashlock and Julie Greensmith

University of Guelph, Canada; University of Nottingham, United Kingdom

9:20AM Multi-objective Coevolution and Decision-making for Cooperative and Competitive Environments [#477]

Anirudh Suresh, Jaturong Kongmanee, Kalyanmoy Deb and Vishnu Naresh Boddeti

Michigan State University, United States of America

9:30AM The Effects of Initial Condition Selection on the Evolution of a Turn Circle Intercept Feedback Controller [#493]

Pavlos Androulakakis and Zachariah Fuchs

University of Cincinnati, United States of America

9:40AM The Predator's Purpose: Intention Perception in Simulated Agent Environments [#67]

Amani Maina-Kilaas, Cynthia Hom, Kevin Ginta and George Montanez

Harvey Mudd College, United States of America; Biola University, United States of America

Special Session SS43: Bilevel Optimization: Methods and Applications
Thursday, July 1, 9:00AM-10:00AM, Room 3, Chair: Bing Wang

9:00AM An Approximation-based Chemical Reaction Algorithm for Combinatorial Multi-Objective Bi-level Optimization Problems [#278]

Malek Abbassi, Abir Chaabani, Lamjed Ben Said and Nabil Absi

SMART Lab, Institut Superieur de Gestion de Tunis, Universite de Tunis, Tunisia. Mines Saint-Etienne, UnivClermont Auvergne, CNRS, UMR 6158 LIMOS, CMP, Departement SFL, F-13541 Gardanne, France, Tunisia; SMART Lab, Institut Superieur de Gestion de Tunis, universite de Tunis, Tunisia., Tunisia; SMART Lab, Institut Superieur de Gestion de Tunis, Universite de Tunis, Tunisia., Tunisia; Mines Saint-Etienne, UnivClermont Auvergne, CNRS, UMR 6158 LIMOS, CMP, Departement SFL, F-13541 Gardanne, France, France

9:10AM Comparing Expected Improvement and Kriging Believer for Expensive Bilevel Optimization [#361]

Bing Wang, Hemant Singh and Tapabrata Ray

University of New South Wales, Australia

9:20AM Transfer Learning Based Evolutionary Algorithm for Bi-level Optimization Problems [#195]

Lei Chen and Hai-Lin Liu

Guangdong University of Technology, China

9:30AM A Genetic Algorithm Approach to Compute Mixed Strategy Solutions for General Stackelberg Games [#311]

Srivathsa Gottipati and Praveen Paruchuri

International Institute of Information Technology, India

Special Session SS19: Evolutionary Multi-tasking
Thursday, July 1, 9:00AM-10:00AM, Room 4, Chair: Liang Feng

9:00AM A multifactorial evolutionary algorithm for minimum energy cost data aggregation tree in wireless sensor networks [#428]

Cong Dao Tran, Huy Hung Tran, Thi Tam Nguyen and Huynh Thi Thanh Binh

Hanoi University of Science and Technology, Viet Nam; VNU University of Science, Vietnam National University, Viet Nam

9:10AM Multi-Armed Bandits for Many-task Evolutionary Optimization [#431]

Tien Thanh Le, Van Cuong Le, Bao Thang Ta and Huynh Thi Thanh Binh

Hanoi University of Science and Technology, Viet Nam

9:20AM EMT-ReMO: Evolutionary Multitasking for High-Dimensional Multi-Objective Optimization via Random Embedding [#266]

Yinglan Feng, Liang Feng, Yaqing Hou, Kay Chen Tan and Sam Kwong

Department of Computer Science, City University of Hong Kong, Hong Kong; College of Computer Science, Chongqing University, China; College of Computer Science and Technology, Dalian University of Technology,, China; Department of Computing, The Hong Kong Polytechnic University, Hong Kong

9:30AM Multi-Task Learning for Multi-Objective Evolutionary Neural Architecture Search [#99]

Ronghong Cai and Jianping Luo

Shenzhen University, China

9:40AM A Multi-task Approach for Maximum Survival Ratio Problem in Large-Scale Wireless Rechargeable Sensor Networks [#327]

Cuong Le Van, Huong Tran Thi and Binh Huynh Thi Thanh

Hanoi University of Science and Technology, Viet Nam; VNU University of Science, Viet Nam

9:50AM An adaptive multi-objective multifactorial evolutionary algorithm based on mixture Gaussian distribution [#76]

Mengfan Xu, Zexuan Zhu, Yutao Qi, Lei Wang and Xiaoliang Ma

College of Computer Science and Software Engineering, Shenzhen University, Shenzhen 518060, China; School of Computer Science and Technology, Xidian University, Xi'an, 710071, China, China; Shenzhen Institutes of Advanced Technology (SIAT) of the Chinese Academy of Sciences (CAS), Shenzhen 518055, China, China

