

LION 2025 Conference Program

General info

Rooms (second floor of the university):

- registration: corridor in the second floor, in front of room S5
- talks: room S5

Lunches:

- corridor in the first floor

Coffee Breaks:

- corridor in the second floor

Social Program

- concert by Cello Republic, <https://www.cellorepublic.cz/>
- location: Refectory (first floor)

Conference dinner:

- Altány Kampa, <https://www.altanykampa.cz/>
- 10 minutes walk from the conference, leaving 18:45 from the university
- address: Nosticova 2a, map: <https://maps.app.goo.gl/ukm5ojHrpGSn9DMy7>

Sunday, June 15

17:00-19:30	Registration & Informal Welcome Meeting • Light Refreshment • Location: corridor in the second floor, in front of room S5
-------------	--

Monday, June 16

08:30-09:00	Registration
09:00-09:20	Opening Session
09:20-10:20	3 contributed talks [chairperson: Bissan Ghaddar] • Tasnim Ahmed, Salimur Choudhury: CHORUS: Zero-shot Hierarchical Retrieval and Orchestration for Generating Linear Programming Code • Yuliang Song, Eldan Cohen: Do LLMs Understand Constraint Programming? Zero-Shot Constraint Programming Model Generation Using LLMs • Nadim Adham, Henning Duwe, Holger Hoos: Codetector: A Framework for Zero-shot Detection of AI-Generated Code
10:20-10:50	Coffee Break
10:50-12:30	Carola Doerr (invited speaker): Automated selection of black-box optimization algorithms [chairperson: Roberto Battiti]
12:30-14:00	Lunch
14:00-16:00	6 contributed talks [chairperson: Maximilian Schiffer] • Ya Song, Laurens Bliek, Yingqian Zhang: Geometrically Invariant and Equivariant Graph Neural Networks for TSP Algorithm Selection and Hardness Prediction • Laura Wolf, Sabrina Klos, Stefan Nickel: Vector Bin Packing with Bin Clusters, Variable Bin Sizes and Costs - A Model and Heuristics for Cloud Capacity Planning • Henrik Abgaryan, Tristan Cazenave, Ararat Harutyunyan: ScheduExpert: Graph Attention Meets Mixture-of-Experts for JSSP • Helmi Hankimaa, Olli Herrala, Fabricio Oliveira, Jaan Tollander de Balsch: Solving influence diagrams: efficient mixed-integer programming formulation and heuristic • Richard Hoshino, Zilei Liu: The Post-Enrollment Course Timetabling Problem with Flexible Teacher Assignments • Nathan Brixius: Optimal Matched Block Design
16:00-16:30	Coffee Break
16:30-17:50	special session S3 : Sustainability in surrogate models, Bayesian optimization, and parameter tuning [chairperson: Laurens Bliek] • Sigrid Passano Hellan, Christopher G. Lucas, Nigel H. Goddard: Bayesian Optimisation Against Climate Change: Applications and Benchmarks • Antonio Candelieri, Elena Signori: e2HPO: energy efficient Hyperparameter Optimization via energy-aware multiple information source Bayesian optimization • Dimitri Weiß, Kevin Tierney, Andrea Micheli: Algorithm Configuration in the Unified Planning Framework • Sophie Hildebrandt, Sina Nunes, Meik Franke, Guido Sand: Studies on a Bayesian Optimization Based Approach to Tune Hyperparameters of Matheuristics
19:00-22:00	Conference Dinner

Tuesday, June 17

08:40-10:20	5 contributed talks <i>[chairperson: Jan Kronqvist]</i> • Cebrina Lindstroem, Stefan Ropke, Reza Pourmoayed: Taxi re-positioning considering driver compliance • Sasan Amini, Antonio Candelieri, Inneke Van Nieuwenhuyse: Decision Maker Preferences in Surrogate-based Multi-Objective Optimization: A Survey • Roberto Battiti, Mauro Brunato: Pushing the Limits of the Reactive Affine Shaker Algorithm to Higher Dimensions • Allahkaram Shafiei, Jakub Marecek: Time-Varying Multi-Objective Optimization: Tradeoff Regret Bounds • Linnéa Gyllberg, Shudian Zhao, Jan Kronqvist: Convex quadratic programming-based predictors: An algorithmic framework and a study of possibilities and computational challenges
10:20-10:50	Coffee Break
10:50-12:30	Maximilian Schiffer (invited speaker): Optimization-augmented machine learning pipelines <i>[chairperson: Yingqian Zhang]</i>
12:30-14:00	Lunch
14:00-15:00	special session S4 : Learning and Intelligent Optimization for Physical Systems <i>[chairperson: Konstantinos Asimakopoulos]</i> • Laurie Guenin, Dominique Barth, Christian Cadéré: Reinforcement Learning for Dynamic Pricing with resource constraints in a competitive context • Janik Bischoff, Alexandru Rinciog, Anne Meyer: Reinforcement Learning for AMR Charging Decisions: The Impact of Reward and Action Space Design • Zihao Guo, Andrea Araldo, Mounîm El-Yacoubi: Data Sampling-driven Adaptive Modification of Bus Routes Under Time-Varying Road Conditions
15:00-16:00	One-minute poster pitches
16:00-16:30	Coffee Break
16:30-18:00	Poster Session (see the list of abstracts below) + 3 subsequent guided tours in the historical building

