

Saturday, 10-Sep-2022

Location: Otto-Hahn-Straße 12 (building OH12)

09:00 - 16:30 Registration desk open (Foyer)

09:30 - 10:45 Workshop A (Room 3.031)

10:45 - 11:00 Coffee Break (Lecture Room E.003)

11:00 - 12:30 Workshop A (cont'd)

11:00 - 12:30 Tutorial 1 (Room 1.055)

11:00 - 12:30 Tutorial 2 (Room 1.056)

12:30 - 13:30 Lunch Break (Lecture Room E.003)

13:30 - 15:00 Tutorial 3 (Room 1.055)

13:30 - 15:00 Tutorial 4 (Room 1.056)

15:00 - 15:15 Coffee Break (Lecture Room E.003)

15:15 - 16:45 Tutorial 5 (Room 1.055)

15:15 - 16:45 Tutorial 6 (Room 1.056)

Workshop A:

Parallelism in Knowledge Transfer

Organizer: Abhishek Gupta, Amiram Moshaiov, Yaochu Jin

Tutorial 1:

A Gentle Introduction to Theory (for Non-Theoreticians)

Benjamin Doerr (École Polytechnique, France)

Tutorial 2:

Statistical Analyses for Single-Objective Stochastic Optimization Algorithms

Tome Eftimov & Peter Korošec (Jožef Stefan Institute, Slovenia)

Tutorial 3:

Real-world Applications of Dynamic Parameter Control in Evolutionary Computation

Gregor Papa (Jožef Stefan Institute, Slovenia)

Tutorial 4:

Runtime Analysis of Population-based Evolutionary Algorithms

Per Kristian Lehre (University of Birmingham, United Kingdom)

Tutorial 5:

Automated Algorithm Configuration and Selection with Sparkle

Koen van der Blom (Leiden University, Netherlands) & Jeroen Rook (University of Twente, Netherlands)

Tutorial 6:

Adversarial Deep Learning by Using Distributed Coevolutionary Computation

Jamal Toutou (University of Malaga, Spain) & Una-May O'Reilly (Massachusetts Institute of Technology, USA)

Sunday, 11-Sep-2022

Location: Otto-Hahn-Straße 12 (building OH12)

09:00 - 16:30 Registration desk open (Foyer)

09:15 - 10:45 Tutorial 7 (Room 1.056)

09:30 - 10:45 Workshop B (Room 1.055)

09:30 - 10:45 Workshop D (Room 3.031)

10:45 - 11:00 Coffee Break (Lecture Room E.003)

11:00 - 12:30 Tutorial 8 (Room 1.056)

11:00 - 12:30 Workshop B (cont'd)

11:00 - 12:30 Workshop D (cont'd)

12:30 - 13:30 Lunch Break (Lecture Room E.003)

13:30 - 15:00 Tutorial 9 (Room 1.056)

13:30 - 15:00 Workshop C (Room 1.055)

13:30 - 15:00 Workshop D (cont'd)

15:00 - 15:15 Coffee Break (Lecture Room E.003)

15:15 - 16:45 Tutorial 10 (Room 1.056)

15:15 - 16:45 Workshop C (cont'd)

15:15 - 16:45 Workshop D (cont'd)

Workshop B:

Good Benchmarking Practices for Evolutionary Computation

Organizer: Boris Naujoks, Benjamin Doerr, Carola Doerr, Pascal Kerschke, Olaf Mersmann, Mike Preuss

Workshop C:

25 Years of Leading Ones (and Other Great Ideas)

Organizer: Benjamin Doerr, Tobias Glasmachers, Thomas Jansen, Carsten Witt

Workshop D:

Data Science, Machine Learning and Optimization in Support of the Society of the Future

Organizer: Rohit Salgotra, Alma Rahat, Amiram Moshaiov

Tutorial 7:

Evolutionary Algorithms and Hyper-Heuristics

Nelishia Pillay (University of Pretoria, South Africa)

Tutorial 8:

Large-Scale Optimization and Learning

Mohammad Nabi Omidvar (University of Leeds, United Kingdom), Yuan Sun (Monash University, Australia),

Xiaodong Li (RMIT University, Australia)

Tutorial 9:

Decomposition Multi-Objective Optimization: Current Developments and Future Opportunities

Ke Li (University of Exeter, United Kingdom)

Tutorial 10:

Exploratory Landscape Analysis

Pascal Kerschke (TU Dresden, Germany) & Mike Preuss (Universiteit Leiden, The Netherlands)

Monday, 12-Sep-2022

Location: Emil-Figge-Straße 50 (building EF50)

08:00 - 10:00 Registration desk open (Foyer)

09:00 - 09:30 Opening Session

09:30 - 10:30 Keynote: Towards Automation of Selective Vineyard Operations (Project VINUM)
Claudio Semini (IIT, Genova, IT)

10:30 - 10:35 Walk to building IBZ ...