Special Session SS37: Multimodal Multiobjective Path Planing Optimization
Thursday, July 1, 9:00AM-10:00AM, Room 5, Chair: Jing Liang

9:00AM Multi-Objective A* Algorithm for the Multimodal Multi-Objective Path Planning Optimization [#37]

Bo Jin

Shenzhen University, China

9:10AM A New Encoding Mechanism Embedded Evolutionary Algorithm for UAV Route Planning [#116]

Nanjiang Dong, Rui Wang and Tao Zhang

College of System Engineering, National University of Defense Technology, China

9:20AM Path Planning based on Multi-objective Topological Map [#183]

Jiaqi Zhao, Zhijie Jia, Yong Zhou, Ruihao Zhang, Zeming Xie, Zikang Xu, Yuxin Li and Di Zhang

School of Computer Science and Technology China University of Mining and Technology, Xuzhou, China, China

9:30AM Evolutionary Ensemble Learning Using Multimodal Multi-objective Optimization Algorithm Based on Grid for Wind Speed Forecasting [#250]

Yi Hu, Jing Liang, Boyang Qu, Jie Wang, Yanli Wang and Panpan Wei

Zhengzhou University, China; Zhongyuan University of Technology, China

Special Session SS32-I: Real-World and Industry Applications of Evolutionary Computation - I
Thursday, July 1, 9:00AM-10:00AM, Room 6, Chair: Amir Gandomi

9:00AM   Particle Swarm Optimisation for Analysing Time-Dependent Photoluminescence Data [#142]

       Demelza Robinson, Qi Chen, Bing Xue, Michael Price, Paul Hume, Kai Chen, Justin Hodgkiss, Mengjie Zhang and Isabella Wagner

       Victoria University of Wellington, New Zealand

9:10AM   Exploiting Artificial Swarms for the Virtual Measurement of Backlash in Industrial Robots [#163]

       Eliana Giovannitti, Sayyidshahab Nabavi, Giovanni Squillero and Alberto Tonda

       Comau S.p.A., Italy; Islamic Azad university of Urmia, Iran; Politecnico di Torino, Italy; UMR 518 MIA, INRAE, France

9:20AM   Optimizing Parameters of Self-Organizing Model for Swarm Robots via Evolutionary Algorithms [#184]

       Zhicheng Zheng, Yanan Li, Xiaokang Lei and Xingguang Peng

       Northwestern Polytechnical University, China; Xi'an University of Architecture and Technology, China

9:30AM   A Multiobjective Optimization Approach for Reducing Air Traffic Collision Risk [#208]

       Qing Cai, Haojie Ang and Sameer Alam

       ATMRI, MAE, NTU, Singapore

9:40AM   Exploiting Linear Interpolation of Variational Autoencoders for Satisfying Preferences in Evolutionary Design Optimization [#291]

       Sneha Saha, Leandro L. Minku, Xin Yao, Bernhard Sendhoff and Stefan Menzel

       Honda Research Institute Europe GmbH, Germany; University of Birmingham, United Kingdom

9:50AM   Autonomous Monitoring System for Water Resources based on PSO and Gaussian Process [#324]

       Micaela Ten Kathen, Isabel Jurado, Daniel Gutierrez and Alejandro Tapia

       Universidad Loyola Andalucia, Spain; Universidad de Sevilla, Spain

Session R21: Genetic Algorithms - III
Thursday, July 1, 10:05AM-11:15AM, Room 2, Chair: Tobias Benecke, Michal Przewozniczek

10:05AM   Fitness Caching - From a Minor Mechanism to Major Consequences in Modern Evolutionary Computation [#205]

       Michal Przewozniczek and Marcin Komarnicki

       Department of Computational Intelligence; Wroclaw University of Science and Technology, Poland

10:15AM   Genetic Algorithm with Multiple Fitness Functions for Generating Adversarial Examples [#209]

       Chenwang Wu, Wenjian Luo, Nan Zhou, Peilan Xu and Tao Zhu

       University of Science and Technology of China, China; Harbin Institute of Technology, China; University of South China, China

10:25AM   Tracking the Heritage of Genes in Evolutionary Algorithms [#216]

       Tobias Benecke and Sanaz Mostaghim

       Otto-von-Guericke University, Germany

10:35AM   A Genetic Algorithm for Scheduling Splittable Tasks with Precedence Constraints [#446]

       Yuanliang Gao and Sheung-Hung Poon

University of Nottingham, Ningbo China, China

10:45AM Loading is the Key: A Novel Genetic Quantum Algorithm for SDVRP [#536]

Weijian Ma, Xinyuan Zhang, Yichen Xu and Fei Gao

Beijing University of Posts and Telecommunications, China; Tsinghua University, China

10:55AM Genetic Algorithms for Error Mitigation in Quantum Measurement [#433]

