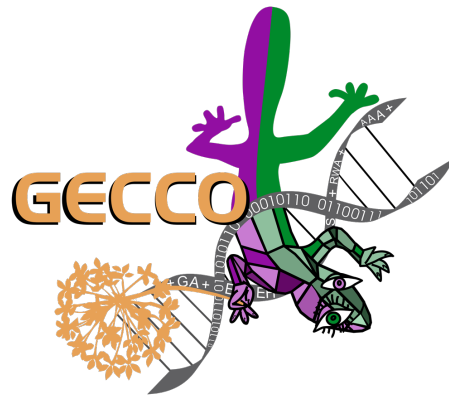


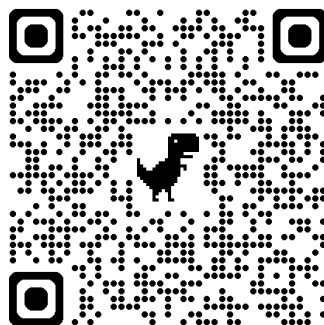


SHORT PROGRAM

Genetic and Evolutionary Computation Conference 2025 (GECCO 2025)

Málaga, Spain, July 14–18, 2025

Please fill in the mobility survey:



Association for
Computing Machinery

Advancing Computing as a Science & Profession



Last update: July 13, 2025

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GECCO is sponsored by the Association for Computing Machinery Special Interest Group for Genetic and Evolutionary Computation (SIGEVO). SIG Services: 2 Penn Plaza, Suite 701, New York, NY, 10121, USA, 1-800-342-6626 (USA and Canada) or +212-626-0500 (global).

Sponsors and Supporters

GECCO is organized and sponsored by SIGEVO, the Association for Computing Machinery Special Interest Group for Genetic and Evolutionary Computation.



GECCO 2025 gratefully acknowledges and thanks our sponsors and supporters:

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The University of Malaga (UMA), located on Spain's Mediterranean coast, is a dynamic institution committed to excellence in teaching, research, and knowledge transfer. With a strong international focus, UMA engages in global mobility and cooperation programs, hosting over 1,900 international students annually and collaborating with more than 800 partner universities worldwide. More than 350 active research groups drive innovation and generate high-impact knowledge, reinforcing UMA's role in academic and societal advancement

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CA22137 Randomised Optimisation Algorithms Research
Network (ROAR-NET)
<https://roar-net.eu/>

Schedule at a Glance

Monday, July 14	Tuesday, July 15	Wednesday, July 16	Thursday, July 17	Friday, July 18
Registration 08:30–19:00	Registration 08:30–19:00	Registration 08:30–19:00	Registration 09:30–19:00	Registration 09:30–13:00
Workshops and Tutorials 09:30–11:20	Workshops and Tutorials 09:30–11:20	Opening Session 09:45–10:30	Poster Session II Online: 09:30–10:30	Paper Sessions and HOP 10:00–11:30
Coffee break	Coffee break	Invited Keynote A. Alonso Betanzos 10:30–11:30	Invited Keynote Javier Del Ser 10:30–11:30	Coffee break
Workshops, Tutorials and Competitions 11:40–13:30	Workshops and Tutorials 11:40–13:30	Coffee break	Coffee break	Coffee break
Lunch (on your own) 13:30–15:00	Lunch (on your own) 13:30–15:00	Paper Sessions, HOP and ECiP 12:00–13:30	Paper Sessions, HOP and Impact 12:00–13:30	SIGEVO Keynote Marc Schoenauer 12:00–13:00
Workshops, Tutorials and Competitions 15:00–16:50	Workshops and Tutorials 15:00–16:50	Lunch (on your own) 13:30–15:30	Lunch (on your own) 13:30–15:30	Awards and Closing 13:10–14:30
Coffee break	Coffee break	Paper Sessions and HOP 15:30–17:00	Paper Sessions and Job Market 15:30–17:00	
Workshops and Tutorials 17:10–19:00	Workshops and Tutorials 17:10–19:00	Coffee break	Coffee break	
Women+@GECCO 19:10–21:10		Paper Sessions and HOP 17:30–19:00	Humies 17:30–19:00	
		Poster Session I Online: 19:30–20:30 Onsite: 19:30–22:00		
		Buffet Dinner (Patio Inglés) 20:00–21:00		
			Social Dinner (Baños del Carmen) 20:30–00:00	

- All times in this program are listed in CEST (UTC + 2 hours), Málaga's time zone during the conference.
- All sessions take place on Floor –1 (access next to reception), except those in Room Jábega (ground floor).
- Opening, Closing, Keynotes, Women+@GECCO, and Humies are in Arlequín + Tauromaquia.
- Poster Session I is in Patio Inglés.
- Both Poster Sessions include posters from tracks, late-breaking abstracts, and competitions.
- Coffee breaks are served in Patio Inglés.
- Lunch is on your own: outside food is not allowed in the hotel.

Parallel Sessions on Monday, July 14

	09:30–11:20	11:40–13:30	15:00–16:50	17:10–19:00
Arlequín & Tauromaquia		Competitions	Competitions	Student Workshop
Azul	<i>Miikkulainen, Risi, Ha, Tang:</i> Evolution of Neural Networks	10th Workshop on Industrial Applications of Metaheuristics	10th Workshop on Industrial Applications of Metaheuristics	<i>Sudholt, Squillero:</i> Theory and Practice of Population Diversity in Evolutionary Computation
Minotauro	Open Source Software for Evolutionary Computation	Good Benchmarking Practices for Evolutionary Computation	<i>Ishibuchi, Pang:</i> Fair Performance Comparison of Evolutionary Multi-Objective Algorithms	<i>Pillay:</i> Advances in Evolutionary Hyper-Heuristics
Malagüeta	<i>Deb, Saxena, Mittal:</i> Machine Learning Assisted Evolutionary Multi- and Many-objective Optimization	<i>Shir:</i> Introductory Mathematical Programming for EC	<i>Li:</i> Combinatorial Optimisation Can be Different from Continuous Optimisation for MOEAs	<i>Kononova, van Stein:</i> Structural Bias in Optimisation Algorithms
Alborán	<i>Vermetten, Doerr, de Nobel, Bäck:</i> Benchmarking Single- and Multi-Objective Optimization Algorithms: How to Make Your Experimental Data More Valuable	<i>Jaszkiewicz, Zielniewicz:</i> Recent Developments in Data Structures and Algorithms for Evolutionary Multiobjective Optimization	<i>Moraglio, Chicano:</i> Introduction to Quantum Optimization	<i>Machado, Correia:</i> Evolutionary Art and Design in the Machine Learning Era
Mena	Evolutionary Computing and Explainable AI Evolutionary Computation and Decision Making	28th International Workshop on Evolutionary Rule-based Machine Learning	28th International Workshop on Evolutionary Rule-based Machine Learning	<i>Whitley:</i> New, More Efficient Crossover and Local Search Operators for Recombination Lattices
Alcazaba	<i>Thierens, Bosman:</i> Model-Based Evolutionary Algorithms	<i>Cagnoni, Bi, Sun:</i> Evolutionary Computation and Evolutionary Deep Learning for Image Analysis, Signal Processing and Pattern Recognition	<i>Mei, Raidl:</i> Evolutionary Computation Meets Machine Learning for Combinatorial Optimization	<i>Couckuyt, Rojas Gonzalez, Branke:</i> Bayesian Optimization
Gibralfaro	<i>Xu, Li, Sun, Ye:</i> Intelligent Evolution Optimization: Guided from Deep Learning to Large Language Model	<i>Li:</i> Decomposition Multi-objective Optimization: What We Know from the Literature, and What We Are NOT Clear from a Data Science Perspective	<i>Doerr:</i> Tutorial: A Gentle Introduction to Theory (for Non-Theoreticians)	<i>Urbanowicz:</i> Automated Machine Learning Tools for Data Science, Modeling, and Algorithm Benchmarking
Jábega	<i>Lucas, Goodman, Tot:</i> Statistical Forward Planning Algorithms		<i>Rothlauf:</i> Representations for Evolutionary Algorithms	<i>Durasević, Gil Gala, Jakobović, Mei:</i> Genetic Programming as a Hyper-Heuristic for Solving Combinatorial Optimisation Problems



Introductory
Tutorial



Advanced
Tutorial



Workshop



Competitions

Parallel Sessions on Tuesday, July 15

	09:30–11:20	11:40–13:30	15:00–16:50	17:10–19:00
Arlequín & Tauromaquia	Student Workshop			
Azul	<i>Cenikj, Nikolikj, Eftimov:</i> Recent Advances in Meta-features Used for Representing Black-box Single-objective Continuous Optimization	Workshop on Black Box Optimization Benchmarking 2025	Workshop on Black Box Optimization Benchmarking 2025	Neuroevolution at Work
Minotauro	Decomposition Techniques in Evolutionary Optimization	Graph-based Genetic Programming	Workshop on Quantum Optimization	Workshop on Quantum Optimization
Malagüeta	Workshop on Surrogate-Assisted Evolutionary Optimisation	Workshop on Surrogate-Assisted Evolutionary Optimisation	Landscape-Aware Heuristic Search	Large Language Models for and with Evolutionary Computation Workshop
Alborán	<i>Neumann, Neumann, Singh:</i> Evolutionary Computation for Stochastic Problems	15th Workshop on Evolutionary Computation for the Automated Design of Algorithms	Evolving Self-Organisation	Evolving Self-Organisation
Mena	Analysing Algorithmic Behaviour of Optimisation Heuristics	Evolutionary Computing and Explainable AI	Symbolic Regression Workshop	Symbolic Regression Workshop
Alcazaba	<i>Qian:</i> Pareto Optimization for Subset Selection: Theories and Practical Algorithms	<i>Beyer:</i> What You Always Wanted to Know About Evolution Strategies, But Never Dared to Ask	Evolutionary Generative Models	<i>Banzhaf, Hu:</i> Linear Genetic Programming
Gibraltar	<i>XUE, Zhang:</i> Evolutionary Computation for Feature Selection and Feature Construction	<i>Toutouh, O'Reilly:</i> Coevolutionary Computation for Adversarial Deep Learning	<i>Rook, López-Ibáñez:</i> Advanced Use of Automatic Algorithm Configuration: Single- and Multi-Objective Approaches	<i>Coello Coello:</i> Constraint-Handling Techniques used with Evolutionary Algorithms
Jábega	<i>Kalkreuth, Cussat-Blanc, Wilson:</i> Cartesian Genetic Programming: From Foundations to Recent Developments and Applications	<i>Flageat, Lim, Templier, Cully:</i> Evolutionary Reinforcement Learning		



Introductory
Tutorial



Advanced
Tutorial



Specialized
Tutorial



Workshop

Parallel Sessions on Wednesday, July 16 – Friday, July 18

	Wednesday, July 16			Thursday, July 17		Friday, July 18
	12:00–13:30	15:30–17:00	17:30–19:00	12:00–13:30	15:30–17:00	10:00–11:30
Arlequín & Tauromaquia	HOP 1	HOP 2	HOP 3	HOP 4	Job Market	HOP 5
Azul	EML 1	EML 2	ECOM 2	ECOM 3	EML 4	EML 5
Minotauro	★ RWA 1	★ EMO 1	★ GA 1 + SI 3	★ + ☆ GP 3 + Impact	★ ECOM 4	GP 4
Malagüeta	ECiP	RWA 2	RWA 3	RWA 4	RWA 5	RWA 6
Alborán	GP 1	GP 2	EMO 2	EMO 3	EMO 4	EMO 5
Mena	★ BBSR 1 + ENUM 1	★ GECH 1 + Theory 2	★ EML 3	★ CS 1 + NE 1	★ L4EC 4	ECOM 5
Alcazaba	Theory 1	ECOM 1	GECH 2	GECH 3	ENUM 2	ENUM 3
Gibralfaro	SI 1	SI 2	BBSR 2	BBSR 3	NE 2	NE 3
Jábega	L4EC 1	L4EC 2	L4EC 3	GA 2	CS 2	CS 3

Paper Session

★ Session with Best Paper Nominees

Hot off the Press

Evolutionary Computation in Practice

Job Market

Abbreviations and Symbols

Abbreviations

BBSR	Benchmarking, Benchmarks, Software, and Reproducibility
CS	Complex Systems
ECiP	Evolutionary Computation in Practice
ECOM	Evolutionary Combinatorial Optimization and Metaheuristics
EML	Evolutionary Machine Learning
EMO	Evolutionary Multiobjective Optimization
ENUM	Evolutionary Numerical Optimization
GA	Genetic Algorithms
GECH	General Evolutionary Computation and Hybrids
GP	Genetic Programming
HOP	Hot Off the Press
L4EC	Learning for Evolutionary Computation
NE	Neuroevolution
RWA	Real World Applications
SI	Swarm Intelligence

Symbols

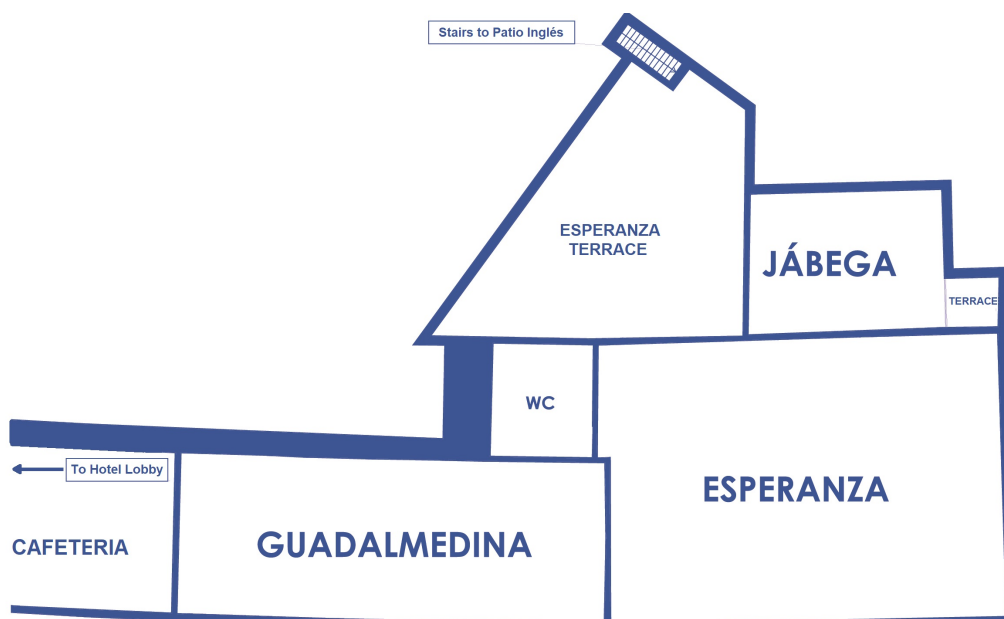
- ☆ SIGEVO Impact Award
- ★ Best Paper Award Nominee
- ✦ Best Student Workshop Paper Award Nominee
- 👤 Onsite Presentation
- 💻 Online Presentation
- ▶ Video Presentation
- 🎥 Presentation will be recorded
- 🚫 Presentation will not be recorded

Floor Plans

Floor -1



Ground Floor



Keynotes

Wednesday, July 16 | 10:30–11:30 | Arlequín & Tauromaquia



GECCO KEYNOTE

Rethinking Efficiency in Machine Learning

Chair: Gabriela Ochoa

Maria Amparo Alonso Betanzos, *CITIC-University of A Coruña, Spain*

The success of Artificial Intelligence (AI) has so far relied on developing increasingly precise models. However, this has come at the cost of greater complexity, requiring a higher number of parameters to estimate. As a result, model transparency and explainability have diminished, while the energy demands for training and deployment have skyrocketed. It is estimated that by 2030, AI could account for more than 30% of the planet's total energy consumption. In this context, green and responsible AI has emerged as a promising alternative, characterized by lower carbon footprints, reduced model sizes, decreased computational complexity, and improved transparency. Various strategies can help achieve these goals, such as improving data quality, developing more energy-efficient execution models, and optimizing energy efficiency in model training and inference. These innovation approaches highlight the potential of green AI to challenge the prevailing paradigm of ever-growing models.