Location: Emil-Figge-Straße 59 (building IBZ)

10:15 - 17:30 Registration desk open

10:30 - 11:00 Coffee Break

11:00 - 12:30 Poster Session M1

12:30 - 13:00 Lunch Break

13:00 - 14:30 Poster Session M2

14:30 - 15:00 Coffee Break

15:00 - 17:30 Poster Session M3

19:00 - 22:00 Welcome Reception "Event Ship Walter" (Speicherstraße 90)

Poster Session M1

#1 Automated Algorithm Selection in Single-Objective Continuous Optimization: A Comparative Study Of Deep Learning and Landscape Analysis Methods

Raphael Patrick Prager, Moritz Vinzent Seiler, Heike Trautmann and Pascal Kerschke.

#2 Finding Knees in Bayesian Multi-Objective Optimization

Arash Heidari, Jixiang Qing, Sebastian Rojas Gonzalez, Jürgen Branke, Tom Dhaene and Ivo Couckuyt.

#3 A Continuous Optimisation Benchmark Suite from Neural Network Regression

Katherine Malan and Christopher Cleghorn.

#4 A novelty-search approach to filling an instance-space with diverse and discriminatory instances for the knapsack problem

Alejandro Marrero, Eduardo Segredo, Coromoto Leon and Emma Hart.

#5 Attention-Based Genetic Algorithm for Adversarial Attack in Natural Language Processing

Shasha Zhou and Ke Li.

#6 Evolutionary Design of Reduced Precision Preprocessor for Levodopa-Induced Dyskinesia Classifier

Martin Hurta, Michaela Drahosova and Vojtech Mrazek.

#7 Analysing the Fitness Landscape Rotation for Combinatorial Optimisation

Joan Alza, Mark Bartlett, Josu Ceberio and John McCall.

#8 Digging into Semantics: Where do search-based software repair methods search?

Hammad Ahmad, Padraic Cashin, Stephanie Forrest and Westley Weimer.

#9 A general architecture for interactive decomposition-based MOEAs

Giomara Larraga and Kaisa Miettinen.

#10 Recombination Weight based Selection in the DST-CMA-ES

Oswin Krause.

#11 Evolutionary Time Use Optimization for Improving Children's Health Outcomes

Yue Xie, Aneta Neumann, Ty Stanford, Charlotte Lund Rasmussen, Dorothea Dumuid and Frank Neumann.

#12* A First Runtime Analysis of the NSGA-II on a Multimodal Problem

Benjamin Doerr and Zhongdi Qu.

Remark: Papers marked with an * are nominated for the best paper award.

Poster Session M2

#1 Per-Run Algorithm Selection with Warm-starting Using Trajectory-based Features

Ana Kostovska, Anja Jankovic, Diederick Vermetten, Jacob de Nobel, Hao Wang, Tome Eftimov and Carola Doerr.

#2 Adaptive Function Value Warping for Surrogate Model Assisted Evolutionary Optimization

Amir Abbasnejad and Dirk Arnold.

#3 Evolutionary Approaches for the Generation of Instance-Spaces

Kevin Sim and Emma Hart.

#4 Co-Evolutionary Diversity Optimisation for the Traveling Thief Problem

Adel Nikfarjam, Aneta Neumann, Jakob Bossek and Frank Neumann.

#5 Evolving Through the Looking Glass: Learning Improved Search Spaces with Variational Autoencoders

Peter Bentley, Soo Ling Lim, Adam Gaier and Linh Tran.

#6 In-Materio Extreme Learning Machines

Benedict Jones, Noura Al Moubayed, Dagou Zeze and Chris Groves.

#7 Analysis of Search Landscape Samplers for Performance Prediction

Thomas Feutrier, Marie-Eleonore Kessaci and Nadarajen Veerapen.

#8 Gene-pool Optimal Mixing in Cartesian Genetic Programming

Joe Harrison, Tanja Alderliesten and Peter Bosman.

#9* Identifying stochastically non-dominated solutions using evolutionary computation

Hemant Singh and Juergen Branke.