Giovanni Acampora, Michele Grossi and Autilia Vitiello

University of Naples Federico II, Italy; IBM Italy, Italy

Special Session SS16-II: Evolutionary Scheduling and Combinatorial Optimisation - II
Thursday, July 1, 10:05AM-11:15AM, Room 3, Chair: Yi Mei

10:05AM Quantum-Inspired Differential Evolution for Resource-Constrained Project-Scheduling: Preliminary Study [#376]

Hatem M.H. Saad, Ripon K. Chakrabortty and Saber Elsayed

Capability Systems Centre, School of Engineering and IT, The University of New South Wales, Canberra, ACT, Australia, Australia; School of Engineering and IT, The University of New South Wales, Canberra, ACT, Australia, Australia

10:15AM Preferred Solutions of the Ground Station Scheduling Problem using NSGA-III with Weighted Reference Points Selection [#465]

Margarita Antoniou, Gasper Petelin and Gregor Papa

Jozef Stefan Institute, Jozef Stefan Intl. Postgraduate School, Slovenia

10:25AM Genetic Programming with Algebraic Simplification for Dynamic Job Shop Scheduling [#162]

Sai Panda and Yi Mei

Victoria University of Wellington, New Zealand

10:35AM A Dynamic Multiagent Genetic Algorithm for Optimal Charging in Wireless Rechargeable Sensor Networks [#51]

Yating Cao, Jing Liu and Zhouwu Xu

Xidian University, China

10:45AM Learning Initialisation Heuristic for Large Scale Vehicle Routing Problem with Genetic Programming [#517]

Joao Guilherme Cavalcanti Costa, Yi Mei and Mengjie Zhang

Victoria University of Wellington, New Zealand

10:55AM Look-Ahead Genetic Programming for Uncertain Capacitated Arc Routing Problem [#175]

Jordan MacLachlan and Yi Mei

Victoria University of Wellington, New Zealand

11:05AM Achieving Multi-Objective Scheduling of Heterogeneous Workflows inCloud through a Genetic Programming Based Approach [#494]

Yongbo Yu, Hui Ma and Gang Chen

Victoria University of Wellington Faculty of Science, New Zealand

Special Session SS21: Evolutionary Many-objective Optimization: Methods and Application
Thursday, July 1, 10:05AM-11:15AM, Room 4, Chair: Rui Wang

10:05AM An Adaptive Formulation-based Many-Objective Evolutionary Algorithm for Multi-Scenario Optimization in Data Enrichment [#89]

Liang Fan, Xudong Feng and Handing Wang

Xidian University, China; Science and Technology on Altitude Simulation Laboratory, AECC Sichuan Gas Turbine Establishment, China

10:15AM A Many-Objective Evolutionary Algorithm Based on New Angle Penalized Distance [#190]

Fang Junchao and Fang Wei

Jiangnan University, China

10:25AM Multi-objective Tabu-based Differential Evolution for Teleportation of Smart Virtual Machines in Private Computing Clouds [#467]

Jerzy Balicki and Piotr Dryja

Warsaw University of Technology, Poland; Gdansk University of Technology, Poland

10:35AM Periodical Generation Update using an Unbounded External Archive for Multi-Objective Optimization [#514]

Longcan Chen, Lie Meng Pang, Hisao Ishibuchi and Ke Shang

Southern University of Science and Technology, China

10:45AM Comparing Selection Hyper-Heuristics for Many-Objective Numerical Optimization [#167]

Sandra Venske, Carolina Almeida and Myriam Delgado

Federal University of Technology - Parana (Utfpr), Brazil; Midwestern Parana State University (Unicentro), Brazil

10:55AM A Visualisation Method for Pareto Front Approximations in Many Objective Optimisation [#316]

Kai Wu and Panoutsos George

University of Sheffield, United Kingdom

Special Session SS61: Niching Methods for Multimodal Optimization
Thursday, July 1, 10:05AM-11:15AM, Room 5, Chair: Ali Ahrari

10:05AM A Reinforcement-Learning-Based Evolutionary Algorithm Using Solution Space Clustering For Multimodal Optimization Problems [#59]

Hai Xia, Changhe Li, Sanyou Zeng, Qingshan Tan, Junchen Wang and Shengxiang Yang

School of Automation, China University of Geosciences, Wuhan, 430074; Hubei Key Laboratory of Advanced Control and Intelligent Automation for Complex Systems, China; School of Mechanical Engineering and Electronic Information China University of Geosciences, Wuhan, 430074, China; School of Computer Science and Informatics, De Montfort University, Leicester, LE1 9BH, United Kingdom

10:15AM Helper Objective Assisted Evolutionary Algorithm for Multi-modal Optimization [#330]