Thursday, July 17 | 10:30–11:30 | Arlequín & Tauromaquia



GECCO KEYNOTE

Evolutionary Computation as a Path to Safe, Trustworthy, and Responsible General-Purpose Artificial Intelligence

Chair: Carlos Cotta

Javier Del Ser, *TECNALIA, Basque Research & Technology Alliance, and University of the Basque Country, Spain*

As AI systems grow in capability and autonomy, concerns around safety, alignment, and trust have taken center stage. Issues such as goal misalignment, vulnerability to adversarial attacks, and the inability to generalize reliably in open-world settings are no longer theoretical: they are pressing challenges with real-world implications. At the same time, global regulatory efforts, including the EU AI Act and other emerging international frameworks, are setting strict expectations for transparency, robustness, and accountability in AI development. This keynote provides an accessible introduction to the key pillars of safe, trustworthy, responsible, and general-purpose AI, tailored for newcomers to the field. It highlights how evolutionary computation offers a powerful, underexplored toolkit for meeting safety and trustworthy requirements. With its emphasis on diversity, adaptability, and robustness, evolutionary computation can contribute to safer learning, better generalization, and more resilient systems. The talk will bridge technical concepts with regulatory perspectives, illustrating how evolutionary approaches can help meet both the ethical and legal requirements driving the future of responsible AI systems.

Friday, July 18 | 12:00–13:00 | Arlequín & Tauromaquia



KEYNOTE

Evolutionary Computation: Back to the Future

Chair: Peter A.N. Bosman

Marc Schoenauer, *Institut national de recherche en sciences et technologies du numérique (INRIA), France*

The evolution principles underlying Evolutionary Algorithms can be applied in any search space (i.e., to any representation), provided we are able to define meaningful variation operators with respect to the problem at hand. From the historical bitstring, continuous variables and Finite State Automata to advanced program or structure embeddings and beyond, EC has gradually, and sometimes painfully, earned its spurs, turning from confidential pocketknife to recognized Swiss Army Knife. I will try to illustrate this historical perspective with various examples gathered during my 35 (omg!) years of research in EC, and to demonstrate how a thorough exploitation of the past can provide useful hints for an efficient exploration of the future.

Tutorials

Monday, July 14 | 09:30–11:20

Evolution of Neural Networks Risto Miikkulainen, Sebastian Risi, David Ha, Yujin Tang 🧑🏻 🗣️	Azul
Machine Learning Assisted Evolutionary Multi- and Many-objective Optimization Kalyanmoy Deb, Dhish Kumar Saxena, Sukrit Mittal 🗣️ 🗣️	Malagueta
Benchmarking Single- and Multi-Objective Optimization Algorithms: How to Make Your Experimental Data More Valuable Diederick Vermetten, Carola Doerr, Jacob de Nobel, Thomas Bäck 🧑🏻 🗣️	Alborán
Model-Based Evolutionary Algorithms Dirk Thierens, Peter A.N. Bosman 🧑🏻 🗣️	Alcazaba
Intelligent Evolution Optimization: Guided from Deep Learning to Large Language Model Hua Xu, Xiaodong Li, Yuan Sun, Huigen Ye 🗣️ 🗣️	Gibralfaro
Statistical Forward Planning Algorithms Simon Lucas, James Goodman, Marko Tot 🧑🏻 🗣️	Jábega

Monday, July 14 | 11:40–13:30

Introductory Mathematical Programming for EC Ofer M. Shir 🧑🏻 🗣️	Malagueta
Recent Developments in Data Structures and Algorithms for Evolutionary Multiobjective Optimization Andrzej Jaskiewicz, Piotr Zielniewicz 🧑🏻 🗣️	Alborán
Evolutionary Computation and Evolutionary Deep Learning for Image Analysis, Signal Processing and Pattern Recognition Stefano Cagnoni, Ying Bi, Yanan Sun 🧑🏻 🗣️	Alcazaba
Decomposition Multi-objective Optimization: What We Know from the Literature, and What We Are NOT Clear from a Data Science Perspective Ke Li 🗣️ 🗣️	Gibralfaro

Monday, July 14 | 15:00–16:50

Fair Performance Comparison of Evolutionary Multi-Objective Algorithms Hisao Ishibuchi, Lie Meng Pang 🧑🏻 🗣️	Minotauro
Combinatorial Optimisation Can be Different from Continuous Optimisation for MOEAs Miqing Li 🧑🏻 🗣️	Malagueta
Introduction to Quantum Optimization Alberto Moraglio, Francisco Chicano 🧑🏻 🗣️	Alborán
Evolutionary Computation Meets Machine Learning for Combinatorial Optimization Yi Mei, Günther R. Raidl 🧑🏻 🗣️	Alcazaba
Tutorial: A Gentle Introduction to Theory (for Non-Theoreticians) Benjamin Doerr 🧑🏻 🗣️	Gibralfaro
Representations for Evolutionary Algorithms Franz Rothlauf 🧑🏻 🗣️	Jábega

Monday, July 14 | 17:10–19:00

Theory and Practice of Population Diversity in Evolutionary Computation Dirk Sudholt, Giovanni Squillero 🧑🏻 🗨️	Azul
Advances in Evolutionary Hyper-Heuristics Nelishia Pillay 🧑🏻 🗨️	Minotauro
Structural Bias in Optimisation Algorithms Anna Kononova, Niki van Stein 🧑🏻 🗨️	Malagueta
Evolutionary Art and Design in the Machine Learning Era Penousal Machado, João Correia 🧑🏻 🗨️	Alborán
New, More Efficient Crossover and Local Search Operators for Recombination Lattices Darrell Whitley 🧑🏻 🗨️	Mena
Bayesian Optimization Ivo Couckuyt, Sebastian Rojas Gonzalez, Juergen Branke 🧑🏻 🗨️	Alcazaba
Automated Machine Learning Tools for Data Science, Modeling, and Algorithm Benchmarking Ryan Urbanowicz 🧑🏻 🗨️	Gibralfaro
Genetic Programming as a Hyper-Heuristic for Solving Combinatorial Optimisation Problems Marko Đurasević, Francisco Javier Gil Gala, Domagoj Jakobović, Yi Mei 🧑🏻 🗨️	Jábega

Tuesday, July 15 | 09:30–11:20

Recent Advances in Meta-features Used for Representing Black-box Single-objective Continuous Optimization Gjorgjina Cenikj, Ana Nikolikj, Tome Eftimov 🧑🏻 🗨️	Azul
Evolutionary Computation for Stochastic Problems Frank Neumann, Aneta Neumann, Hemant Singh 🧑🏻 🗨️	Alborán
Pareto Optimization for Subset Selection: Theories and Practical Algorithms Chao Qian 🧑🏻 🗨️	Alcazaba
Evolutionary Computation for Feature Selection and Feature Construction Bing Xue, Mengjie Zhang 🧑🏻 🗨️	Gibralfaro
Cartesian Genetic Programming: From Foundations to Recent Developments and Applications Roman Kalkreuth, Sylvain Cussat-Blanc, Dennis Wilson 🧑🏻 🗨️	Jábega

Tuesday, July 15 | 11:40–13:30

What You Always Wanted to Know About Evolution Strategies, But Never Dared to Ask Hans-Georg Beyer 🧑🏻 🗨️	Alcazaba
Coevolutionary Computation for Adversarial Deep Learning Jamal Toutouh, Una-May O'Reilly 🗨️ 🗨️	Gibralfaro
Evolutionary Reinforcement Learning Manon Flageat, Bryan Lim, Paul Templier, Antoine Cully 🧑🏻 🗨️	Jábega

Tuesday, July 15 | 15:00–16:50

Advanced Use of Automatic Algorithm Configuration: Single- and Multi-Objective Approaches Jeroen Rook, Manuel López-Ibáñez 🧑🏻 🗨️	Gibralfaro
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Tuesday, July 15 | 17:10–19:00**Linear Genetic Programming**

Wolfgang Banzhaf, Ting Hu 🧑🏻 🎥

Alcazaba

Constraint-Handling Techniques used with Evolutionary Algorithms

Carlos A. Coello Coello 🧑🏻 🎥

Gibralfaro

Workshops

Monday, July 14 | 09:30–11:20

Evolutionary Computing and Explainable AI | Evolutionary Computation and Decision Making

Mena

- 09:30–09:35 **Welcome & Opening**
Workshop Organizers 🧑🏿 🎤
- 09:35–09:50 **Urban Transport Decision Making: Improving Traffic Prediction with Symbolic Regression, Transfer Learning and Deep Learning**
Alina Patelli, John Rego Hamilton, Aniko Ekart 🖥️ 🎤
- 09:50–10:20 **An introduction to the preference-based and interactive EMO algorithms**
Mariano Luque 🧑🏿 🎤
- 10:20–10:40 **Interactive Evolutionary Optimization of Visual Explainable AI through Gestalt Principles with Human Feedback**
Doina Bucur, Sara Miotto, Leonardo Lucio Custode, Chiara Camilla Rambaldi Migliore, Giovanni Iacca 🧑🏿 🎤
- 10:40–11:00 **Interpreting Machine Learning Pipelines Produced by Evolutionary AutoML for Biochemical Property Prediction**
Alex G.C. de Sá, Gisele Lobo Pappa, Alex A. Freitas, David B. Ascher 🧑🏿 🎤
- 11:00–11:05 **Closing**
Workshop Organizers 🧑🏿 🎤

Open Source Software for Evolutionary Computation

Minotauro

- 09:30–09:40 **Welcome & Opening**
Workshop Organizers 🧑🏿 🎤
- 09:40–10:00 **SEvoBench: A C++ Framework For Evolutionary Single-Objective Optimization Benchmarking**
Yongkang Yang, Jian Zhao, Tengfei Yang 🖥️ 🎤
- 10:00–10:20 **logicGP – A Framework for Literal Based Classification with a Focus on Software Architecture and Open Source Implementation**
Robin Nunkesser 🧑🏿 🎤
- 10:20–10:40 **pyHMS: A Python Library for Hierarchic Memetic Strategy**
Wojciech Achtelik, Hubert Guzowski, Maciej Smolka 🧑🏿 🎤
- 10:40–11:00 **Design, Containerization and Performance of Distributed Evolutionary Computation**
Jan Zenisek, Florian Bachinger, Christian Haider, Florian Holzinger, Philipp Neuhauser, Erik Pitzer, Stefan Wagner, Michael Affenzeller 🧑🏿 🎤
- 11:00–11:10 **Slim_gsgp: A Python Library for Non-Bloating GSGP**
Liah Rosenfeld, Davide Farinati, Diogo Rasteiro, Gloria Pietropolli, Karina Brotto Rebuli, Sara Silva, Leonardo Vanneschi 🧑🏿 🎤
- 11:10–11:20 **Closing**
Workshop Organizers 🧑🏿 🎤

Monday, July 14 | 11:40–13:30

Good Benchmarking Practices for Evolutionary Computation

Minotauro

- 11:40–12:15 **Revisiting COCO with automated benchmarking in mind**
Nikolaus Hansen 🧑🏿 🎤

12:15–12:50 **Benchmarking through the lense of a Machine Learner and Robotist**
Antoine Cully 🧑 🖥️

12:50–13:30 **General Discussion**
🧑 🖥️

10th Workshop on Industrial Applications of Metaheuristics

Azul

11:40–11:42 **Welcome to IAM 2025**
Silvino Fernandez 🧑 🖥️

11:42–12:05 **A Hybrid Constrained Programming with Genetic Algorithm for the Job Shop Scheduling Problem**
Alessandro Lorenzi, Stefano Genetti, Chiara Camilla Rambaldi Migliore, Marco Roveri, Giovanni Iacca 🧑 🖥️

12:05–12:28 **Multi-objective Optimisation of Floating Offshore Wind Farms based on a Real-World Case Study**
Pawel L. Manikowski, David J. Walker, Matthew J. Craven 🖥️ 🖥️

12:28–12:51 **Efficient Scheduling of Transformer Neural Network Computation for Edge-AI Deployment**
David Sedlák, Jan Klhufek, Vojtech Mrazek, Zdenek Vasicek 🧑 🖥️

12:51–13:04 **Memory-Assisted Genetic Algorithm for Signal Timing Optimization in Traffic Networks**
Sahar Kianian, Edward Keedwell, Aidan Bennett 🖥️ 🖥️

13:04–13:17 **Grammatical Evolution for Temperature Prediction Models in Different Photovoltaic Technologies**
Alexander Cortés-Llanos, Lucía Serrano-Lujan, Carlos Toledo, Antonio Urbina, Jose Manuel Colmenar 🖥️ 🖥️

13:17–13:30 **GRASP Metaheuristic for Energy-efficient Drone Coverage Path Planning**
Bárbara Cristina Fonseca de Souza, Tarcísio Barroso Marques, Jose Elias Claudio Arroyo 🖥️ 🖥️

28th International Workshop on Evolutionary Rule-based Machine Learning

Mena

11:40–11:50 **Welcome & Opening**
Workshop Organizers 🧑 🖥️

11:50–12:20 **Evolutionary Optimization via Rule-based Learning**
Masaya Nakata 🧑 🖥️