Wednesday, June 18

08:40-10:20	5 contributed talks [chairperson: Carola Doerr] • Shikhar Saxena, Tejas Bodas, Arti Yardi: CGD: Modifying the Loss Landscape by Gradient Regularization • Jorin Dornemann, Salwa Shagel, Martin Kliesch, Anusch Taraz: A Hybrid Quantum-Inspired and Deep Learning Approach for the Capacitated Vehicle Routing Problem with Time Windows • Zeno Woywood, Jasper I. Wiltfang, Julius Luy, Tobias Enders, Maximilian Schiffer: Multi-Agent Soft Actor-Critic with Coordinated Loss for Autonomous Mobility-on-Demand Fleet Control • Aaron Berger, Nils Eberhardt, Annelot Willemijn Bosman, Henning Duwe, Jan N. van Rijn, Holger Hoos: Empirical Analysis of Upper Bounds of Robustness Distributions using Adversarial Attacks • David Hartman, Jaroslav Hlinka, Anna Pidnebesna, František Szczepanik: Local iterative algorithms for approximate symmetry guided by network centralities
10:20-10:50	Coffee Break
10:50-12:30	Bissan Ghaddar (invited speaker): Learning for nonlinear optimization problems [chairperson: Hossein Moosaei]
12:30-14:00	Lunch
14:00-16:00	special session S1 : (Deep) Reinforcement Learning in OR Optimization [chairperson: Lin Xie] • Farid Najar, Dominique Barth, Yann Strozecki: Demand Selection for VRP with Emission Quota • Kjell van Straaten, Robbert Reijnen, Zaharah Bukhsh, Yaoxin Wu, Yingqian Zhang: Deep Reinforcement Learning Based Genetic Framework for Flexible Job-Shop Scheduling under Practical Constraints • Paul Mingzheng Tang, Hoong Chuin Lau, Moses Hong De Lee: Autoregressive RL Approach for Mixed-Integer Linear Programs • Wei Liu, Thomas Bäck, Yingjie Fan: Multi-Action Sampling with Deep Reinforcement Learning for Traveling Salesman Problem • Nayeli Gast Zepeda, André Hottung, Kevin Tierney: Learning to solve the Skill Vehicle Routing Problem with Deep Reinforcement Learning • Laurin Luttmann, Lin Xie: Learning to Solve the Min-Max Mixed-Shelves Picker-Routing Problem via Hierarchical and Parallel Decoding
16:00-16:30	Coffee Break
16:30-17:30	special session S2 : Enhancing Exact Combinatorial Optimization Solvers with Machine Learning [chairperson: David Hartman] • Wenbo Liu, Akang Wang, Wenguo Yang, Q. Shi: Mixed-Integer Linear Optimization via Learning-Based Two-Layer Large Neighborhood Search • Vasileios Balafas, Dimos Tsouros, Nikolaos Ploskas, Kostas Stergiou: Addressing Over-fitting in Passive Constraint Acquisition through Active Learning • Mehdi Zouitine, Ahmad Berjaoui, Agnès Lagnoux, Pellegrini, Emmanuel Rachelson: Learning to Repair Infeasible* Problems with Deep Reinforcement Learning on Graphs
18:00-19:00	Social Program (concert by Cello Republic)