Xu Yang, Rui Wang and Li Wenhua

College of System Engineering, National University of Defense Technology, Changsha, P.R. China, China

10:25AM A Knowledge Transfer-Based Evolutionary Algorithm for Multimodal Optimization [#392]

Wenhao Du, Zhigang Ren, An Chen and Hanqing Liu

Xi'an Jiaotong University, China

10:35AM A Survey of Nearest-Better Clustering in Swarm and Evolutionary Computation [#20]

Wenjian Luo, Xin Lin, Jiajia Zhang and Mike Preuss

Harbin Institute of Technology, Shenzhen, China; University of Science and Technology of China, China; Leiden University, Netherlands

10:45AM Attention-oriented Brain Storm Optimization for Multimodal Optimization Problems [#236]

Jian Yang and Yuhui Shi

Southern University of Science and Technology, China

10:55AM A Modified APSODEE for Large Scale Optimization [#34]

Dongyang Li, Weian Guo, Lei Wang and Qidi Wu

Tongji University, China

Special Session SS32-II: Real-World and Industry Applications of Evolutionary Computation - II
Thursday, July 1, 10:05AM-11:15AM, Room 6, Chair: Amir Gandomi

10:05AM Design of Cyclone Dust Separators: A Constrained Multiobjective Optimization Perspective [#322]

Aljosa Vodopija, Beate Breiderhoff, Boris Naujoks and Bogdan Filipic

Jozef Stefan Institute, Slovenia; Technische Hochschule Koln, Germany

10:15AM Advancing Genetic Programming via Information Theory [#317]

Aleksandr V Grin and Amir H Gandomi

Stevens Institute of Technology, United States of America; University of Technology Sydney, Australia

10:25AM An Evolutionary Framework for Real-Time Fraudulent Credit Detection [#321]

Behshad Mohebali, Gelareh Karbaschi, Amirhessam Tahmassebi, Anke Meyer-Baese and Amir H. Gandomi

Florida State University, United States of America; Purdue University Northwest Hammond, United States of America; University of Technology Sydney, Australia

10:35AM A Hybrid BRKGA Approach for the Two Stage Capacitated Facility Location Problem [#432]

Gabriel Souto, Igor Morais, Liss Faulhaber, Glaydston Ribeiro and Pedro Henrique Gonzalez

Federal Center for Technological Education of Rio de Janeiro - CEFET/RJ, Brazil; Federal University of Rio de Janeiro, Brazil

10:45AM Automatically Extracting Features Using Genetic Programming for Low-Quality Fish Image Classification [#187]

Zichu Yan, Ying Bi, Bing Xue and Mengjie Zhang

Victoria University of Wellington, New Zealand

10:55AM Contrapuntal composition and autonomous style development of organum motets by using AntsOMG [#519]

Chun-yien Chang and Ying-ping Chen

National Yang Ming Chiao Tung University, Taiwan

Session R22: Classification, Clustering, and Data-mining
Thursday, July 1, 1:00PM-2:00PM, Room 1, Chair: Benjamin Mario Sainz-Tinajero, Peng Wang

1:00PM Continuous Encoding for Community Detection in Attribute Networks with Preserving Node Information [#45]

Wei Zheng, Xin Liu and Jianyong Sun

School of Mathematics and Statistics, Xi'an Jiaotong University, China

1:10PM Evolutionary Clustering Algorithm Using Supervised Classifiers [#215]

Benjamin Mario Sainz-Tinajero, Andres Eduardo Gutierrez-Rodriguez, Hector G. Ceballos and Francisco J. Cantu-Ortiz

Tecnologico de Monterrey, School of Engineering and Science, Mexico

1:20PM Complexity-Based Lambda Layer for Time Series Prediction [#31]

Kenneth Brezinski and Ken Ferens

University of Manitoba, Canada

1:30PM A Grid-dominance based Multi-objective Algorithmfor Feature Selection in Classification [#191]

Peng Wang, Bing Xue, Jing Liang and Mengjie Zhang

Victoria University of Wellington, New Zealand; Zhengzhou University, China

1:40PM Evolving Simple Solutions to the CIFAR-10 Benchmark using Tangled Program Graphs [#355]

Robert Smith, Ryan Amaral and Malcolm Heywood

Dalhousie University, Canada

1:50PM   Hulling versus Clustering - Two Complementary Applications of Non-Negative Matrix Factorization [#241]

Sławomir T. Wierzchon and Mieczysław A. Kłopotek

Institute of Computer Science, Polish Academy Of Sciences, Poland

Special Session SS13: Games
Thursday, July 1, 1:00PM-2:00PM, Room 2, Chair: Alexander Dockhorn

1:00PM   Behavioral Cloning in Atari Games Using a Combined Variational Autoencoder and Predictor Model [#371]