12:20–12:45 **Dimensionality Reduction for Enabling Visual Reinforcement Learning with a Classifier System**
Connor Schönberner, Armin Mackensen, Sven Tomforde 🖥️ 🖥️

12:45–13:05 **Evolving Modular Abstractions through Lateralized Learning in Classifier Systems**
Abubakar Siddique, Muhammad Iqbal, Will N. Browne, Gina M. Grimshaw 🧑 🖥️

13:05–13:30 **Why state differentiation in ACS2 is not enough in aliased environments**
Mateusz Łabędzki, Olgierd Unold 🧑 🖥️

Monday, July 14 | 15:00–16:50

10th Workshop on Industrial Applications of Metaheuristics

Azul

15:00–15:23 **Evolutionary Adaptive Stress Testing for Collision Avoidance in Sustainable Maritime Transportation**
Thomas Steinfeldt Laursen, Ole Jakob Mengshoel 🖥️ 🖥️

- 15:23–15:46 **Nested Multi-objective Model Updating for an Aircraft Wingtail Digital Twin**
Jake Hollins, Kostantinos Agathos, Tinkle Chugh 🧑🏻 🎥
- 15:46–16:46 **Panel Discussion: Industrial Application on Metaheuristics**
Carlos Alba, Kalyanmoy Deb, Manuel Iori, Manuel López-Ibáñez, Thomas Bäck 🧑🏻 🎥
- 16:46–16:50 **Conclusions**
🧑🏻 🎥

28th International Workshop on Evolutionary Rule-based Machine Learning

Mena

- 15:00–15:20 **GPU-Accelerated Rule Evaluation and Evolution**
Hormoz Shahrzad, Risto Miikkulainen 🖥️ 🎥
- 15:20–15:40 **How to Design an LCS to Create Explainable AI Models for Real-World Applications**
Michael Heider 🧑🏻 🎥
- 15:40–16:05 **A Proposal for a Leaner Narrative of Learning Classifier Systems**
Pierluca Lanzi, Daniele Loiacono 🧑🏻 🎥
- 16:05–16:40 **Panel Discussion**
🧑🏻 🎥
- 16:40–16:50 **Closing Remarks**
🧑🏻 🎥

Monday, July 14 | 17:10–19:00

Student Workshop

Arlequín & Tauromaquia

- 17:10–17:15 **Welcome & Opening by the Workshop Organisers**
🧑🏻 🎥
- 17:15–17:35 **★ The Specificity vs. Expense Trade-Off of Multiagent Credit**
Raghav Thakar, Kagan Tumer 🧑🏻 🎥
- 17:35–17:55 **★ School Bus Routing for Pupils with Special Needs Under Uncertainty: An Averaging Approach**
Ozioma Paul, Julia Handl, Manuel López-Ibáñez 🧑🏻 🎥
- 17:55–18:15 **★ Evaluation of Sensitivity Analysis of Penalty Weights in QUBO**
Jiajie Liu, Alberto Moraglio 🧑🏻 🎥
- 18:15–18:35 **★ Noise Resilient Quantum Circuit Design by Multi-Objective Genetic Algorithm**
Christian Wood, Alberto Moraglio 🧑🏻 🎥

Tuesday, July 15 | 09:30–11:20

Analysing Algorithmic Behaviour of Optimisation Heuristics

Mena

- 09:30–09:33 **Welcome**
🧑🏻 🎥
- 09:33–10:18 **It is Time for a Revision of COCO BBOB**
Hans-Georg Beyer 🧑🏻 🎥
- 10:18–10:38 **Tracing Genome Influence in Multi-Objective Evolutionary Algorithms**
Tobias Benecke, Sanaz Mostaghim 🧑🏻 🎥
- 10:38–10:58 **Correlated Geometric Mutations for Integer Evolution Strategies**
Ofer M. Shir, Michael Emmerich 🧑🏻 🎥
- 10:58–11:18 **Evolving to Extinction: a Case Study in Heuristic Search Dynamics**
James McDermott, Kostadin Dimanov Georgiev, Miguel Nicolau 🧑🏻 🎥

11:18–11:20 **Closing**
 

Decomposition Techniques in Evolutionary Optimization

Minotauro

- 09:30–09:55 **The Pitfalls and Potentials of Adding Gene-invariance to Optimal Mixing**
 Anton Bouter, Dirk Thierens, Peter A.N. Bosman  
- 09:55–10:20 **Towards a Penalty Annealing Approach in MOEA/D for Constrained Multi-Objective Optimization**
 Miguel Ángel Jiménez-Domínguez, Néstor Andrés García-Rojas, Saúl Zapotecas-Martínez, Raquel Díaz-Hernández, Leopoldo Altamirano-Robles, Bilel Derbel  

Workshop on Surrogate-Assisted Evolutionary Optimisation

Malagueta

- 09:30–09:40 **Welcome Note, Workshop Introduction, and Session Overview**
 
- 09:40–10:05 **Transfer Learning of Surrogate Models: Integrating Domain Warping and Affine Transformations**
 Shuaiqun Pan, Diederick Vermetten, Manuel López-Ibáñez, Thomas Bäck, Hao Wang  
- 10:05–10:30 **Performance Benchmarking of Multi-Objective Surrogate-Assisted Evolutionary Algorithms on a Novel Computational Fluid Dynamics Test Case**
 Benjamin Moore, Andrew Roberts, Daniel Jarman, Alma Rahat, Jonathan Fieldsend, Gavin Tabor  
- 10:30–10:55 **Surrogate Model-Based Multi-Objective Optimization Using Desirability Functions**
 Thomas Bartz-Beielstein  
- 10:55–11:20 **Automated Prediction of Compressor Performance Maps: Surrogate-Based Optimization with RNNs for Enhanced Extrapolation and Interpolation**
 Richard Schulz, Alexander Hinterleitner, Noah Christoph Pütz, Jens Uwe Brandt, Matthias Müller, Thomas Bartz-Beielstein  

Student Workshop

Arlequín & Tauromaquia

- 09:30–09:50 **Automated Generation of Trajectory-based Metaheuristics for Capacitated Vehicle Routing**
 Pablo Contreras Estrada, Thomas Stützle, Leslie Pérez Cáceres  
- 09:50–10:10 **Efficient Pretrained Model for Surrogate-assisted High-Dimensional Expensive Multi-objective Optimization**
 Jiajun Li, Shuwei Zhu, Wei Fang  
- 10:10–10:30 **LLM-aided Evolutionary Algorithms for Haiku Generation**
 Vedant Jobanputra, Basam Thilaknath Reddy, Sri Ganesh Bhojanapalli, S.V.S Krishna Aditya, Bagavathi Chandrasekara, Ritwik Murali  
- 10:30–10:50 **Towards Automated and Interpretable Decision Support Systems for Precision Livestock Farming Using Evolutionary Computing**
 Elisabeth Mayrhuber, Stephan Winkler  
- 10:50–11:10 **Efficient Waste Collection Routing Using F-CVRP and Dynamic Parameter Optimization via Q-Learning**
 Yogesh Kumar, Prakhhar Gupta, Karuna Panwar, Kusum Deep  
- 11:10–11:15 **Closing by Workshop Organisers**
 

Tuesday, July 15 | 11:40–13:30

Workshop on Black Box Optimization Benchmarking 2025

Azul

- 11:40–12:00 **Blackbox Optimization Benchmarking with COCO – Fundamentals and Recent Developments**
The BBOBies 🧑🏻 🗣️
- 12:00–12:10 **On the Robustness of BFGS to Positive and Negative Noise Outliers on the BBOB Test Suite**
Alexandre Chotard, Anne Auger 🧑🏻 🗣️
- 12:10–12:20 **On the Robustness of Nelder-Mead to Positive and Negative Noise Outliers with Heavy-Tails on the BBOB Test Suite**
Alexandre Chotard, Anne Auger 🧑🏻 🗣️
- 12:20–12:30 **Benchmarking Powell’s Legacy: Performance of Five Derivative-Free Solvers in pdfo on the bbob Test Suite**
Dimo Brockhoff, Tanguy Villain 🧑🏻 🗣️
- 12:30–12:40 **How Robust is UOBYQA to Worsening, Frozen Noise? Investigations on the bbob Test Suite With Outliers**
Dimo Brockhoff, Tanguy Villain 🧑🏻 🗣️
- 12:40–13:00 **Benchmarking CMA-ES under Additive and Subtractive Noise on the BBOB Testbed**
Oskar Girardin 🧑🏻 🗣️
- 13:00–13:20 **Benchmarking Improved Variants of CMA-ES-PDM on the bbob-mixint Testbed**
Duc Manh Nguyen 🖥️ 🗣️
- 13:20–13:30 **Session Wrap Up**
The BBOBies 🧑🏻 🗣️

15th Workshop on Evolutionary Computation for the Automated Design of Algorithms

Alborán

- 11:40–11:45 **Welcome & Opening**
Workshop Organizers 🧑🏻 🗣️
- 11:45–12:05 **Genetic Improvement of Dynamic Optimization Algorithms using PushGP**
Vladimir Stanovov, Eugene Semenkin 🖥️ 🗣️
- 12:05–12:25 **How to Train Algorithm Selection Models: Insights from Black-box Continuous Optimization**
Xiao He, Haopu Shang, Chao Qian 🖥️ 🗣️
- 12:25–12:45 **Learning the Particle Swarm Optimization Velocity Update via Genetic Programming**
Frederico J.J.B. Santos, Andrea De Lorenzo, Luca Manzoni, Gloria Pietropolli 🧑🏻 🗣️
- 12:45–12:50 **Keynote Introduction**
🧑🏻 🗣️
- 12:50–13:20 **Some few examples of automated design of algorithm**
Thomas Stützle 🧑🏻 🗣️
- 13:20–13:30 **Open discussion & Wrap up**
Workshop Organizers 🧑🏻 🗣️

Evolutionary Computing and Explainable AI

Mena

- 11:40–11:45 **Welcome & Opening**
Workshop Organizers 🧑🏻 🗣️
- 11:45–12:05 **A Step towards Interpretable Multimodal AI Models with MultiFIX**
Mafalda Malafaia, Thalea Schlender, Tanja Alderliesten, Peter A.N. Bosman 🧑🏻 🗣️

- 12:05–12:25 **A Better Multi-Objective GP-GOMEA – But do we Need it?**
Joe Harrison, Tanja Alderliesten, Peter A.N. Bosman 🧑🏻 🎥
- 12:25–12:45 **Evaluating a Novel Explainability Method for Metaheuristics via a User Study**
GianCarlo Antonino Pasquale Ignazio Catalano, Alexander Brownlee, David Cairns, John McCall, Russell Ainslie 🧑🏻 🎥
- 12:45–13:05 **Local Optima Networks (LONs) and Search Trajectory Networks (STNs) for Noisy Combinatorial Problems**
John Payne, Aishwaryaprajna, David J. Walker, Edward Keedwell 🧑🏻 🎥
- 13:05–13:30 **Open Discussion**
🧑🏻 🎥

Graph-based Genetic Programming

Minotauro

- 11:40–12:10 **Everybody Wants to Rule the Benchmark: The Dangers of GP Leaderboard Chasing**
Fabrício Olivetti de França 🧑🏻 🎥
- 12:10–12:30 **Linear Genetic Programming for Design Graph Neural Networks for Node Classification**
Maciej Krzywda, Szymon Łukasik, Amir H. Gandomi 🧑🏻 🎥
- 12:30–12:50 **Towards Efficient Semantic Mutation in CGP: Enhancing SOMOk**
Lukas Plevac, Zdenek Vasicek 🧑🏻 🎥
- 12:50–13:10 **Evolving Typed Token Processing Networks**
Berfin Sakalliglu, Giorgia Nadizar, Luca Manzoni, Eric Medvet 🧑🏻 🎥
- 13:10–13:30 **On Chromosome Crossover in Multimodal Adaptive Graph Evolution**
Camilo De La Torre, Sylvain Cussat-Blanc, Hervé Luga, Dennis Wilson, Yuri Lavinas 🧑🏻 🎥

Workshop on Surrogate-Assisted Evolutionary Optimisation

Malagueta

- 11:40–11:45 **Welcome Note, and Session Overview**
🧑🏻 🎥
- 11:45–11:57 **From 'How Good?' to 'Is it Better?': Classification-Based Surrogate Models for JADE**
Konrad Krawczyk, Jarosław Arabas 🧑🏻 🎥
- 11:57–12:09 **A Novel Mesh Deformation Methodology for Computational Aerodynamic Shape Optimisation**
Joelle Salamoun, Ben Hickling Smith, Ben Evans, Sean Walton 🧑🏻 🎥
- 12:09–12:39 **Panel Discussion: Surrogate-Assisted Optimisation – Past, Present, and Future**
Jonathan Fieldsend, Richard Allmendinger, Juergen Branke, Vanessa Volz 🧑🏻 🎥

Tuesday, July 15 | 15:00–16:50

Workshop on Black Box Optimization Benchmarking 2025

Azul

- 15:00–15:20 **Cascading CMA-ES Instances for Generating Input-diverse Solution Batches**
Maria Laura Santoni, Christoph Dürr, Carola Doerr, Mike Preuss, Elena Raponi 🧑🏻 🎥
- 15:20–15:40 **BEACON: Continuous Bi-objective Benchmark problems with Explicit Adjustable COrrrelationN control**
Samuel Tebbet, George De Ath, Tinkle Chugh 🖥️ 🎥
- 15:40–16:00 **Benchmarking Seven Multi-objective Optimization Methods from the PlatEMO Platform on the bbob-biobj Test Suite**
David Ibehej, Jakub Kudela 🧑🏻 🎥
- 16:00–16:20 **Benchmarking the (1+1) Limited Memory Matrix Adaptation Evolution Strategy on the bbob-largescale Testbed**
Tobias Glasmachers 🧑🏻 🎥

16:20–16:50 **General Discussion**
The BBOBies 🧑🏻 🎧

Evolutionary Generative Models

Alcazaba

15:00–15:05 **Welcome & Opening**
Workshop Organizers 🧑🏻 🎧

15:05–15:25 **Open-Ended Evolution of Artistic Styles in Diffusion Models via Island-Based Genetic Algorithms**
Marcel Salvenmoser, Michael Affenzeller 🧑🏻 🎧

15:25–15:45 **A Voxel Representation Based Evolutionary Data Generator of Adversarial Objects for AI Agents**
Akshay 🖥️ 🎧

15:45–16:05 **Three-objective evolutionary search of the latent space of Generative Adversarial Networks for human face generation**
Sergio Nesmachnow, Pedro Moreno 🧑🏻 🎧

16:05–16:25 **Multi-population GAN Training: Analyzing Co-Evolutionary Algorithms**
Walter Casas, Jamal Toutouh 🧑🏻 🎧