#10 The (1+1)-ES Reliably Overcomes Saddle Points

Tobias Glasmachers.

#11 Iterated Local Search for the eBuses Charging Location Problem

César Loaiza Quintana, Laura Climent and Alejandro Arbelaez.

#12 Better Running Time of the Non-dominated Sorting Genetic Algorithm II (NSGA-II) by Using Stochastic Tournament Selection

Chao Bian and Chao Qian.

Remark: Papers marked with an * are nominated for the best paper award.

Poster Session M3

#1 Non-Elitist Selection Can Improve the Performance of Irace

Furong Ye, Diederick Vermetten, Carola Doerr and Thomas Bäck.

#2 Single Interaction Multi-Objective Bayesian Optimization

Juan Ungredda, Juergen Branke, Mariapia Marchi and Teresa Montrone.

#3 BBE: Basin-Based Evaluation of Multimodal Multi-Objective Optimization Problems

Jonathan Heins, Jeroen Rook, Lennart Schäpermeier, Pascal Kerschke, Jakob Bossek and Heike Trautmann.

#4 Computing High-Quality Solutions for the Patient Admission Scheduling Problem using Evolutionary Diversity Optimisation

Adel Nikfarjam, Amirhossein Moosavi, Aneta Neumann and Frank Neumann.

#5 Multi-objective Evolutionary Ensemble Pruning Guided by Margin Distribution

Yu-Chang Wu, Yi-Xiao He, Chao Qian and Zhi-Hua Zhou.

#6 On the impact of evaluation episode duration on the evolution of adaptive robots

Larissa Gremelmaier Rosa, Vitor Hugo Homem, Stefano Nolfi and Jônata Tyska Carvalho.

#7 Fractal Dimension and Perturbation Strength: A Local Optima Networks View

Sarah L. Thomson, Gabriela Ochoa and Sébastien Verel.

#8 Genetic programming for combining directional changes indicators in international stock markets

Xinpeng Long, Michael Kampouridis and Panagiotis Kanellopoulos.

#9 Direction Vector Selection for R2-based Hypervolume Contribution Approximation

Tianye Shu, Ke Shang, Yang Nan and Hisao Ishibuchi.

#10* Collective Learning of Low-Memory Matrix Adaptation for Large-Scale Black-Box Optimization

Qiqi Duan, Guochen Zhou, Chang Shao, Yijun Yang and Yuhui Shi.

#11 Multi-view clustering of heterogeneous health data: Application to systemic sclerosis

Adan Jose-Garcia, Julie Jacques, Alexandre Filiot, Julia Hanld, David Launay, Vincent Sobanski and Clarisse Dhaenens.

#12 Theoretical Study of Optimizing Rugged Landscapes with the cGA

Tobias Friedrich, Timo Kötzing, Frank Neumann and Aishwarya Radhakrishnan.

Remark: Papers marked with an * are nominated for the best paper award.

Tuesday, 13-Sep-2022

Location: Emil-Figge-Straße 50 (building EF50)

08:30 - 09:30 Registration desk open (Foyer)

09:00 - 10:00 Keynote: Evolutionary algorithms on complex networks
Doina Bucur, University of Twente, NL

10:00 - 10:05 Walk to building IBZ ...

Location: Emil-Figge-Straße 59 (building IBZ)

09:45 - 17:30 Registration desk open

10:00 - 10:30 Coffee Break

10:30 - 12:30 Poster Session T1

12:30 - 14:00 Lunch Break

14:00 - 15:30 Poster Session T2

15:30 - 16:00 Coffee Break

16:00 - 17:30 Poster Session T3

19:00 - 22:00 Conference Dinner "Rosenterrassen" (Strobelallee 41)

Poster Session T1

#1 Improving Nevergrad's Algorithm Selection Wizard NGOpt through Automated Algorithm Configuration

Risto Trajanov, Ana Nikolikj, Gjorgjina Cenikj, Fabien Teytaud, Mathurin Videau, Olivier Teytaud, Tome Eftimov, Manuel López-Ibáñez and Carola Doerr.

#2 A Systematic Approach to Analyze the Computational Cost of Robustness in Model-Assisted Robust Optimization

Sibghat Ullah, Hao Wang, Stefan Menzel, Bernhard Sendhoff and Thomas Bäck.

#3 Hybridizing Hypervolume-based Evolutionary Algorithms and Gradient Descent by Dynamic Resource Allocation

Damy Ha, Timo Deist and Peter Bosman.