Brian Chen, Siddhant Tandon, David Gorsich, Alex Gorodetsky and Shravan Veerapaneni

University of Michigan, United States of America; U.S. Army DEVCOM, United States of America

1:10PM   Portfolio Search and Optimization for General Strategy Game-Playing [#129]

Dockhorn Alexander, Hurtado-Grueso Jorge, Jeurissen Dominik, Xu Linjie and Perez-Liebana Diego

Queen Mary University of London, Great Britain

1:20PM   Coevolution of AI and Level Generators for Super Mario Game [#301]

Julius Flimmel, Jakub Gemrot and Vojtech Cerny

Charles University, Czech Republic

Special Session SS16-III: Evolutionary Scheduling and Combinatorial Optimisation - III
Thursday, July 1, 1:00PM-2:00PM, Room 3, Chair: Yi Mei

1:00PM   Investigating binary EAs for Passive In-Building Distributed Antenna Systems [#319]

Siddhartha Shakya, Kin Poon, Khawla AlShanqiti, Anis Ouali and Andrei Sleptchenko

EBTIC, Khalifa University, United Arab Emirates; Department of Engineering Systems & Management, Khalifa University, United Arab Emirates

1:10PM   An Evolutionary Hyper-Heuristic Approach to the Large Scale Vehicle Routing Problem [#226]

Joao Guilherme Cavalcanti Costa, Yi Mei and Mengjie Zhang

Victoria University of Wellington, New Zealand

1:20PM   Genetic Programming with Archive for Dynamic Flexible Job Shop Scheduling [#231]

Meng Xu, Fangfang Zhang, Yi Mei and Mengjie Zhang

Victoria University of Wellington, New Zealand

1:30PM   On the Application of Epsilon-Lexicase Selection in the Generation of Dispatching Rules [#419]

Lucija Planinic, Marko Durasevic and Domagoj Jakobovic

University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia

1:40PM   Cheapest Insertion and Disruption of Routes Operators for Solving Multi-Depot Electric Vehicle Location Routing Problem with Time Windows and Battery Swapping via GRASP and RVND [#488]

Braulio Portela, Heder Bernardino, Luciana Goncalves and Stenio Soares

Universidade Federal de Juiz de Fora, Brazil

1:50PM   Budget and SLA Aware Dynamic Workflow Scheduling in Cloud Computing with Heterogeneous Resources [#338]

Yifan Yang, Victoria Huang, Gang Chen, Hui Ma and Mengjie Zhang

School of Engineering and Computer Science,Victoria University of Wellington, New Zealand; School of Computing & Mathematical Sciences, University of Waikato, New Zealand

Special Session SS7: Large-scale Multi-/Many-objective Optimization and Its Applications
Thursday, July 1, 1:00PM-2:00PM, Room 4, Chair: Ali Ahrari

1:00PM   Large-scale Multiobjective Optimization via Problem Decomposition and Reformulation [#78]
Lianghao Li, Cheng He, Ran Cheng and Linqiang Pan
Huazhong University of Science and Technology, China; Southern University of Science and Technology, China

1:10PM   An Improved Weighted Optimization-based Framework for Large-scale MOPs [#106]
Junhao Zheng, Lingjie Li, Qiuzhen Lin and Zhong Ming
Shenzhen University, China

1:20PM   An improved MOEA/D framework with mult-operator strategies for multi-objective optimization problems with a large scale of variables [#253]
Zijian Cao, Chen Liu, Zhenyu Wang and Haowen Jia
Xian Technological University, China

1:30PM   Prediction Guided Meta-Learning for Multi-Objective Reinforcement Learning [#258]
Fei-Yu Liu and Chao Qian
University of Science and Technology of China, China; Nanjing University, China

1:40PM   Decision Space Scalability Analysis of Multi-Objective Particle Swarm Optimization Algorithms [#283]
Amirali Madani, Beatrice Ombuki-Berman and Andries Engelbrecht
Brock University, Canada; Stellenbosch University, South Africa

Special Session SS5-II: Evolutionary Deep Learning and Applications - II
Thursday, July 1, 1:00PM-2:00PM, Room 5, Chair: Yanan Sun

1:00PM   A Multi-Objective Grammatical Evolution Framework to Generate Convolutional Neural Network Architectures [#124]
Cleber Silva, Daniel Rosa, Pericles Miranda, Filipe Cordeiro, Tapas Si, Andre Nascimento, Rafael Ferreira Mello and Paulo Mattos Neto
UFRPE, Brazil; Bankura Unnayani Institute of Engineering, India; UFPE, Brazil

1:10PM   DES-HyperNEAT: Towards Multiple Substrate Deep ANNs [#260]
Amund Tenstad and Pauline C Haddow
The Norwegian University of Science and Technology, Norway