16:25–16:45 **Panel Discussion**
🧑🏻 🎧

16:45–16:50 **Closing**
Workshop Organizers 🧑🏻 🎧

Evolving Self-Organisation

Alborán

15:00–15:05 **Introductory Remarks**
🧑🏻 🎧

15:05–15:50 **Surprising Synergies of Evolution and Self-Organization**
Risto Miikkulainen 🧑🏻 🎧

15:50–16:35 **Tutorial**
Workshop Organizers 🧑🏻 🎧

16:35–16:50 **Morphology-Adaptive Muscle-Driven Locomotion via Attention Mechanisms**
Junior Rojas 🧑🏻 🎧

Landscape-Aware Heuristic Search

Malagueta

15:00–15:05 **Welcome & Opening**
Workshop Organizers 🧑🏻 🎧

15:05–15:35 **Towards Benchmarking Multi-Objective Optimization Algorithms Based on the Basin Connectivity**
Ryosuke Ota, Likun Liu, Naoki Hamada, Takahiro Yamamoto, Shoichiro Tanaka, Daisuke Sakurai 🧑🏻 🎧

15:35–16:05 **Visualising Adam Oscillations in Neural Network Loss Landscapes**
Henri van der Grijp, Anna Sergeevna Bosman, Katherine Mary Malan 🖥️ 🎧

16:05–16:35 **Algorithm Explainability for Malware Evolution with Search Trajectory Networks**
Kehinde Babaagba, Ritwik Murali, Sarah L. Thomson 🧑🏻 🎧

Workshop on Quantum Optimization

Minotauro

15:00–15:05 **Welcome & Opening**
Workshop Organizers 🧑🏻 🎧

15:05–15:50 **Optimization Strategies for Variational Quantum Algorithms**
Hao Wang 🧑🏻 🎧

- 15:50–16:05 **On "Solving The Travelling Salesman Problem Using A Single Qubit" vs. Quantum Genetic Optimization: Are we there?**
Hamza Baniata 🧑🏿 🎥
- 16:05–16:20 **A Variational Quantum Algorithm for the Permutation Flow Shop Scheduling Problem**
Marco Baiocchi, Fabrizio Fagiolo, Angelo Oddi, Riccardo Rasconi 🖥️ 🎥
- 16:20–16:35 **The Quantum Approximate Optimization Algorithm Can Require Exponential Time to Optimize Linear Functions**
Francisco Chicano, Zakaria Abdelmoiz Dahi, Gabriel Luque 🧑🏿 🎥
- 16:35–16:50 **Manual vs. Automated QUBO Formulations for Flow Shop Scheduling: A Comparative Study on D-Wave and InfinityQ**
Yousra Farhani, Taha Arbaoui, Karima Benatchba 🧑🏿 🎥

Symbolic Regression Workshop

Mena

- 15:00–15:05 **Welcome & Opening**
Workshop Organizers 🧑🏿 🎥
- 15:05–15:25 **SCRBenchmark: A Benchmarking Library for Shape-Constrained Regression**
Florian Bachinger, Bernhard Werth, Jan Zenisek, Christian Haider, Fabrício Olivetti de França 🧑🏿 🎥
- 15:25–15:45 **A Hierarchical Multiview Symbolic Regression Method for Decoding Oceanic Metabolism**
Hernan Lira, Luis Martí, Nayat Sanchez-Pi 🖥️ 🎥
- 15:45–16:05 **Can Synthetic Data Improve Symbolic Regression Extrapolation Performance?**
Fitria Wulandari Ramlan, Colm O'Riordan, Gabriel Kronberger, James McDermott 🧑🏿 🎥
- 16:05–16:25 **When Data Transformations Mislead Symbolic Regression: Deceptive Search Spaces in System Identification**
Alberto Tonda, Hengzhe Zhang, Qi Chen, Bing Xue, Mengjie Zhang, Evelyne Lutton 🧑🏿 🎥
- 16:25–16:45 **On the use of Hinge Loss as a Surrogate Fitness Function with Grammatical Evolution for Parkinson's Disease Classification**
Jiajun Duan, Miguel Nicolau, Michael O'Neill 🧑🏿 🎥
- 16:45–16:50 **Discussion**
🧑🏿 🎥

Tuesday, July 15 | 17:10–19:00

Evolving Self-Organisation

Alborán

- 17:10–17:25 **A Path to Universal Neural Cellular Automata**
Gabriel Béna, Maxence Faldor, Dan Goodman, Antoine Cully 🧑🏿 🎥
- 17:25–17:40 **Self-Organizing Models of Brain Wiring: Developmental Programs for Evolving Intelligence**
Jamieson Warner, Risto Miikkulainen 🧑🏿 🎥
- 17:40–18:25 **Poster Session**
🧑🏿 🎥
- 18:25–19:00 **Talk and Concluding Remarks**
Workshop Organizers 🧑🏿 🎥

Large Language Models for and with Evolutionary Computation Workshop

Malagueta

- 17:10–17:15 **Welcome & Opening**
Workshop Organizers 🧑🏿 🎥

- 17:15–17:28 **BLADE: Benchmark suite for LLM-driven Automated Design and Evolution of iterative optimisation heuristics**
Niki van Stein, Anna Kononova, Haoran Yin, Thomas Bäck 🧑🏻 🗣️
- 17:28–17:41 **Regarding Context Size in LLM-Based Metaheuristic Design**
Adam Viktorin, Michal Pluháček, Jozef Kovac, Tomas Kadavy, Roman Senkerik 🧑🏻 🗣️
- 17:41–17:54 **LLM-Guided Evolution: An Autonomous Model Optimization for Object Detection**
YiMing Yu, Jason Paul Zutty 🧑🏻 🗣️
- 17:54–18:07 **Optimizing Photonic Structures with Large Language Model Driven Algorithm Discovery**
Haoran Yin, Anna Kononova, Thomas Bäck, Niki van Stein 🧑🏻 🗣️
- 18:07–18:20 **Giving Simulated Cells a Voice: Evolving Prompt-to-Intervention Models for Cellular Control**
Nam Le, Patrick Erickson, Zhang Yanbo, Michael Levin, Josh Bongard 🧑🏻 🗣️
- 18:20–18:33 **LEAR: LLM-Driven Evolution of Agent-Based Rules**
Can Gurkan, Narasimha Karthik Jwalapuram, Kevin Wang, Rudy Danda, Leif Rasmussen, John Chen, Uri Wilensky 🧑🏻 🗣️
- 18:33–18:58 **Panel Discussion**
🧑🏻 🗣️
- 18:58–19:00 **Closing**
Workshop Organizers 🧑🏻 🗣️

Neuroevolution at Work

Azul

- 17:10–17:15 **Welcome & Opening**
Workshop Organizers 🧑🏻 🗣️
- 17:15–17:45 **Low Rank Factorizations are Indirect Encodings for Deep Neuroevolution**
Jack Garbus, Jordan Pollack 🗣️ 🗣️
- 17:45–18:15 **Evaluating Encoding of Neuron Configuration and Position in Neuroevolution of Liquid State Machines**
Carlos-Alberto López-Herrera, Héctor-Gabriel Acosta-Mesa, Efrén Mezura-Montes 🧑🏻 🗣️
- 18:15–18:35 **Unveiling the Search Space of Simple Contrastive Graph Clustering with Cartesian Genetic Programming**
Maciej Krzywda, Yue Liu, Szymon Łukasik, Amir H. Gandomi 🧑🏻 🗣️

Workshop on Quantum Optimization

Minotauro

- 17:10–17:20 **In the quest for quantum advantage in variational quantum algorithm with landscape analysis**
Xavier Bonet-Monroig 🧑🏻 🗣️
- 17:20–17:30 **Encoding Binary Comparison Constraints in QUBO for Quantum Annealing**
Philippe Codognet 🧑🏻 🗣️
- 17:30–17:45 **Steiner Traveling Salesman Problem with Quantum Annealing**
Alessia Ciacco, Francesca Guerriero, Eneko Osaba 🗣️ 🗣️
- 17:45–18:00 **Lookalike Clustering for Customer Segmentation: a Comparative Study of Quantum Annealing and Classical Algorithms**
Benedetta Ferrari, Giuseppe Gnocchi, Manuel Iori, Simone Mascaro, Mirko Mucciarini, Luca Rinaldi, Gianluigi Salerno, Vittorio Tartarini, Andrea Vezzani 🧑🏻 🗣️
- 18:00–18:15 **Quantum Annealing for Bi-objective Weighted Portfolio Optimization in Real-world Financial Markets**
Shu-Yu Kuo, Kun-Lin Lee, Yao-Hsin Chou, Jyun-Yi Shen, Sy-Yen Kuo 🧑🏻 🗣️
- 18:15–18:30 **Comparative Analysis of Classical and Quantum-Inspired Solvers: A Preliminary Study on the Weighted Max-Cut Problem**
Aitor Morais, Eneko Osaba, Iker Pastor, Izaskun Oregi 🧑🏻 🗣️

18:30–19:00 **Panel Discussion**



Symbolic Regression Workshop

Mena

17:10–17:30 **Continuous Pruning for Symbolic Regression**

Bernhard Werth, Michael Affenzeller

17:30–17:50 **Model Recovery in Symbolic Regression: Theory, Conjectures, and Open Questions**

Erik-Jan Senn

17:50–18:10 **Call for Action: towards the next generation of symbolic regression benchmark**

Guilherme S. Imai Aldeia, Hengzhe Zhang, Geoffrey Bomarito, Miles Cranmer, Alcides Fonseca, Bogdan Burlacu, William G. La Cava, Fabrício Olivetti de França

18:10–18:30 **Rewarding Model Smoothness and Simplicity via Alternating Objectives in Symbolic Regression**

Nathan Haut, Mark Kotanchek

18:30–19:00 **Panel Discussion and Closing**

Workshop Organizers

Competitions

Monday, July 14 | 11:40–13:30

Competitions

Arlequín & Tauromaquia

- 11:40–11:55 **2025 Competition on Evolutionary Computation in the Energy Domain: Summer Finals of the Risk-based Energy Scheduling**
José Almeida, Fernando Lezaman, Joao Soares, Bruno Canizes, Filipe Sousa, Zita Vale 🖥️ 🎥
- 11:55–12:10 **Numerical Global Optimization Competition on GNBG-II generated Test Suite**
Amir H. Gandomi, Kalyanmoy Deb, Rohit Salgotra 🖥️ 🎥
- 12:10–12:25 **Competition on LLM-designed Evolutionary Algorithms**
Adam Viktorin, Roman Senkerik, Michal Pluháček, Niki van Stein, Lars Kotthoff 🧑 🎥
- 12:25–12:40 **Planet Wars AI Challenge**
Simon Lucas 🧑 🎥
- 12:40–12:55 **Benchmarking Niching Methods for Multimodal Optimization**
Ali Ahrari, Jonathan Fieldsend, Mike Preuss, Xiaodong Li, Michael G. Epitropakis 🧑 🎥
- 12:55–13:10 **Anytime Algorithms for Many-affine BBOB Functions**
Diederick Vermetten, Carola Doerr, Thomas Bäck, Jacob de Nobel 🧑 🎥

Monday, July 14 | 15:00–16:50

Competitions

Arlequín & Tauromaquia

- 15:00–15:15 **Evolutionary Submodular Optimisation**
Aneta Neumann, Saba Sadeghi Ahouei, Jacob de Nobel, Diederick Vermetten, Thomas Bäck, Frank Neumann 🧑 🎥
- 15:15–15:30 **Dynamic Stacking Optimization in Uncertain Environments**
Johannes Karder, Stefan Wagner, Sebastian Leitner 🧑 🎥
- 15:30–15:45 **Interpretable Control Competition**
Giorgia Nadizar, Luigi Rovito, Dennis Wilson, Eric Medvet 🧑 🎥
- 15:45–16:00 **Evolutionary Algorithms for the Large-scale Earth Observation Satellite Scheduling Problem**
Alex Vasegaard, Jonathan Guerra 🧑 🎥
- 16:00–16:15 **Automated Design Competition**
Maciej Komosinski, Konrad Miazga, Agnieszka Mensfelt 🧑 🎥

Papers

Wednesday, July 16 | 12:00–13:30

EML 1

Azul

Chair: Kalyanmoy Deb, *Michigan State University, USA*

- 12:00–12:20 **LAOS: Large Language Model-Driven Adaptive Operator Selection for Evolutionary Algorithms**
Yisong Zhang, Guoxing Yi 🖥️ 🎤
- 12:20–12:40 **PropNEAT – Efficient GPU-Compatible Backpropagation over NeuroEvolutionary Augmenting Topology Networks**
Michael Merry, Patricia Riddle, James Warren 🧑🏫 🎤
- 12:40–13:00 **Interpretable Non-linear Survival Analysis with Evolutionary Symbolic Regression**
Luigi Rovito, Marco Virgolin 🧑🏫 🎤
- 13:00–13:20 **Machine Learning-Assisted Constraint Handling Under Variable Uncertainty for Preference-based Multi-Objective Optimization**
Deepanshu Yadav, Palaniappan Ramu, Kalyanmoy Deb 🧑🏫 🎤

★ RWA 1

Minotauro

Chair: Günter Rudolph, *TU Dortmund University, Germany*

- 12:00–12:20 **★ Sequence Optimization of Multispacecraft Multitarget Rendezvous Missions with a Coevolutionary Algorithm**
Yu Zhang, Yuehe Zhu, Jiacheng Zhang, Yazhong Luo 🧑🏫 🎤
- 12:20–12:40 **★ Tomographic Reconstruction with Real-time a priori Acquisition**
Muhammad Wishal Khan, Hooman Oroojeni, Bal Sanghera, Tim Blackwell, Mohammad Majid al-Rifaie 🧑🏫 🎤
- 12:40–13:00 **★ Differential Evolution for Infeasible Circumstances in Network-Assisted Full-Duplex Cell-Free Massive MIMO**
Trinh Van Chien, Bui Trong Duc, Mohammadali Mohammadi, Hien Quoc Ngo, Michail Matthaiou 🧑🏫 🎤

GP 1

Alborán

Chair: Penousal Machado, *University of Coimbra, Portugal*

- 12:00–12:20 **Multi-Objective Genetic Programming for Imbalanced Classification with Adaptive Thresholds and a New Fitness Function**
Minghui Bai, Xiaoying Gao, Jiaxin Niu, Jianbin Ma 🖥️ 🎤
- 12:20–12:40 **How Neutrality Shapes Evolution: Simplicity Bias and Search**
Ting Hu, Wolfgang Banzhaf, Gabriela Ochoa 🧑🏫 🎤
- 12:40–13:00 **A comparison of tournament and lexicase selection paradigms in regression problems: error-based fitness versus correlation fitness**
Illya Bakurov, Aidan Murphy, Charles Ofria, Wolfgang Banzhaf 🧑🏫 🎤
- 13:00–13:20 **Desire-Driven Selection: An Epigenetic Experiment in Genetic Programming**
José Maria Simões, Penousal Machado, Nuno Lourenço 🧑🏫 🎤

