LION 2025 Conference Draft Schedule

Sunday, June 15

- **17:00–19:30** | Registration & Informal Welcome Meeting, Light Refreshment

Monday, June 16

- **08:30–09:00** | Registration

- **09:00–9:20** | Opening Session

- **09:20–10:20** | 3 talks

  - 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** | Invited talk 1

  Carola Doerr: Automated selection of black-box optimization algorithms

- **12:30–14:00** | Lunch

- **14:00–16:00** | 6 talks

  - 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: SchedulExpert: 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** | 4 talks

  special session S3: Sustainability in surrogate models, Bayesian optimization, and parameter tuning
  - Sigrid Passano Hellan, Christopher G. Lucas, Nigel H. Goddard: Bayesian Optimisation Against Climate Change: Applications and Benchmarks
  - Antonio Candelieri, Elena Signori: e^{2}HPO: 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 talks

  - 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** | Invited talk 2

  Maximilian Schiffer: Optimization-augmented machine learning pipelines

- **12:30–14:00** | Lunch

- **14:00–15:00** | 3 talks

  special session S4: Learning and Intelligent Optimization for Physical Systems
  - 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 Brea**k**

- **16:30–18:00** | poster session + 3 subsequent guided tours in the historical building
  (see the list of abstracts below)

Wednesday, June 18

- **08:40–10:20** | 5 talks

  - Shikhar Saxena, Tejas Bodas, Arti Yardi: CGD: Modifying the Loss Landscape by Gradient Regularization
  - Jorin Dornemann, Salwa Shaglel, 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** | Invited talk 3

  Bissan Ghaddar: Learning for nonlinear optimization problems

- **12:30–14:00** | Lunch

- **14:00–16:00** | 6 talks

  special session S1: (Deep) Reinforcement Learning in OR Optimization
  - 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 Brea**k**

- **16:30–17:30** | 3 talks

  special session S2: Enhancing Exact Combinatorial Optimization Solvers with Machine Learning
  - Wenbo Liu, Akang Wang, Wenguo Yang, Qingjiang 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

Thursday, June 19

- **08:40–10:20** | 5 talks

  - 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, Efthyvoulos 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** | Invited talk 4

  Jakub Mareček: Fairness in repeated uses of AI systems

- **12:30–12:45** | Closing Session

- **12:45–14:00** | Lunch

List of abstracts

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: Reinforcment 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