1:20PM   An Efficient and Flexible Automatic Search Algorithm for Convolution Network Architectures [#408]
Zhao Liang and Fang Wei
Jiangnan University, China

1:30PM   A Novel Evolving Classifier with a False Alarm Class for Speed Limit Sign Recognition [#511]
Pubudu Sanjeewani, Brijesh Verma and Joseph Affum
Central Queensland University, Australia; Transport Safety, Australian Road Research Board (ARRB), Australia

1:40PM   Smart Multi-Objective Evolutionary GAN [#521]
Marco Baioletti, Carlos Coello Coello, Gabriele Di Bari and Valentina Poggioni
University of Perugia, Italy; CINVESTAV, Mexico

1:50PM   Evolution of Generative Adversarial Networks Using PSO for Synthesis of COVID-19 Chest X-ray Images [#237]
Juan-Antonio Rodriguez-de-la-Cruz, Hector-Gabriel Acosta-Mesa and Efren Mezura-Montes
University of Veracruz, Mexico

Session R23: Biometrics, Bioinformatics and Biomedical Applications
Thursday, July 1, 1:00PM-2:00PM, Room 6, Chair: Herbert H Tsang, Matthew Witten

1:00PM   SIMARD-LinearFold: Long Sequence RNA Design with Simulated Annealing [#188]
             Ryan McBride and Herbert H Tsang
             Trinity Western University, Canada

1:10PM   Score Level Fusion of Multimodal Biometrics Using Genetic Algorithm [#414]
             Shadab Ahmad, Rajarshi Pal and Avatharam Ganivada
             University of Hyderabad, India; Institute for Development and Research in Banking
             Technology, India

1:20PM   Optimally Weighted Ensembles in Model-Based Regression for Drug Discovery [#441]
             Patrick Echtenbruck, Michael Emmerich, Martina Echtenbruck and Boris Naujoks
             Cologne University of Applied Sciences, Germany; Leiden University, Netherlands

1:30PM   The Effect of Mask Usage on Viral Immune Escape Times: An Evolutionary Strategies-
             Inspired Model [#138]
             Matthew Witten and Owen Clancey
             NYU Langone Hospital-Long Island, United States of America

Session R24: Swarm Intelligence Algorithms - II
Thursday, July 1, 2:05PM-3:15PM, Room 1, Chair: Kyle Robert Harrison, John Sheppard

2:05PM   Tournament Topology Particle Swarm Optimization [#152]
             Jason Kuo and John Sheppard
             Johns Hopkins University, United States of America; Montana State University, United States
             of America

2:15PM   Investigating Knowledge-Based Exploration-Exploitation Balance in a Minimalist Swarm
             Optimiser [#158]
             Mohammad Majid al-Rifaie
             University of Greenwich, United Kingdom

2:25PM   A Novel Sampling Method with Levy Flight for Distribution-Based Discrete Particle Swarm
             Optimization [#533]
             Koya Ihara and Shohei Kato
             Nagoya Institute of Technology, Japan

2:35PM   Predicting Particle Swarm Optimization Control Parameters From Fitness Landscape
             Characteristics [#220]
             Cody Dennis, Beatrice Ombuki-Berman and Andries Engelbrecht
             Brock University, Canada; Stellenbosch University, South Africa

2:45PM   Visualizing and Characterizing the Parameter Configuration Landscape of Particle Swarm
             Optimization using Physical Landform Classification [#193]
             Kyle Robert Harrison, Beatrice M. Ombuki-Berman and Andries P. Engelbrecht
             University of New South Wales, Australia; Brock University, Canada; Stellenbosch University,
             South Africa

2:55PM   An Exploration of Asocial and Social Learning in the Evolution of Variable-length Structures
             [#212]
             Michael O'Neill and Anthony Brabazon
             University College Dublin, Ireland

3:05PM   A Graph-based Approach for Shepherding Swarms with Limited Sensing Range [#531]
             Reem E. Mohamed, Saber Elsayed, Robert Hunjet and Hussein Abbass
             University of New South Wales, Australia; Defence Science and Technology Group, Australia

Session R25: Heuristics, Meta-heuristics and Hyper-heuristics - II
Thursday, July 1, 2:05PM-3:15PM, Room 2, Chair: Stephen Chen, Antonio Chaves

2:05PM   A Random Walk Analysis of Search in Metaheuristics [#24]
         Stephen Chen, Shehnaz Islam, Antonio Bolufe Rohler, James Montgomery and Tim Hendtalss
         York University, Canada; University of Prince Edward Island, Canada; University of
         Tasmania, Australia; Swinburne University of Technology, Australia

2:15PM   An Adaptive and Near Parameter-Free BRKGA Using Q-Learning Method [#55]
         Antonio Chaves and Luiz Lorena
         Univ Fed of Sao Paulo, Brazil