★ BBSR 1 + ENUM 1

Mena

Chair: Tobias Glasmachers, *Ruhr-University Bochum, Germany*

- 12:00–12:20 **★ Why We Should be Benchmarking Evolutionary Algorithms on Neural Network Training Tasks**
Katherine Mary Malan, Mario Andrés Muñoz 🖥️ 🎤

- 12:20–12:40 **★ When Does Neuroevolution Outcompete Reinforcement Learning in Transfer Learning Tasks?**
Eleni Nisioti, Erwan Plantec, Milton Llera Montero, Joachim Winther Pedersen, Sebastian Risi 🧑🏫 🎧
- 12:40–13:00 **★ CatCMA with Margin: Stochastic Optimization for Continuous, Integer, and Categorical Variables**
Ryoki Hamano, Masahiro Nomura, Shota Saito, Kento Uchida, Shinichi Shirakawa 🧑🏫 🎧
- 13:00–13:20 **★ Challenges of Interaction in Optimizing Mixed Categorical-Continuous Variables**
Youhei Akimoto, Xilin Gao, Ze Kai Ng, Daiki Morinaga 🧑🏫 🎧

Theory 1

Alcazaba

Chair: Christine Zarges, *Aberystwyth University, UK*

- 12:00–12:20 **A Royal Road Function for Permutation Spaces: an Example Where Order Crossover is Provably Essential**
Andre Opris, Sebastian Sonntag, Dirk Sudholt 🧑🏫 🎧
- 12:20–12:40 **Runtime Analysis of Evolutionary Multitasking for Classical Benchmark Problems**
Johannes Lengler, Aneta Neumann, Frank Neumann 🧑🏫 🎧
- 12:40–13:00 **A General Upper Bound for the Runtime of a Coevolutionary Algorithm on Impartial Combinatorial Games**
Alistair Benford, Per Kristian Lehre 🧑🏫 🎧
- 13:00–13:20 **Random Gradient Hyper-heuristics Can Learn to Escape Local Optima in Multimodal Optimisation**
Yuxuan Ma, Pietro S. Oliveto, John Alasdair Warwicker 🧑🏫 🎧

SI 1

Gibraltar

Chair: Edward Keedwell, *University of Exeter, UK*

- 12:00–12:20 **Evolving Neural Controllers for Adaptive Visual Pattern Formation by a Swarm of Robots**
Alessia Loi, Nicolas Bredeche 🧑🏫 🎧
- 12:20–12:40 **Lifelong Evolution of Swarms**
Lorenzo Leuzzi, Davide Bacciu, Sabine Hauert, Simon Jones, Andrea Cossu 🧑🏫 🎧
- 12:40–13:00 **Minimalist exploration strategies for robot swarms at the edge of chaos**
Vinicius Sartorio, Luigi Feola, Vito Trianni, Jonata Tyska Carvalho 🖥️ 🎧
- 13:00–13:20 **HSEPSO: A Hierarchical Self-Evolutionary PSO Approach for UAV Path Planning**
Jie Wei, Yuhui Zhang, Wenhong Wei 🖥️ 🎧

L4EC 1

Jábega

Chair: Nadarajen Veerapen, *Université de Lille, France*

- 12:00–12:20 **Residual Learning Inspired Crossover Operator and Strategy Enhancements for Evolutionary Multitasking**
Ruilin Wang, Xiang Feng, Huiqun Yu, Edmund M-K Lai ▶ 🎧
- 12:20–12:40 **Learning Graph Configuration Spaces to Support Road Network Design Optimisation**
Michael Mittermaier, Takfarinas Saber, Goetz Botterweck 🧑🏫 🎧
- 12:40–13:00 **Automatic Design of Specialized Variation Operators for the Multi-Objective Quadratic Assignment Problem**
Adrián Isai Morales-Paredes, Julio Juárez, Jesús Guillermo Falcón-Cardona, Hugo Terashima-Marín, Carlos A. Coello Coello 🧑🏫 🎧
- 13:00–13:20 **Greedy Restart Schedules: A Baseline for Dynamic Algorithm Selection on Numerical Black-box Optimization Problems**
Lennart Schäpermeier 🧑🏫 🎧

Wednesday, July 16 | 15:30–17:00

EML 2

Azul

Chair: Thomas Bäck, *Leiden University, Netherlands*

- 15:30–15:50 **Transformers as Surrogate Models for Genetic Programming in AutoML Tasks**
Matheus Cândido Teixeira, Gisele Lobo Pappa  
- 15:50–16:10 **Enhancing XCS with Dual-Stream Identification for Perceptual Aliasing in Multi-Step Decision-Making**
Fumito Uwano, Will N. Browne  
- 16:10–16:30 **Adversarial attacks to image classification systems using evolutionary algorithms**
Sergio Nesmachnow, Jamal Toutouh  
- 16:30–16:50 **Evolving Hard Maximum Cut Instances for Quantum Approximate Optimization Algorithms**
Shuaiqun Pan, Yash J. Patel, Aneta Neumann, Frank Neumann, Thomas Bäck, Hao Wang  

★ EMO 1

Minotauro

Chair: Tapabrata Ray, *University of New South Wales, Australia*

- 15:30–15:50 **★ R2 Indicator Analysis using the Optimal Distributions of Solutions for R2 and Other Indicators**
Yang Nan, Hisao Ishibuchi, Tianye Shu, Ke Shang  
- 15:50–16:10 **★ Exploring Phase-Specific Configuration of Interactive Evolutionary Multiobjective Optimization Methods**
Giomara Larraga, Kaisa Miettinen  

RWA 2

Malagueta

Chair: Roman Kalkreuth, *RWTH Aachen University, Germany*

- 15:30–15:50 **Navigating Path-Influenced Environments using Evolutionary Multi-Objective Optimization**
Carlo Nübel, Malte Florim Speidel, Sanaz Mostaghim  
- 15:50–16:10 **Optimization of Unequal-Area Facility Layouts for Mass-Customization Assembly Systems with AGV Material Handling**
Thomas Seidelmann, Sanaz Mostaghim  
- 16:10–16:30 **Exploring the Expressive Space of an Articulatory Vocal Modal using Quality-Diversity Optimization with Multimodal Embeddings**
Joris Grouwels, Nicolas Jonason, Bob L. T. Sturm  
- 16:30–16:50 **Orthogonal Genetic Algorithm for Efficient Delivery Route Planning in TSP-D**
Iyed Nasra, Hervé Camus, Ghaith Manita, Amine Dhraief, Ouajdi Korbaa  

GP 2

Alborán

Chair: Nelishia Pillay, *University of Pretoria, South Africa*

- 15:30–15:50 **Evolutionary Synthesis of Probabilistic Programs**
Romina Doz, Francesca Randone, Eric Medvet, Luca Bortolussi  
- 15:50–16:10 **Reaching Meaningful Diversity with Speciation-Novelty in Genetic Improvement for Software**
Zsolt Nemeth, Penn Faulkner Rainford, Barry Porter  
- 16:10–16:30 **Coordinate System Extraction as the Search Driver in Test-Based Genetic Programming**
Dmytro Vitel, Kok Cheng Tan, Alessio Gaspar, Paul Wiegand  

- 16:30–16:50 **Analysis of Memory-Runtime Trade-offs in Caching Strategies for Genetic Programming Symbolic Regression**
Jiaming Shi, Kei Sen Fong, Mehul Motani 🖥️ 📺

★ GECH 1 + Theory 2

Mena

Chair: James McDermott, *University of Galway, Ireland*

- 15:30–15:50 **★ Augmented Decision Spaces for Stackelberg Security Games: Sparse evolution begets scalability**
Adam Żychowski, Abhishek Gupta, Yew-Soon Ong, Jacek Mańdziuk 🧑 📺
- 15:50–16:10 **★ Improved Runtime Analysis of a Multi-Valued Compact Genetic Algorithm on Two Generalized OneMax Problems**
Sumit Adak, Carsten Witt 🧑 📺
- 16:10–16:30 **★ Why Dominance Is Not Enough: Lessons from Practical Evolutionary Multi-Objective Algorithms**
Duc-Cuong Dang, Andre Opris, Dirk Sudholt 🧑 📺
- 16:30–16:50 **Diversity-driven Cooperating Portfolio of Metaheuristic Algorithms**
Adam Żychowski, Xin Yao, Jacek Mańdziuk 🧑 📺

ECOM 1

Alcazaba

Chair: Emma Hart, *Edinburgh Napier University, UK*

- 15:30–15:50 **Application of PBIG to the Minimum Global Domination Problem**
Salim Bouamama, Christian Blum 🖥️ 📺
- 15:50–16:10 **A Path-Relinking-based Heuristic for the Multiobjective Subgraph Problem**
Daniela Scherer dos Santos, Kathrin Klamroth, Pedro Martins, Luís Paquete 🧑 📺
- 16:10–16:30 **Pareto Front Grid Guided Multiobjective Optimization In Dynamic Pickup And Delivery Problem Considering Two-Sided Fairness**
Hung Phan Duc, Bui Trong Duc, Tam Nguyen Thi, Huynh Thi Thanh Binh 🧑 📺
- 16:30–16:50 **PGU-SGP: A Pheno-Geno Unified Surrogate Genetic Programming For Real-life Container Terminal Truck Scheduling**
Leshan Tan, Chenwei Jin, Xinan Chen, Rong Qu, Ruibin Bai 🧑 📺

SI 2

Gibralfaro

Chair: David J. Walker, *University of Exeter, UK*

- 15:30–15:50 **Learning Grouping Heuristics in Ant Colony Optimization for Combinatorial Problems**
Aseel Ismael Ali, Edward Keedwell, Ayah Helal 🧑 📺
- 15:50–16:10 **Adaptive Multi-Population Dynamic Optimization for Multimodal Dynamic Function Optimization**
Shoei Fujita, Ryuki Ishizawa, Hiroyuki Sato, Keiki Takadama 🧑 📺
- 16:10–16:30 **An Ensemble Ant Colony Optimization Algorithm with a Hybrid Pheromone Model for Learning Rule Lists.**
James Brookhouse, Ayah Helal, Fernando E.B. Otero 🧑 📺

L4EC 2

Jábega

Chair: Anna Kononova, *Leiden University, Netherlands*

- 15:30–15:50 **Accurate Peak Detection in Multimodal Optimization via Approximated Landscape Learning**
Zeyuan Ma, Hongqiao Lian, Wenjie Qiu, Yue-Jiao Gong 🧑 📺

- 15:50–16:10 **Instance Space Analysis for the Capacitated Vehicle Routing Problem with Mixture Discriminant Analysis**
Danielle Notice, Hamed Soleimani, Nicos G. Pavlidis, Ahmed Kheiri, Mario Andrés Muñoz 🧑🏻 🎧
- 16:10–16:30 **Learning Adaptive Neighborhood Search with Dual Operator Selection for Capacitated Vehicle Routing Problem**
Xiang-Ling Chen, Yi Mei, Mengjie Zhang 🧑🏻 🎧
- 16:30–16:50 **Interpretable Decision Trees to Predict Solution Fitness**
GianCarlo Antonino Pasquale Ignazio Catalano, Alexander Brownlee, David Cairns, Russell Ainslie, John McCall 🧑🏻 🎧

Wednesday, July 16 | 17:30–19:00

ECOM 2

Azul

Chair: Kehinde Babaagba, *Edinburgh Napier University, UK*

- 17:30–17:50 **In the Search of Optimal Tree Networks: Hardness and Heuristics**
Pavel Martynov, Maxim Buzdalov, Sergey Pankratov, Vitaliy Aksenov, Stefan Schmid 🖥️ 🎧
- 17:50–18:10 **Elitist Evolutionary Algorithm for Optimization on Sets of Points**
Takumi Matsuo, Kento Uchida, Shinichi Shirakawa 🧑🏻 🎧
- 18:10–18:30 **A Learning-assisted Discrete Differential Evolution for Resource Constrained Project Scheduling**
Yun Dong, Lixin Tang, Weiyan Jia 🧑🏻 🎧
- 18:30–18:50 **A Multiform Many-Objective Genetic Programming Method for Dynamic Flexible Job Shop Scheduling**
Junwei Pang, Yi Mei, Mengjie Zhang 🧑🏻 🎧

★ GA 1 + SI 3

Minotauro

Chair: Dirk Thierens, *Utrecht University, Netherlands*

- 17:30–17:50 **★ Empirical Linkage Learning Provably Builds Truthful Models on Concatenated Traps and H-IFF**
Marcus Schmidbauer, Dirk Sudholt 🖥️ 🎧
- 17:50–18:10 **★ Congestion-Aware Multi-Agent Path Planning for Pick-Up and Delivery Tasks**
Mehrdad Asadi, Ann Nowé, Javad Ghofrani 🖥️ 🎧
- 18:10–18:30 **On the Use of Matching Algorithms to Transfer Solutions for the Travelling Salesperson Problem**
Liam Wigney, Aneta Neumann, Yew-Soon Ong, Frank Neumann 🧑🏻 🎧
- 18:30–18:50 **Evolutionary Multitasking for the Scenario-based Travelling Thief Problem**
Thilina Pathirage Don, Aneta Neumann, Frank Neumann 🧑🏻 🎧

RWA 3

Malagueta

Chair: Roman Kalkreuth, *RWTH Aachen University, Germany*

- 17:30–17:50 **CLEAR: Cue Learning using Evolution for Accurate Recognition Applied to Sustainability Data Extraction**
Peter Bentley, Soo Ling Lim, Fuyuki Ishikawa 🖥️ 🎧
- 17:50–18:10 **Feature Selection Using Genetic Algorithm for Intrusion Detection on Resource-Constrained Edge Devices**
Tijana Markovic, Pontus Lidholm, Per Erik Strandberg, Miguel Leon 🧑🏻 🎧
- 18:10–18:30 **Contribution of Probabilistic Structured Grammatical Evolution to efficient exploration of the search space. A case study in glucose prediction**
Jessica Mégane, Nuno Lourenço, J. Ignacio Hidalgo, Penousal Machado 🧑🏻 🎧

- 18:30–18:50 **Seeking and leveraging alternative variable dependency concepts in gray-box-elusive bimodal land-use allocation problems**
Jakub Maciążek, Michal Witold Przewozniczek, Jonas Schwaab 🧑🏻 🎥