Thursday, June 19

08:40-10:20	5 contributed talks [chairperson: <i>Tristan Cazenave</i>] • Artemis Tsochatzidi, Georgios I. Liapis, Francesca Cenci, Magdalini Aroniada, Lazaros G. Papageorgiou: Multi-target tree regression approach for surrogate-based optimisation • Robin Labryga, Tomislav Prusina, Sören Laue: Information Preserving Line Search via Bayesian Optimization • Alessandro Varsi, Efthymou Drousiotis, Paul G. Spirakis, Simon Maskell: A Shared Memory Optimal Parallel Redistribution Algorithm for SMC Samplers with Variable Size Samples • Liora Taieb, Milo Roucairol, Tristan Cazenave, Ararat Harutyunyan: Automated Refutation with Monte Carlo Search of Graph Theory Conjectures on the Maximum Laplacian Eigenvalue • Lotfi Kobrosly, Marc-Emmanuel Coupvent des Graviers, Christophe Guettier, Tristan Cazenave: Adaptive Bias Generalized Rollout Policy Adaptation on the Flexible Job-Shop Scheduling Problem
10:20-10:50	Coffee Break
10:50-12:30	Jakub Mareček (invited speaker): Fairness in repeated uses of AI systems [chairperson: <i>Elif Garajová</i>]
12:30-12:45	Closing Session
12:45-14:00	Lunch

List of abstracts (posters)

1. **Ali Ekici:** Variable-Sized Bin Packing Problem with Item Conflicts
2. **Laurens Bliek:** Mixed-variable multi-objective optimisation with a piece-wise linear surrogate model
3. **Carlos Rey Barra, Jorge Freire-Valdebenito:** Machine Learning and Genetic Algorithms for Predictive Scheduling in the Steel Industry
4. **Nihat Oner, Çağıl Koçyiğit:** Data-Driven Robust Optimization Approach for Chemotherapy Outpatient Scheduling with a Real-Life Application in Luxembourg
5. **Ángel Beade, José Santos, Manuel Rodríguez:** Feature selection by genetic programming. Application in business failure prediction
6. **Daan Otto, Jannis Kurtz, Ilker Birbil:** Coherent Local Explanations for Mathematical Optimization
7. **Khosroparviz Naderivarandi, Ezgi Karabulut, Burak Gokgur:** Optimizing pricing strategies through learning the market structure
8. **Marc Goerigk, Michael Hartisch, Sebastian Merten, Kartikey Sharma:** Interpretable Surrogates for Optimization
9. **Esther Linner, Anne Zander, Wouter van Heeswijk, Stefan Nickel:** Comparing OR and RL Methods for Home Health Care Routing with Emergency Requests
10. **Juan Pablo Bertucci:** Optimizing Airport Ground Operations: Development and Implementation of Control Strategies in a Digital Twin for Schiphol Airport
11. **Lampros G. Printzios, Konstantinos Chatzilygeroudis:** Hybrid Augmented Lagrangian Method for General Constrained Optimization
12. **Antonio Candelieri, Francesco Archetti, Andrea Ponti:** Wasserstein Barycenter Gaussian Process based Bayesian Optimization
13. **Francesca Guerriero, Pasquale Legato, Rina Mary Mazza:** An Adaptive Optimization Framework for Manual Order Picking
14. **Marvin Caspar, Daniel Schermer, Oliver Wendt:** Solution Methods for the Dynamic and Probabilistic Profitable Tour Problem
15. **Konstantinos Asimakopoulos, Konstantinos Chatzilygeroudis:** Integrating Trajectory Optimization in Quality Diversity for Kinodynamic Motion Planning
16. **Heiko Hoppe, Léo Baty, Louis Bouvier, Axel Parmentier, Maximilian Schiffer:** Structured Reinforcement Learning for ML-CO-Pipelines
17. **Carlos Contreras-Bolton:** Metaheuristics designed automatically for the pollution and energy minimization traveling salesman problems
18. **Luz Itzel Valdeolivar Hernández, Carlos Ignacio Hernández Castellanos, Edgar Garduño:** Hyperparameter Tuning for Superiorized Reconstruction Algorithm via Clustering and Bayesian Optimization
19. **Chuan He:** Stochastic first-order methods can leverage arbitrarily higher-order smoothness for acceleration
20. **Aigerim Saken, Andreas Alpers:** Reinforcement Learning Framework for Grain Image Segmentation
21. **Babak Abbasi, Sohaib Dastgoshade, Zahra Hosseinifard, Ahmad Abareshi:** Sustained Blood Supply Chain through Strategic Donors Channelling
22. **Francesco Bianchi, Giovanni Felici, Giuseppe Stecca:** Regression based estimation of traffic flows using multi-source data
23. **Abdo Abouelrous, Laurens Bliek, Adriana F. Gabor, Yaoxin Wu, Yingqian Zhang:** Reinforcement Learning for Solving the Pricing Problem in Column Generation: Applications to Vehicle Routing