2:25PM   A Multi-objective Iterated Local Search Approach to Solve the Insular Traveling Salesman
         Problem [#135]
         Sebastian Rodriguez-Zbinden, Elizabeth Montero, Carola Blazquez and Pablo Miranda
         Universidad Tecnica Federico Santa Maria, Chile; Universidad Andres Bello, Chile;
         Universidad Catolica del Norte, Chile

2:35PM   Two Stage Quantum Optimization for the School Timetabling Problem [#333]
         Otto Pires, Rafael de Santiago and Jerusa Marchi
         Universidade Federal de Santa Catarina, Brazil

2:45PM   iSklearn: Automated Machine Learning with irace [#365]
         Carlos Vieira, Adelson Araujo, Jose E. Andrade Junior and Leonardo C. T. Bezerra
         Universidade Federal do Rio Grande do Norte, Brazil; University of Twente, Netherlands

2:55PM   Intelligent-Guided Adaptive Search For The Traveling Backpacker Problem [#367]
         Calvin Rodrigues da Costa and Maria Nascimento
         Universidade Federal de Sao Paulo, Brazil

3:05PM   Cultural Weight-Based Fish School Search: A Flexible Optimization Algorithm For
         Engineering [#217]
         Joao L. Vilar-Dias, M. A. S. Galindo and Fernando B. Lima-Neto
         University of Pernambuco, Brazil

Special Session SS35+36: Evolutionary Computation and Learning for Software
Thursday, July 1, 2:05PM-3:15PM, Room 3, Chair: Inmaculada Medina-Bulo, Manuel Nunez

2:05PM   Unsupervised Learning for Refactoring Pattern Detection [#304]
         Paulo Roberto Farah, Thaina Mariani, Enrique Augusto Roza, Rogerio C. Silva and Silvia
         Regina Vergilio
         UFPR, Brazil

2:15PM   Performance Testing Using a Smart Reinforcement Learning-Driven Test Agent [#554]
         Mahshid Helali Moghadam, Golrokh Hamidi, Markus Borg, Mehrdad Saadatmand, Markus
         Bohlin, Bjorn Lisper and Pasqualina Potena
         RISE Research Institutes of Sweden / Malardalen University, Sweden; Malardalen University,
         Sweden; RISE Research Institutes of Sweden, Sweden

2:25PM   Interactivity in the Generation of Test Cases with Evolutionary Computation [#119]
         Aurora Ramirez, Pedro Delgado-Perez, Kevin J. Valle-Gomez, Inmaculada Medina-Bulo and
         Jose Raul Romero
         University of Cordoba, Spain; University of Cadiz, Spain; University of Cordoba, Andalusian
         Research Institute in Data Science and Computacional Intelligence (DaSCI), Spain

2:35PM   Using Genetic Algorithms To Select Test Cases For Finite State Machines With Timeouts
         [#265]
         Miguel Benito-Parejo and Mercedes G. Merayo

Universidad Complutense de Madrid, Spain

2:45PM   Coverage-Based Grammar-Guided Genetic Programming Generation of Test Suites [#490]
Alfredo Ibias, Pablo Vazquez-Gomis and Miguel Benito-Parejo
Universidad Complutense de Madrid, Spain

2:55PM   Temporal Specification Mining for IEC 61499 Function Blocks Using Evolutionary Algorithms and Model Checking [#542]
Daniil Chivilikhin
ITMO University, Russia

Session R26: Multi-objective Evolutionary Algorithms - III
Thursday, July 1, 2:05PM-3:15PM, Room 4, Chair: Ke Shang, Ian Showalter

2:05PM   An Approximated Domination Relationship based on Binary Classifiers for Evolutionary Multiobjective Optimization [#53]
Hao Hao, Zhou Aimin and Zhang Hu
Shanghai Key Laboratory of Multidimensional Information Processing, School of Computer Science and Technology, East China Normal University, China; Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory, Beijing Electro-mechanical Engineering Institute, China

2:15PM   A Reduced Mixed Representation Based Multi-Objective Evolutionary Algorithm for Large-Scale Overlapping Community Detection [#61]
Yongkang Luo, Kening Zhang, Haipeng Yang, Feng Liu, Shuai Luo, Lei Zhang and Xiaoyan Sun
Anhui University, China; China University of Mining and Technology, China

2:25PM   Evolutionary Inherited Neuromodulated Neurocontrollers with Objective Weighted Ranking [#186]
Ian Showalter, Howard Schwartz and Sidney Givigi
Carleton University, Canada; Queens University, Canada

2:35PM   Hypervolume by Slicing Objective Algorithm: An Improved Version [#192]
Sumit Mishra, Srinibas Swain, Sangita Sarmah and Carlos A. Coello Coello
Department of Computer Science & Engineering, IIIT Guwahati, Assam - 781015, India, India; Departamento de Computacion, CINVESTAV-IPN, Mexico City, D.F. 07360, Mexico, Mexico