EMO 2

Alborán

Chair: Dimo Brockhoff, *Inria and Ecole Polytechnique, France*

- 17:30–17:50 **Multi-Objective Covariance Matrix Adaptation MAP-Annealing**
Shihan Zhao, Stefanos Nikolaidis 🧑🏻 🎥
- 17:50–18:10 **Reference Point Specification in Greedy Inclusion Hypervolume-based Subset Selection: A Study on Two Objectives**
Adrián Isai Morales-Paredes, Jesús Guillermo Falcón-Cardona, Julio Juárez, Hugo Terashima-Marín, Carlos A. Coello Coello 🧑🏻 🎥
- 18:10–18:30 **Multiagent Credit Assignment for Multi-Objective Coordination**
Raghav Thakar, Gaurav Dixit, Siddarth Iyer, Kagan Tumer 🧑🏻 🎥
- 18:30–18:50 **Customized Exploration of Landscape Features Driving Multi-Objective Combinatorial Optimization Performance**
Ana Nikolikj, Gabriela Ochoa, Tome Eftimov 🧑🏻 🎥

★ **EML 3**

Mena

Chair: Ryan Urbanowicz, *Cedars-Sinai Medical Center, USA*

- 17:30–17:50 ★ **Evolution of Inherently Interpretable Visual Control Policies**
Camilo De La Torre, Giorgia Nadizar, Yuri Lavinias, Hervé Luga, Dennis Wilson, Sylvain Cussat-Blanc 🧑🏻 🎥
- 17:50–18:10 ★ **Dynamic Influence For Coevolutionary Agents**
Everardo Gonzalez, Gaurav Dixit, Kagan Tumer 🧑🏻 🎥
- 18:10–18:30 ★ **Evolutionary Quadtree Pooling for Convolutional Neural Networks**
Po-Wei Harn, Bo Hui, Libo Sun, Wei-Shinn Ku 🧑🏻 🎥

GECH 2

Alcazaba

Chair: Alberto Moraglio, *University of Exeter, UK*

- 17:30–17:50 **Unlearning Works Better Than You Think: Local Reinforcement-Based Selection of Auxiliary Objectives**
Matthieu Lerasle, Abderrahim Bendahi, Adrien Fradin 🧑🏻 🎥
- 17:50–18:10 **Code Evolution Graphs: Understanding Large Language Model Driven Design of Algorithms**
Niki van Stein, Anna Kononova, Lars Kotthoff, Thomas Bäck 🧑🏻 🎥
- 18:10–18:30 **Hybrid Selection Allows Steady-State Evolutionary Algorithms to Control the Selective Pressure in Multimodal Optimisation**
Dogan Corus, Pietro S. Oliveto, Feiyang Zheng 🧑🏻 🎥
- 18:30–18:50 **Key Insights into Estimating Nash Equilibria in Simultaneous Continuous Multiplayer Games Using Coevolutionary Algorithms**
Rui Leite, Hernan Aguirre, Kiyoshi Tanaka 🧑🏻 🎥

BBSR 2

Gibralfaro

Chair: Vanessa Volz, *Centrum Wiskunde & Informatica, Netherlands*

- 17:30–17:50 **Evaluation Time Bias in Asynchronous Evolutionary Algorithms: A Replication Study and a Novel Mitigation Strategy**
Joshua Karns, Travis Desell 🧑🏻 🎥
- 17:50–18:10 **Multi-objective L-shaped Test Functions**
Angus Kenny, Tapabrata Ray, Hemant Singh 🧑🏻 🎥

- 18:10–18:30 **SynthACTicBench: A Capability-Based Synthetic Benchmark for Algorithm Configuration**
Valentin Margraf, Anna Lappe, Marcel Wever, Carolin Benjamins, Eyke Hüllermeier, Marius Lindauer 🧑🏻 🗣️
- 18:30–18:50 **MILPBench: A Large-scale Benchmark Test Suite for Mixed Integer Linear Programming Problems**
Huigen Ye, Yaoyang Cheng, Hua Xu, Zhiguang Cao, Hanzhang Qin 🧑🏻 🗣️

L4EC 3

Jábega

Chair: Jakub Kudela, *Brno University of Technology, Czechia*

- 17:30–17:50 **Reinforcement Learning-Based Self-Adaptive Differential Evolution through Automated Landscape Feature Learning**
Hongshu Guo, Sijie Ma, Zechuan Huang, Yuzhi Hu, Zeyuan Ma, Xinglin Zhang, Yue-Jiao Gong 🗣️ 🗣️
- 17:50–18:10 **Surrogate Learning in Meta-Black-Box Optimization: A Preliminary Study**
Zeyuan Ma, Zhiyang Huang, Jiacheng Chen, Zhiguang Cao, Yue-Jiao Gong 🗣️ 🗣️

Thursday, July 17 | 12:00–13:30**ECOM 3**

Azul

Chair: Yi Mei, *Victoria University of Wellington, New Zealand*

- 12:00–12:20 **Smooth Transition Instance Chains in Combinatorial Optimization Problems**
Valentino Santucci, Marco Bairoletti, Marco Tomassini 🧑🏻 🗣️
- 12:20–12:40 **Ant Colony Optimization with Policy Gradients and Replay**
William Jardee, John Sheppard 🧑🏻 🗣️
- 12:40–13:00 **Ant Colony Optimization for Tourist Route Planning**
Li-Ting Xu, Qiang Yang, Dan-Ting Duan, Xin Lin, Cheng-Zhi Qu, Zhen-Yu Lu, Jun Zhang 🧑🏻 🗣️
- 13:00–13:20 **Ant Colony Optimization Algorithm for Safest Path Computation in Presence of Correlated Failures in Backbone Networks**
Zoltán Tasnádi, Balázs Vass, Noemi Gasko 🧑🏻 🗣️

★ GP 3 + Impact

Minotauro

Chair: Nelishia Pillay, *University of Pretoria, South Africa*

- 12:00–12:20 **★ An Online Genetic Programming Approach to Dynamic Production Scheduling**
Binh Tran, Su Nguyen 🗣️ 🗣️
- 12:20–12:40 **★ Quality Diversity Genetic Programming for Learning Scheduling Heuristics**
Meng Xu, Frank Neumann, Aneta Neumann, Yew-Soon Ong 🧑🏻 🗣️
- 12:40–13:00 **★ Transformer Semantic Genetic Programming for Symbolic Regression**
Philipp Anthes, Dominik Sobania, Franz Rothlauf 🧑🏻 🗣️
- 13:00–13:20 **☆ Benchmarking program synthesis in genetic programming and beyond: reflections and future directions**
Thomas Helmuth, Lee Spector 🧑🏻 🗣️
- 13:20–13:40 **MAPLE: Multi-Action Programs through Linear Evolution for Continuous Multi-Action Reinforcement Learning**
Quentin Vacher, Stephen Kelly, Ali Naqvi, Nicolas Beuve, Tanya Djavaherpour, Mickaël Dardaillon, Karol Desnos 🧑🏻 🗣️

RWA 4

Malagueta

Chair: Roman Kalkreuth, *RWTH Aachen University, Germany*

- 12:00–12:20 **Symbolic Pricing Policies for Attended Home Delivery – the Case of an Online Retailer**
Miguel Lunet, Daniela Fernandes, Fábio Neves-Moreira, Pedro Amorim 🧑🏻 🎥
- 12:20–12:40 **Multi-Agent Swarm Optimization for Decentralized Energy Management Considering Game Behaviors of Electric Vehicles**
Tai-You Chen, Feng-Feng Wei, Wei-Neng Chen 🧑🏻 🎥
- 12:40–13:00 **Ensemble Phased Genetic Programming for Roundabout Turn Restriction Prediction**
Darren Chitty, Ayah Helal, Sareh Rowlands, Craig Willis, Christopher Underwood, Edward Keedwell 🧑🏻 🎥
- 13:00–13:20 **A Dijkstra Seeded Evolutionary Multiobjective Optimization System for a Sustainable User Multimodal Transport Routing**
Guilherme Barbosa, Pedro José Pereira, Vasco Abelha, Rui Mendes, Paulo Cortez 🧑🏻 🎥

EMO 3

Alborán

Chair: Hisao Ishibuchi, *Southern University of Science and Technology and Osaka Prefecture University, China*

- 12:00–12:20 **Variable Metric Evolution Strategies for High-dimensional Multi-Objective Optimization**
Tobias Glasmachers 🧑🏻 🎥
- 12:20–12:40 **An Evolutionary Algorithm for Solving Decision Space Constrained Multi-Objective Binary Optimization Problems**
Felipe Honjo Ide, Hernan Aguirre, Kiyoshi Tanaka 🧑🏻 🎥
- 12:40–13:00 **On the Pareto Set and Front of Multiobjective Spherical Functions with Convex Constraints**
Anne Auger, Dimo Brockhoff, Jordan Cork, Tea Tušar 🧑🏻 🎥
- 13:00–13:20 **Scalarization-based Exploratory Landscape Analysis for Multi-Objective Continuous Optimization Problems**
Shuhei Tanaka, Shoichiro Tanaka, Toshiharu Hatanaka 🧑🏻 🎥

★ CS 1 + NE 1

Mena

Chair: Dennis Wilson, *Université de Toulouse, France*

- 12:00–12:20 **★ Competition and Attraction Improve Model Fusion**
João Abrantes, Robert Tjarko Lange, Yujin Tang 🧑🏻 🎥
- 12:20–12:40 **★ Evolving Comprehensive Proxies for Zero-Shot Neural Architecture Search**
Junhao Huang, Bing Xue, Yanan Sun, Mengjie Zhang 🧑🏻 🎥
- 12:40–13:00 **★ Extract-QD Framework: A Generic Approach for Quality-Diversity in Noisy, Stochastic or Uncertain Domains**
Manon Flageat, Johann Huber, François Helenon, Stéphane Doncieux, Antoine Cully 🧑🏻 🎥
- 13:00–13:20 **★ Visualizing the Dynamics of Neuroevolution with Genetic Distance Projections**
Evan Hayden Patterson, Joshua Karns, Zimeng Lyu, Travis Desell 🧑🏻 🎥

GECH 3

Alcazaba

Chair: Thomas Gabor, *LMU Munich, Germany*

- 12:00–12:20 **Analysing the Effectiveness of Mutation Operators for One-Sided Bipartite Crossing Minimisation**
Jakob Baumann, Ignaz Rutter, Dirk Sudholt 🧑🏻 🎥
- 12:20–12:40 **Solving the Cubic Knapsack Problem using Quantum-Inspired Digital Annealer Technology**
Thiago Alves de Queiroz, Manuel Iori, Alberto Locatelli, Matthieu Parizy 🧑🏻 🎥

- 12:40–13:00 **Quantum Circuit Construction and Optimization through Hybrid Evolutionary Algorithms**
Leo Sünkel, Philipp Altmann, Michael Kölle, Gerhard Stenzel, Thomas Gabor, Claudia Linnhoff-Popien 🧑🏻 🗣️
- 13:00–13:20 **Enhancing Quality-Diversity Optimization Through Domain-Specific Dissimilarity as Crowding Distance**
Maciej Komosinski, Agnieszka Mensfelt 🧑🏻 🗣️
- 13:20–13:40 **Evaluating Mutation Techniques in Genetic-Algorithm-Based Quantum Circuit Synthesis**
Michael Kölle, Tom Bintener, Maximilian Zorn, Gerhard Stenzel, Leo Sünkel, Thomas Gabor, Claudia Linnhoff-Popien 🧑🏻 🗣️

BBSR 3

Gibralfaro

Chair: Diederick Vermetten, *Sorbonne Université, France*

- 12:00–12:20 **Automated Algorithm Configuration and Systematic Benchmarking for Heterogeneous MNK-Landscapes**
Oliver Ludger Preuß, Carolin Mensendiek, Jeroen Rook, Jakob Bossek, Heike Trautmann 🧑🏻 🗣️
- 12:20–12:40 **rEGGression: an Interactive and Agnostic Tool for the Exploration of Symbolic Regression Models**
Fabrício Olivetti de França, Gabriel Kronberger 🧑🏻 🗣️
- 12:40–13:00 **Subfunction Structure Matters: A New Perspective on Local Optima Networks**
Sarah L. Thomson, Michal Witold Przewozniczek 🧑🏻 🗣️
- 13:00–13:20 **Evolving Diverse Differentiating Stochastic Constraints Using Multi-objective Indicators**
Saba Sadeghi Ahouei, Aneta Neumann, Frank Neumann 🧑🏻 🗣️
- 13:20–13:40 **RandOptGen: A Unified Random Problem Generator for Single- and Multi-Objective Optimization Problems with Mixed-Variable Input Spaces**
Moritz Vinzent Seiler, Oliver Ludger Preuß, Heike Trautmann 🧑🏻 🗣️

GA 2

Jábega

Chair: Francisco Chicano, *University of Málaga, Spain*

- 12:00–12:20 **Energy and Performance Analysis of Parallel Heterogeneous Genetic Algorithms under Various CPU and GPU DVFS Governors: A Preliminary Study on Predictive Profiling**
Amr Abdelhafez, Alexey Lastovetsky 🖥️ 🗣️
- 12:20–12:40 **Evo-SINDy: Universal Discovery of Partial Differential Equations Using Cooperative Evolutionary Computation**
Yuxin Jiang, Jianyong Sun 🖥️ 🗣️
- 12:40–13:00 **Gradient-Free Sparse Adversarial Attack on Object Detection Models**
Chi Cuong Le, Tri Phan, Ngoc Hoang Luong 🧑🏻 🗣️
- 13:00–13:20 **Dramatically Faster Partition Crossover for the Traveling Salesman Problem**
Ozeas Quevedo de Carvalho, Darrell Whitley 🧑🏻 🗣️
- 13:20–13:40 **How Partition Crossover Exposes Parallel Lattices and the Fractal Structure of k-Bounded Functions**
Darrell Whitley, Gabriela Ochoa, Francisco Chicano 🧑🏻 🗣️

Thursday, July 17 | 15:30–17:00

EML 4

Azul

Chair: Pierluca Lanzi, *Politecnico di Milano, Italy*

- 15:30–15:50 **Feature selection based on cluster assumption in PU learning**
Motonobu Uchikoshi, Youhei Akimoto 🧑🏫 🗣️
- 15:50–16:10 **Rule-based Machine Learning: Separating Rule and Rule-Set Pareto-Optimization for Interpretable Noise-Agnostic Modeling**
Gabriel Lipschutz-Villa, Harsh Bandhey, Ruonan Yin, Malek Kamoun, Ryan Urbanowicz 🧑🏫 🗣️
- 16:10–16:30 **Dataset Reduction for Offline Reinforcement Learning using Genetic Algorithms with Image-Based Heuristics**
Enrique Mateos-Melero, Miguel Iglesias Alcázar, Raquel Fuentetaja, Fernando Fernández 🧑🏫 🗣️
- 16:30–16:50 **Genetic Algorithms for Tractable Bayesian Network Fusion via Pre-Fusion Edge Pruning**
Pablo Torrijos, José A. Gámez, José M. Puerta, Juan A. Aledo 🧑🏫 🗣️