#4 Cooperative Search Brings Benefits but Mimicry is Harmful in Complex Business Domains

Brandon Chin Woei Lim, Richard Allmendinger, Joshua Knowles, Ayesha Alhosani and Mercedes Bleda.

#5 Generalization and Computation for Policy Classes of Generative Adversarial Imitation Learning

Yirui Zhou, Yangchun Zhang, Xiaowei Liu, Wanying Wang, Zhengping Che, Zhiyuan Xu, Jian Tang and Yaxin Peng.

#6 Progress Rate Analysis of Evolution Strategies on the Rastrigin Function: First Results

Amir Omeradzic and Hans-Georg Beyer.

#7 HPO X ELA: Investigating Hyperparameter Optimization Landscapes by Means of Exploratory Landscape Analysis

Lennart Schneider, Lennart Schäpermeier, Raphael Patrick Prager, Bernd Bischl, Heike Trautmann and Pascal Kerschke.

#8 Importance-Aware Genetic Programming for Automated Scheduling Heuristics Learning in Dynamic Flexible Job Shop Scheduling

Fangfang Zhang, Yi Mei, Su Nguyen and Mengjie Zhang.

#9 Do We Really Need to Use Constraint Violation in Constrained Evolutionary Multi-Objective Optimization?

Shuang Li, Ke Li and Wei Li.

#10 Runtime Analysis of Simple Evolutionary Algorithms for the Chance-constrained Makespan Scheduling Problem

Feng Shi, Xiankun Yan and Frank Neumann.

#11 Specification-Driven Evolution of Floor Plan Design

Katarzyna Grzesiak-Kopeć, Barbara Strug and Grażyna Ślusarczyk.

#12* Escaping Local Optima With Local Search: A Theory-Driven Discussion

Tobias Friedrich, Timo Kötzing, Martin S. Krejca and Amirhossein Rajabi.

#13 Towards Efficient Multiobjective Hyperparameter Optimization: A Multiobjective Multi-Fidelity Bayesian Optimization and Hyperband Algorithm

Zefeng Chen, Yuren Zhou, Zhengxin Huang and Xiaoyun Xia.

Remark: Papers marked with an * are nominated for the best paper award.

Poster Session T2

#1 Revisiting Attention-based Graph Neural Networks for Graph Classification

Ye Tao, Ying Li and Zhonghai Wu.

#2 High Dimensional Bayesian Optimization with Kernel PCA

Kirill Antonov, Elena Raponi, Hao Wang and Carola Doerr.

#3 An Exact Inverted Generational Distance for Continuous Pareto Front

Zihan Wang, Chunyun Xiao and Aimin Zhou.

#4 Evolutionary Algorithm for Vehicle Routing with Diversity Oscillation Mechanism

Piotr Cybula, Andrzej Jaszkiewicz, Przemysław Pełka, Marek Rogalski and Piotr Sielski.

#5 Generative Models over Neural Controllers for Transfer Learning

James Butterworth, Rahul Savani and Karl Tuyls.

#6 Running Time Analysis of the (1+1)-EA using Surrogate Models on OneMax and LeadingOnes

Zi-An Zhang, Chao Bian and Chao Qian.

#7* Increasing the Diversity of Benchmark Function Sets through Affine Recombination

Konstantin Dietrich and Olaf Mersmann.

#8 Towards Discrete Phenotypic Recombination in Cartesian Genetic Programming

Roman Kalkreuth.

#9 Dynamic Multi-modal Multi-objective Optimization: A Preliminary Study

Yiming Peng and Hisao Ishibuchi.

#10 Runtime Analysis of the (1+1) EA on Weighted Sums of Transformed Linear Functions

Frank Neumann and Carsten Witt.

#11 Surrogate-assisted Multi-objective Optimization for Compiler Optimization Sequence Selection

Guojun Gao, Lei Qiao, Dong Liu, Shifei Chen and He Jiang.

#12 Population Diversity Leads to Short Running Times of Lexicase Selection

Thomas Helmuth, Johannes Lengler and William La Cava.

Remark: Papers marked with an * are nominated for the best paper award.

Poster Session T3

#1 Robust Neural Network Pruning by Cooperative Coevolution

Jia-Liang Wu, Haopu Shang, Wenjing Hong and Chao Qian.

#2 Efficient Approximation of Expected Hypervolume Improvement using Gauss-Hermite Quadrature

Alma Rahat, Tinkle Chugh, Jonathan Fieldsend, Richard Allmendinger and Kaisa Miettinen.