2:45PM   An Ensemble of Scalarizing Functions and Weight Vectors for Evolutionary Multi-Objective Optimization [#354]
Diana Cristina Valencia Rodriguez and Carlos Artemio Coello Coello
CINVESTAV-IPN, Mexico

2:55PM   A Two-stage Hypervolume Contribution Approximation Method Based on R2 Indicator [#379]
Yang Nan, Ke Shang, Hisao Ishibuchi and Linjun He
Southern University of Science and Technology, China

Session R27: Evolved Neural Networks - II
Thursday, July 1, 2:05PM-3:15PM, Room 5, Chair: Divya D. Kulkarni

2:05PM   Many Layer Transfer Learning Genetic Algorithm (MLTLGA): a New Evolutionary Transfer Learning Approach applied to Pneumonia Classification [#455]
Mendes Raphael, Alves Alexandre, Gomes Matheus, Bertarini Pedro and Amaral Laurence
Federal University of Uberlandia (UFU), Brazil

2:15PM   Building HVAC Control via Neural Networks and Natural Evolution Strategies [#32]
Karl Mason and Santiago Grijalva

National University of Ireland, Galway, Ireland; Georgia Institute of Technology, United States of America

2:25PM An Immune-Inspired Approach to Macro-Level Neural Ensemble Search [#273]

Luc Frachon, Wei Pang and George Coghill

Heriot-Watt University, United Kingdom; University of Aberdeen, United Kingdom

2:35PM Adaptive Navigation Strategies in Evolutionary Robotics Controllers with Location Perception [#22]

Antin Phillips and Mathys du Plessis

Nelson Mandela University, South Africa

2:45PM Deep Neural Network Guided Evolution of L-System Trees [#63]

Xuhao Chen and Brian Ross

Brock University, Canada

2:55PM An Immuno-Inspired Transfer Learning Paradigm [#538]

Divya D. Kulkarni and Shivashankar B. Nair

Indian Institute of Technology Guwahati, India

3:05PM Differential Evolution Neural Network Optimization with Individual Dependent Mechanism [#307]

Naoya Ikushima, Keiko Ono, Yuya Maeda, Erina Makihara and Yoshiko Hanada

Doshisha University, Japan; Kansai University, Japan

Session R28: Parallel and Distributed Algorithms

Thursday, July 1, 2:05PM-3:15PM, Room 6, Chair: Qiang Yang, Tanja Alderliesten

2:05PM Random Selection of Parameters in Asynchronous Pool-Based Evolutionary Algorithms [#56]

Mario Garcia-Valdez, Rene Marquez, Leonardo Trujillo and Juan Julian Merelo-Guervos

Instituto Tecnologico de Tijuana, Mexico; Universidad de Granada, Spain

2:15PM GPU-Accelerated Parallel Gene-pool Optimal Mixing Applied to Multi-Objective Deformable Image Registration [#274]

Anton Bouter, Tanja Alderliesten and Peter A.N. Bosman

Centrum Wiskunde & Informatica, Netherlands; Leiden University Medical Center, Netherlands

2:25PM Caching and Vectorization Schemes to Accelerate Local Search Algorithms for Assignment Problems [#373]

Mohammad Bagherbeik and Ali Sheikholeslami

University of Toronto, Canada

2:35PM Large Scale Distributed Optimization using Apache Spark: Distributed Scalable Shade-Bat (DistSSB) [#397]

Fahad Maqbool, Saad Razzaq, Asif Yar and Hajira Jabeen

University of Sargodha, Pakistan; University of Cologne, Germany

2:45PM Training Convolutional Neural Networks with Differential Evolution using Concurrent Task Apportioning on Hybrid CPU-GPU Architectures [#157]

Rochan Avlur, Oussalem Zakaria and Bhattacharya Arya

Mahindra University, India; Ecole Centrale Lille, France

2:55PM Parallel Evolutionary Algorithm for EEG Optimization Problems [#255]

Mohamed Meselhi, Saber Elsayed, Ruhul Sarker and Daryl Essam

University of New South Wales Canberra, Australia

Plenary Talk P5: Roman Słowiński (Evolutionary Multiobjective Optimization with Humans in the Loop)
Thursday, July 1, 3:30PM-4:30PM, Room 1, Chair: Sanaz Mostaghim

Plenary Talk P6: Risto Miikkulainen (Neuroevolution: A Synergy of Evolution and Learning)
Thursday, July 1, 4:45PM-5:45PM, Room 1, Chair: Yaochu Jin

Panel Session PD2: Journeys to Success within in the Computational Intelligence Industry
Thursday, July 1, 6:00PM-7:30PM, Room 1, Chair: Keeley Crockett