★ ECOM 4

Minotauro

Chair: Sarah L. Thomson, *Edinburgh Napier University, UK*

- 15:30–15:50 **★ To Repair or Not to Repair? Investigating the Importance of AB-Cycles for the State-of-the-Art TSP Heuristic EAX**
Jonathan Heins, Darrell Whitley, Pascal Kerschke 🧑🏫 🗣️
- 15:50–16:10 **★ On Revealing the Hidden Problem Structure in Real-World and Theoretical Problems Using Walsh Coefficient Influence**
Michał Witold Przewozniczek, Francisco Chicano, Renato Tinós, Jakub Nalepa, Bogdan Ruszczak, Agata Maria Wijata 🧑🏫 🗣️
- 16:10–16:30 **★ Large Neighborhood Search for Capacitated Facility Location with Customer Incompatibilities**
Ida Gjergji, Lucas Kletzander, Nysret Musliu, Andrea Schaerf 🧑🏫 🗣️
- 16:30–16:50 **Dynamic Temperature Control of Simulated Annealing using Hyper-Heuristics**
Francesca Da Ros, Luca Di Gaspero, Lucas Kletzander, Marie-Louise Lackner, Nysret Musliu, Andrea Schaerf 🧑🏫 🗣️

RWA 5

Malagueta

Chair: Fabrício Olivetti de França, *Universidade Federal do ABC, Brazil*

- 15:30–15:50 **Evolutionary Algorithms for Metabolic Transformation through Multi-gene Knockout Optimization**
Bruno Sá, Alexandre Oliveira, Miguel Rocha 🗣️ 🗣️
- 15:50–16:10 **Search-based Generation of Waypoints for Triggering Self-Adaptations in Maritime Autonomous Vessels**
Karoline Nylænder, Aitor Arrieta, Shaukat Ali, Paolo Arcaini 🧑🏫 🗣️
- 16:10–16:30 **A Quality Diversity Approach to Evolving Model Rockets**
Jacob Schrum, Cody Crosby 🧑🏫 🗣️
- 16:30–16:50 **Unveiling the dynamics of NOx pollution in internal combustion engines by Structured Grammatical Evolution**
Marcos Llamazares López, Daniel Parra, Jose Manuel Velasco Cabo, Óscar Garnica, Rafael Jacinto Villanueva Micó, J. Ignacio Hidalgo 🧑🏫 🗣️

EMO 4

Alborán

Chair: Tea Tušar, *Jožef Stefan Institute, Slovenia*

- 15:30–15:50 **Addressing Heterogeneous Evaluation Times in Constrained Multi-Objective Optimization using a Mixed-Fidelity Evaluation Technique: Proof-of-Concept Results**
Balija Santoshkumar, Kalyanmoy Deb 🧑🏿 🎧
- 15:50–16:10 **Search Behavior Analysis of NSGA-III: Dominance-based and Decomposition-based Multi-objective Evolutionary Algorithm**
Hisao Ishibuchi, Lie Meng Pang, Cheng Gong 🧑🏿 🎧
- 16:10–16:30 **Analyzing the Landscape of the Indicator-based Subset Selection Problem**
Keisuke Korogi, Ryoji Tanabe 🧑🏿 🎧
- 16:30–16:50 **Influence of Subpopulation on the Performance of Coevolutionary Algorithms for Constrained Multiobjective Optimization Problems**
Yanyu Chen, Hisao Ishibuchi, Yang Nan 🧑🏿 🎧

★ L4EC 4

Mena

Chair: Clarisse Dhaenens, *Université de Lille, France*

- 15:30–15:50 **★ Deep reinforcement learning for instance-specific algorithm configuration**
Elias Schede, Moritz Vinzent Seiler, Kevin Tierney, Heike Trautmann 🧑🏿 🎧
- 15:50–16:10 **★ The Pitfalls of Benchmarking in Algorithm Selection: What We Are Getting Wrong**
Gašper Petelin, Gjorgjina Cenikj 🧑🏿 🎧
- 16:10–16:30 **★ On the Importance of Reward Design in Reinforcement Learning-based Dynamic Algorithm Configuration: A Case Study on OneMax with $(1+(\lambda,\lambda))$ -GA**
Tai Nguyen, Phong Le, André Biedenkapp, Carola Doerr, Nguyen Dang 🧑🏿 🎧

ENUM 2

Alcazaba

Chair: Anne Auger, *Inria and Ecole Polytechnique, France*

- 15:30–15:50 **Toward Efficient Mixed-Integer Black-Box Optimization via Evolution Strategies with Plateau Handling Techniques**
Tuan Anh Nguyen, Ngoc Hoang Luong 🧑🏿 🎧
- 15:50–16:10 **Abnormal Mutations: Evolution Strategies Don't Require Gaussianity**
Jacob de Nobel, Diederick Vermetten, Hao Wang, Anna Kononova, Günter Rudolph, Thomas Bäck 🧑🏿 🎧
- 16:10–16:30 **More Efficient Real-Valued Gray-Box Optimization through Incremental Distribution Estimation in RV-GOMEA**
Renzo Scholman, Tanja Alderliesten, Peter A.N. Bosman 🧑🏿 🎧
- 16:30–16:50 **A Perturbation and Speciation-Based Algorithm for Dynamic Optimization Uninformed of Change**
Federico Signorelli, Anil Yaman 🧑🏿 🎧

NE 2

Gibralfaro

Chair: Bing Xue, *Victoria University of Wellington, New Zealand*

- 15:30–15:50 **Neuroevolution of Self-Attention Over Proto-Objects**
Rafael Coimbra Pinto, Anderson Rocha Tavares 🖥️ 🎧
- 15:50–16:10 **SiamNAS: Siamese Surrogate Model for Dominance Relation Prediction in Multi-objective Neural Architecture Search**
Yuyang Zhou, Ferrante Neri, Yew-Soon Ong, Ruibin Bai 🧑🏿 🎧
- 16:10–16:30 **CPPN2WFC: Extending Wave Function Collapse to Generate Globally Coherent Content**
Oleg Jarma Montoya, František Srb, Djordje Grbic, Sebastian Risi 🧑🏿 🎧

- 16:30–16:50 **Integrating Neural Architecture Search and Rematerialization for Efficient On-Device Learning**
Chih-Ling Chen, Kai-Chiang Wu, Ning-Chi Huang 🧑🏫 🎥

CS 2

Jábega

Chair: Hannah Janmohamed, *Imperial College, UK*

- 15:30–15:50 **Overcoming Deceptiveness in Fitness Optimization with Unsupervised Quality-Diversity**
Lisa Coiffard, Paul Templier, Antoine Cully 🧑🏫 🎥
- 15:50–16:10 **Controller Distillation Reduces Fragile Brain-Body Co-Adaptation and Enables Migrations in MAP-Elites**
Alican Mertan, Nick Cheney 🧑🏫 🎥
- 16:10–16:30 **Dominated Novelty Search: Rethinking Local Competition in Quality-Diversity**
Ryan Bahlous-Boldi, Maxence Faldor, Luca Grillotti, Hannah Janmohamed, Lisa Coiffard, Lee Spector, Antoine Cully 🧑🏫 🎥
- 16:30–16:50 **Multi-Objective Quality-Diversity in Unstructured and Unbounded Spaces**
Hannah Janmohamed, Antoine Cully 🧑🏫 🎥

Friday, July 18 | 10:00–11:30**EML 5**

Azul

Chair: Franz Rothlauf, *University of Mainz, Germany*

- 10:00–10:20 **Guiding Evolutionary AutoEncoder Training with Activation-Based Pruning Operators**
Steven Jorgensen, Erik Hemberg, Jamal Toutouh, Una-May O'Reilly 🧑🏫 🎥
- 10:20–10:40 **Black-Box Adversarial Attack on Dialogue Generation via Multi-Objective Optimization**
Khang Gia Le, Ngoc Hoang Luong 🧑🏫 🎥
- 10:40–11:00 **ImageBreeder: Guiding Diffusion Models with Evolutionary Computation**
Dominik Sobania, Martin Briesch, Franz Rothlauf 🧑🏫 🎥

GP 4

Minotauro

Chair: Wolfgang Bhanzaf, *Michigan State University, USA*

- 10:00–10:20 **Improving Genetic Programming for Symbolic Regression with Equality Graphs**
Fabrício Olivetti de França, Gabriel Kronberger 🧑🏫 🎥
- 10:20–10:40 **Uniform Projection of Program Space Geometry for Genetic Improvement of Software**
Benjamin Craine, Barry Porter 🧑🏫 🎥
- 10:40–11:00 **Slim_gsgp: A Python Library for Non-Bloating GSGP**
Liah Rosenfeld, Davide Farinati, Diogo Rasteiro, Gloria Pietropoli, Karina Brotto Rebuli, Sara Silva, Leonardo Vanneschi 🧑🏫 🎥
- 11:00–11:20 **Program Synthesis with LLM-Predicted Minimal Specialized Grammars**
David Vella Zarb, Geoff Parks, Timoleon Kipouros 🧑🏫 🎥

RWA 6

Malagueta

Chair: Alexander Brownlee, *University of Stirling, UK*

- 10:00–10:20 **Bayesian Optimization for CVaR-based portfolio optimization**
Robert Millar, Jinglai Li 🧑🏫 🎥
- 10:20–10:40 **Optimization of Conformal Cooling Channels for Injection Molding Using Multi-Objective Artificial Intelligence Techniques**
Antonio Gaspar-Cunha, João Melo, Tomás Marques, António Pontes 🧑🏫 🎥

- 10:40–11:00 **GA-PRE: A Genetic Algorithm-Based Automatic Data Preprocessing Algorithm**
Jian Jiao, Liu Yuan  

EMO 5

Alborán

Chair: Carlos A. Coello Coello, *CINVESTAV-IPN, Mexico*

- 10:00–10:20 **Improved Convergence-relaxed Mechanism for Handling Imbalance Between Convergence and Diversity in the Decision Space in Multimodal Multi-objective optimization**
Zhipan Li, Wenkai Mao, Huigui Rong, Jianguo Chen, Shengxu Huo, Zilu Zhao  
- 10:20–10:40 **Constrained Multi-objective Optimization with Search Direction Learning**
Mingcheng Zuo, Dunwei Gong, Tianyang Xue, Chunliang Zhao, Yongde Guo  
- 10:40–11:00 **High-Dimensional Expensive Multiobjective Optimization Using a Surrogate-Assisted Multifactorial Evolutionary Algorithm**
Yuma Horaguchi, Masaya Nakata  
- 11:00–11:20 **Genotype vs. Phenotype: A Crossover Operator Comparison for the Multi-Objective Coverage Path Planning Problem**
Lukas Bostelmann-Arp, Christoph Steup, Sanaz Mostaghim  

ECOM 5

Mena

Chair: Yi Mei, *Victoria University of Wellington, New Zealand*

- 10:00–10:20 **Moving between high-quality optima using multi-satisfiability characteristics in hard-to-solve Max3Sat instances**
Jędrzej Piątek, Michał Witold Przewozniczek, Francisco Chicano, Renato Tinós  
- 10:20–10:40 **Performance Comparison between Evolutionary Algorithms and Linear Programming-based Relaxation Methods for Multi-Objective Knapsack Problems**
Cheng Gong, Ping Guo, Lie Meng Pang, Qingfu Zhang, Hisao Ishibuchi  
- 10:40–11:00 **Cluster Prevention in Evolutionary Diversity Optimization for Parallel Machine Scheduling**
Dominic Wittner, Jakob Bossek  
- 11:00–11:20 **Local Optima Networks for Constrained Search Spaces**
Jonathan Fieldsend, Arnaud Liefooghe, Katherine Mary Malan, Sébastien Verel  

ENUM 3

Alcazaba

Chair: Youhei Akimoto, *University of Tsukuba and RIKEN AIP, Japan*

- 10:00–10:20 **Classification-Based Linear Surrogate Modeling of Constraints for AL-CMA-ES**
Oskar Girardin, Nikolaus Hansen, Dimo Brockhoff, Anne Auger  
- 10:20–10:40 **An Adaptive Re-evaluation Method for Evolution Strategy under Additive Noise**
Catalin-Viorel Dinu, Yash J. Patel, Xavier Bonet-Monroig, Hao Wang  
- 10:40–11:00 **Surrogate-Assisted CMA-ES for Problems with Low Effective Dimensionality**
Yuta Sekino, Yohei Watanabe, Kento Uchida, Shinichi Shirakawa  
- 11:00–11:20 **Adaptive Estimation of the Number of Algorithm Runs in Stochastic Optimization**
Tome Eftimov, Peter Korošec  

NE 3

Gibralfaro

Chair: Risto Miikkulainen, *University of Texas at Austin, USA*

- 10:00–10:20 **A Multi-Objective Approach to Optimizing Kolmogorov-Arnold Networks**
Quan Long, Bin Wang, Bing Xue, Mengjie Zhang  
- 10:20–10:40 **Neuro-Evolutionary Approach to Physics-Aware Symbolic Regression**
Jiří Kubalík, Robert Babuska  
- 10:40–11:00 **Diversity in Reinforcement Learning Through the Occupancy Measure**
Arno Feiden, Jochen Garcke  

- 11:00–11:20 **Scaling Policy Gradient Quality-Diversity with Massive Parallelization via Behavioral Variations**
Konstantinos Mitsides, Maxence Faldor, Antoine Cully 🧑🏻 🎥

CS 3

Jábega

Chair: Malcolm Heywood, *Dalhousie University, Canada*

- 10:00–10:20 **Fertility During Learning in Evolutionary Robot Systems**
Jacopo Michele Di Matteo, Oliver Weissl, A.E. Eiben 🧑🏻 🎥
- 10:20–10:40 **Classifier Systems as Linear Probability Models**
Gijs Schröder, Johannes Textor 🧑🏻 🎥
- 10:40–11:00 **Emergent Braitenberg-style Behaviours for Navigating the ViZDoom ‘My Way Home’ Labyrinth**
Caleidgh Bayer, Robert Smith, Malcolm Heywood 🧑🏻 🎥