#3 Large-scale multi-objective influence maximisation with network downscaling

Elia Cunegatti, Giovanni Iacca and Doina Bucur.

#4 Evolutionary Algorithms for Limiting the Effect of Uncertainty for the Knapsack Problem with Stochastic Profits

Aneta Neumann, Yue Xie and Frank Neumann.

#5 HVC-Net: Deep Learning based Hypervolume Contribution Approximation

Ke Shang, Weiduo Liao and Hisao Ishibuchi.

#6 Runtime analysis of unbalanced block-parallel evolutionary algorithms

Brahim Aboutaib and Andrew Sutton.

#7 Neural Architecture Search: A Visual Analysis

Gabriela Ochoa and Nadarajen Veerapen.

#8 Obtaining Smoothly Navigable Approximation Sets in Bi-Objective Multi-Modal Optimization

Renzo J. Scholman, Anton Bouter, Leah R.M. Dickhoff, Tanja Alderliesten and Peter A.N. Bosman.

#9 Fair Feature Selection with a Lexicographic Multi-Objective Genetic Algorithm

James Brookhouse and Alex Freitas.

#10 General Univariate Estimation-of-Distribution Algorithms

Benjamin Doerr and Marc Dufay.

#11 Towards Fixed-Target Black-Box Complexity Analysis

Dmitry Vinokurov and Maxim Buzdalov.

#12* Two-Dimensional Drift Analysis: Optimizing Two Functions Simultaneously Can Be Hard

Duri Janett and Johannes Lengler.

Remark: Papers marked with an * are nominated for the best paper award.

Wednesday, 14-Sep-2022

Location: Emil-Figge-Straße 50 (building EF50)

08:30 - 09:30 Registration desk open (Foyer)

09:00 - 10:00 Keynote: Evolutionary Algorithms in the Context of Emerging Pervasive Data for Transport
Network Modelling

Travis Waller (TU Dresden, DE)

10:00 - 10:05 Walk to building IBZ ...

Location: Emil-Figge-Straße 59 (building IBZ)

09:45 - 14:00 Registration desk open

10:00 - 10:30 Coffee Break

10:30 - 12:00 Poster Session W1

12:00 - 12:30 Closing Session

12:30 - 14:00 Lunch Break

– end of conference –

Poster Session W1

#1 SemiGraphFL: A Semi-Supervised Graph Federated Learning Framework for Graph Classification
Ye Tao, Ying Li and Zhonghai Wu.

#2 Surrogate-assisted LSHADE algorithm utilizing Recursive Least Squares filter
Mateusz Zaborski and Jacek Mańdziuk.

#3 Multi-Objective Evolutionary Algorithm Based on the Linear Assignment Problem and the Hypervolume Approximation using Polar Coordinates (MOEA-LAPCO)
Diana Cristina Valencia Rodríguez and Carlos A. Coello Coello.

#4 Self-adaptation via Multi-objectivisation: An Empirical Study
Xiaoyu Qin and Per Kristian Lehre.

#5 Deep Reinforcement Learning with Two-Stage Training Strategy for Practical Electric Vehicle Routing Problem with Time Windows
Jinbiao Chen, Huanhuan Huang, Zizhen Zhang and Jiahai Wang.

#6 Self-adjusting Population Sizes for the $(1, \lambda)$ -EA on Monotone Functions
Marc Kaufmann, Maxime Larcher, Johannes Lengler and Xun Zou.

#7 New Solution Creation Operator in MOEA/D for Faster Convergence
Longcan Chen, Lie Meng Pang and Hisao Ishibuchi.

#8 T-DominO: Exploring Multiple Criteria with Quality-Diversity and the Tournament Dominance Objective
Adam Gaier, James Stoddart, Lorenzo Villaggi and Peter Bentley.

#9 Greedy Decremental Quick Hypervolume Subset Selection Algorithms
Andrzej Jaskiewicz and Piotr Zielniewicz.

#10 Analysis of Quality Diversity Algorithms for the Knapsack Problem
Adel Nikfarjam, Anh Viet Do and Frank Neumann.

#11 The Combined Critical Node and Edge Detection Problem. An Evolutionary Approach
Tamás Képes, Noémi Gaskó and Géza Vekov.

#12 Evolutionary Algorithms for Cardinality-Constrained Ising Models
Vijay Dhanjibhai Bhuvra, Duc-Cuong Dang, Liam Huber and Dirk Sudholt.