Hot off the Press

Wednesday, July 16 | 12:00–13:30

HOP 1

Arlequín & Tauromaquia

Chair: Bing Xue, *Victoria University of Wellington, New Zealand*

- 12:00–12:10 **Fitness Landscapes of Buffer Allocation Problem in Production Lines and Genetic Algorithms Performance**
Alexandre Dolgui, Anton Ereemeev, Vyatcheslav Sigaev 🖥️ 🎧
- 12:10–12:20 **An Archive Can Bring Provable Speed-ups in Multi-Objective Evolutionary Algorithms**
Chao Bian, Shengjie Ren, Miqing Li, Chao Qian 🖥️ 🎧
- 12:20–12:30 **Hot off the Press: Runtime Analysis of the Compact Genetic Algorithm on the LeadingOnes Benchmark**
Marcel Chwiałkowski, Benjamin Doerr, Martin S. Krejca 🧑🏫 🎧
- 12:30–12:40 **Explainable Benchmarking for Iterative Optimization Heuristics**
Niki van Stein, Diederick Vermetten, Anna Kononova, Thomas Bäck 🧑🏫 🎧
- 12:40–12:50 **Hot off the Press: Speeding Up the NSGA-II With a Simple Tie-Breaking Rule**
Benjamin Doerr, Tudor Ivan, Martin S. Krejca 🧑🏫 🎧
- 12:50–13:00 **New evolutionary methods for solving single- and multi-objective political redistricting problems: The context of Poland**
Michał Tomczyk, Miłosz Kadziński 🧑🏫 🎧
- 13:00–13:10 **EVOTER: Evolution of Transparent Explainable Rule sets**
Hormoz Shahrzad, Babak Hodjat, Risto Miikkulainen 🖥️ 🎧
- 13:10–13:20 **Multi-Objective Bayesian Optimization with Reinforcement Learning for Edge Deployment of DNNs on Microcontrollers**
Mark Deutel, Georgios Kontes, Christopher Mutschler, Jürgen Teich 🧑🏫 🎧

Wednesday, July 16 | 15:30–17:00

HOP 2

Arlequín & Tauromaquia

Chair: Sarah L. Thomson, *Napier Edinburgh University, UK*

- 15:30–15:40 **Knowledge-based Optimization in Epidemics Prevention**
Krzysztof Michalak 🖥️ 🎧
- 15:40–15:50 **Evolutionary Multiobjective Optimization Assisted by Scalarization Function Approximation for High-Dimensional Expensive Problems (HOP GECCO'25)**
Yuma Horaguchi, Kei Nishihara, Masaya Nakata 🧑🏫 🎧
- 15:50–16:00 **Hot off the Press: Proven Runtime Guarantees for How the MOEA/D Computes the Pareto Front From the Subproblem Solutions**
Benjamin Doerr, Martin S. Krejca, Noé Weeks 🧑🏫 🎧
- 16:00–16:10 **On Defining and Discovering Non-Symmetrical Dependencies**
Michał Witold Przewozniczek, Bartosz Frej, Marcin Michał Komarnicki 🧑🏫 🎧
- 16:10–16:20 **Selection Methods in Genetic Programming: A Performance Analysis**
Alina Geiger, Dominik Sobania, Franz Rothlauf 🧑🏫 🎧
- 16:20–16:30 **Doubly Stochastic Matrix Models and the Quadratic Assignment Problem**
Valentino Santucci, Josu Ceberio 🧑🏫 🎧

- 16:30–16:40 **Hot off the Press: Finding ϵ -locally Optimal Solutions for Multi-objective Multimodal Optimization**
Angel E. Rodriguez-Fernandez, Lennart Schäpermeier, Carlos Ignacio Hernández Castellanos, Pascal Kerschke, Heike Trautmann, Oliver Schütze 🧑🏻 🗣️
- 16:40–16:50 **Hot off the Press: Can Evolutionary Clustering Have Theoretical Guarantees?**
Chao Qian 🧑🏻 🗣️

Wednesday, July 16 | 17:30–19:00

HOP 3

Arlequín & Tauromaquia

Chair: Fabrício Olivetti de França, *Universidade Federal do ABC, Brazil*

- 17:30–17:40 **Discovering Shared Function Structures with Adaptable Parameters for Multi-Level Modeling via Symbolic Regression**
Kei Sen Fong, Mehul Motani 🗣️ 🗣️
- 17:40–17:50 **Alternating between Surrogate Model Construction and Search for Configurations of an Autonomous Delivery System (Hot off the Press at GECCO 2025)**
Chin-Hsuan Sun, Thomas Laurent, Paolo Arcaini, Fuyuki Ishikawa 🗣️ 🗣️
- 17:50–18:00 **Hot off the Press: Near-Tight Runtime Guarantees for Many-Objective Evolutionary Algorithms**
Simon Wietheger, Benjamin Doerr 🧑🏻 🗣️
- 18:00–18:10 **Hot Off the Press: A Newton Method for Hausdorff Approximations of the Pareto Front within Multi-objective Evolutionary Algorithms**
Hao Wang, Angel E. Rodriguez-Fernandez, Lourdes Uribe, André Deutz, Oziel Cortés-Piña, Oliver Schütze 🧑🏻 🗣️
- 18:10–18:20 **Hot off the Press: Runtime Analysis for Multi-Objective Evolutionary Algorithms in Unbounded Integer Spaces**
Benjamin Doerr, Martin S. Krejca, Günter Rudolph 🧑🏻 🗣️
- 18:20–18:30 **Hot off the Press: Runtime Analysis for State-of-the-Art Multi-objective Evolutionary Algorithms on the Subset Selection Problem**
Renzhong Deng, Weijie Zheng, Mingfeng Li, Jie Liu, Benjamin Doerr 🗣️ 🗣️
- 18:30–18:40 **Analyzing Single-objective Black-box Optimization Algorithms Using the Empirical Attainment Function**
Manuel López-Ibáñez, Diederick Vermetten, Johann Dreö, Carola Doerr 🧑🏻 🗣️
- 18:40–18:50 **Hot off the Press: No Free Lunch Theorem and Black-Box Complexity Analysis for Adversarial Optimisation**
Per Kristian Lehre, Shishen Lin 🧑🏻 🗣️

Thursday, July 17 | 12:00–13:30

HOP 4

Arlequín & Tauromaquia

Chair: Nuno Lourenço, *University of Coimbra, Portugal*

- 12:00–12:10 **Maintaining Diversity Provably Helps in Evolutionary Multimodal Optimization**
Shengjie Ren, Zhijia Qiu, Chao Bian, Miqing Li, Chao Qian 🗣️ 🗣️
- 12:10–12:20 **Hot Off the Press: Multi-Objectivising Acquisition Functions in Bayesian Optimisation**
Chao Jiang, Miqing Li 🧑🏻 🗣️
- 12:20–12:30 **LLaMEA: A Large Language Model Evolutionary Algorithm for Automatically Generating Metaheuristics**
Niki van Stein, Thomas Bäck 🧑🏻 🗣️
- 12:30–12:40 **Gradient-Guided Local Search for Large-Scale Hypervolume Subset Selection**
Yang Nan, Tianye Shu, Hisao Ishibuchi, Ke Shang 🧑🏻 🗣️

- 12:40–12:50 **Landscape Analysis for Surrogate Models in the Evolutionary Black-Box Context (Extended Abstract)**
Zbyněk Pitra, Jan Koza, Jiří Tumpach, Martin Holeňa 🧑🏻 🗣️
- 12:50–13:00 **Evidential Fuzzy Rule-Based Machine Learning to Quantify Classification Uncertainty**
Hiroki Shiraishi, Hisao Ishibuchi, Masaya Nakata 🧑🏻 🗣️
- 13:00–13:10 **Evolutionary Co-Optimization of Rule Shape and Fuzziness in Rule-Based Machine Learning**
Hiroki Shiraishi, Yohei Hayamizu, Tomonori Hashiyama, Keiki Takadama, Hisao Ishibuchi, Masaya Nakata 🧑🏻 🗣️
- 13:10–13:20 **Interpreting Tangled Program Graphs Under Partially Observable Dota 2 Invoker Tasks**
Robert Smith, Malcolm Heywood 🧑🏻 🗣️

Friday, July 18 | 10:00–11:30

HOP 5

Arlequín & Tauromaquia

Chair: Anna Kononova, *Leiden University, Netherlands*

- 10:00–10:10 **Hot off the Press: Bayesian Inverse Transfer in Evolutionary Multiobjective Optimization**
Jiao Liu, Abhishek Gupta, Yew-Soon Ong 🗣️ 🗣️
- 10:10–10:20 **Towards Running Time Analysis of Interactive Multi-objective Evolutionary Algorithms**
Tianhao Lu, Chao Bian, Chao Qian 🗣️ 🗣️
- 10:20–10:30 **Hot off the Press: First Steps Towards a Runtime Analysis When Starting With a Good Solution**
Denis Antipov, Maxim Buzdalov, Benjamin Doerr 🗣️ 🗣️
- 10:30–10:40 **A Many-Objective Problem Where Crossover is Provably Indispensable**
Andre Opris 🧑🏻 🗣️
- 10:40–10:50 **Finding the Set of Nearly Optimal Solutions of a Multi-objective Optimization Problem**
Oliver Schütze, Angel E. Rodriguez-Fernandez, Carlos Segura, Carlos Ignacio Hernández Castellanos 🧑🏻 🗣️
- 10:50–11:00 **GSGP-Hardware: FPGA implementation of GSGP**
Yazmin Maldonado, Ruben Salas, Joel A. Quevedo, Rogelio Valdez, Leonardo Trujillo 🧑🏻 🗣️
- 11:00–11:10 **On the Generalisation Performance of Geometric Semantic Genetic Programming for Boolean Functions: Learning Block Mutations**
Dogan Corus, Pietro S. Oliveto 🧑🏻 🗣️
- 11:10–11:20 **Hot off the Press: Quality-Diversity Algorithms Can Provably Be Helpful for Optimization**
Chao Qian, Ke Xue, Ren-Jian Wang 🧑🏻 🗣️

Other Events

Humies

Thursday, July 17 | 17:30–19:00 | Arlequín & Tauromaquia

- 17:30–17:40 **A Computational Model for Multiobjective Optimization of Multipolar Stimulation in Cochlear Implants: An Enhanced Focusing Approach**
Marcos Hernández-Gil, Ángel Ramos-de-Miguel, David Greiner, Domingo Benítez, Ángel Ramos-Macías, José María Escobar 🧑🏻 🎥
- 17:40–17:50 **LLaMEA: A Large Language Model Evolutionary Algorithm for Automatically Generating Metaheuristics**
Optimizing Photonic Structures with Large Language Model Driven Algorithm Discovery
Niki van Stein, Thomas Bäck, Haoran Yin, Anna Kononova 🧑🏻 🎥
- 17:50–18:00 **Designing Hardware-Friendly Hash Functions for Network Security Using Cartesian Genetic Programming**
Mujtaba Hassan, Jo Vliegen, Stjepan Picek, Nele Mentens 🧑🏻 🎥
- 18:00–18:10 **Unlocking the Potential of Global Human Expertise**
Elliot Meyerson, Olivier Francon, Darren Sargent, Babak Hodjat, Risto Miikkulainen 🧑🏻 🎥
- 18:10–18:20 **AUTOSTUB: Genetic Programming-Based Stub Creation for Symbolic Execution**
Felix Mächtle, Nils Loose, Jan-Niclas Serr, Jonas Sander, Thomas Eisenbarth 🧑🏻 🎥
- 18:20–18:30 **Software Product Line Engineering via Software Transplantation**
Leandro Oliveira de Souza, Eduardo Santana de Almeida, Paulo Anselmo da Mota Silveira Neto, Earl T. Barr, Justyna Petke ▶ 🎥
- 18:30–18:40 **Hybrid Generative AI for De Novo Design of Co-Crystals with Enhanced Tabletability**
Nina Gubina, Andrei Dmitrenko, Gleb Solovov, Lyubov Yamshchikova, Oleg Petrov, Ivan Lebedev, Nikita Serov, Grigorii Kirgizov, Nikolay Nikitin, Vladimir Vinogradov 🧑🏻 🎥
- 18:40–18:50 **Video Game Procedural Content Generation Through Software Transplantation**
Game Software Engineering: A Controlled Experiment Comparing Automated Content Generation Techniques
Mar Zamorano, Daniel Blasco, África Domingo, Carlos Cetina, Federica Sarro 🧑🏻 🎥

Evolutionary Computation in Practice (ECiP)

Wednesday, July 16 | 12:00–13:30 | Malagueta

- 12:00–12:20 **Quantum (computing) needs you! Quantum (computing) wants you!**
Xavier Bonet-Monroig 🧑🏻 🎥
- 12:20–12:40 **Robust Contextual Preferential Bayesian Optimization for Real-World Applications with Biased Data and Minimal Expert Involvement**
Farha A. Khan 🧑🏻 🎥
- 12:40–13:00 **Application of Quantum Annealing to Optimize Parts Storage Arrangement in a Logistics Center**
Hirotaka Kaji 🧑🏻 🎥
- 13:00–13:20 **On the antagonism between foundations and applications in graph-based genetic programming**
Roman Kalkreuth 🧑🏻 🎥

Women+@GECCO

Monday, July 14 | 19:10–21:10 | Arlequín & Tauromaquia

Job Market

Thursday, July 17 | 15:30–17:00 | Arlequín & Tauromaquia

SIGEVO Summer School

	Friday, July 11	Saturday, July 12	Sunday, July 13	Monday, July 14	Tuesday, July 15
09:00					
09:30	Registration, welcome <i>Miguel Nicolau & Vanessa Volz</i>	Tips for a good presentation <i>Miguel Nicolau</i>	Breaking into the community <i>Elena Raponi</i>		
10:00	Coffee break	Coffee break	Coffee break		
10:30					
11:00	PhD in 3 minutes <i>All students</i>	Visualise your data <i>Diederick Vermetten</i>	Paper Reviewing Workshop <i>Vanessa Volz (and panel)</i>		
11:30					
12:00	Paper discussion <i>Miguel Nicolau</i>	CI/CD <i>Vanessa Volz</i>			
12:30					
13:00	Lunch break	Lunch break	Lunch break		
13:30					
14:00	LLMs workshop <i>James McDermott</i>	LLMs workshop <i>James McDermott</i>	Automatic Algorithm Configuration <i>Thomas Stützle</i>		
14:30					
15:00			How to (maybe) publish in top journals <i>Juergen Branke</i>		
15:30	Coffee break	Coffee break	Coffee break		
16:00					
16:30	Benchmarking workshop <i>Diederick Vermetten</i>	From problems to solutions <i>Vanessa Volz</i>	Reproducibility in research <i>Manuel Lopez-Ibanez</i>		
17:00					
17:30			Getting ready for GECCO <i>Miguel Nicolau & Vanessa Volz</i>		
18:00					
18:30					
19:00					

