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ACM Journals

ACM Transactions on Evolutionary Learning and Optimization

LION Conference Fast Track

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The area of learning and intelligent optimization forms the interface between the fields of operations research (OR) and machine learning (ML). The area includes methods and applications that (1) use ML methods to enhance OR techniques or (2) use OR methods to perform ML or augment ML approaches. The former harness learning mechanisms to find high-quality solutions to difficult optimization problems, for example to speed up exact or heuristic solution approaches, find solutions that are robust to uncertain inputs, and integrate data into decision-making processes. The latter use OR methods to make learned predictions on data that, e.g., have guarantees or special properties.

This special issue is a *fast track* of the Learning and Intelligent Optimization (LION) conference. Papers will be reviewed on an accelerated timeline to provide feedback in advance of the upcoming LION conference in 2027. Submitted papers will undergo a single round of review prior to a decision by the guest editors whether the paper should be presented at LION. Papers that are not selected may be transferred out of this fast track. Papers invited for presentation remain subject to the following rounds of review, and we note that final acceptance is conditional on a successful revision. We encourage authors to only select this fast track if they intend to attend and present at LION.

Accepted papers will be made available online soon after their acceptance. Furthermore, they will enter the regular publication queue and appear in a regular TELO issue, meaning the fast track stays fast: there is no waiting for all fast track papers to be bundled into the same issue.

Topics

This special issue covers, but is not limited to, the following topics, which are given in no particular order:

- Reactive & intelligent (meta)heuristics
- Decision-focused learning
- Stochastic and robust optimization methods
- Algorithm configuration, selection and scheduling
- Hyperheuristics
- Responsible/trustworthy AI and its application to learning and intelligent optimization themes
- Data-driven optimization
- Learning and intelligent optimization for physical systems
- Combinatorial and integer optimization layers in deep learning
- Bayesian optimization and machine learning

- Machine learning-enhanced search methods
- Deep reinforcement learning for combinatorial optimization
- AutoML
- Applications of the given topics to industry problems

Important Dates

- Open for Submissions: November 1, 2026
- Submission deadline: February 1, 2027
- First-round review decisions: March 31, 2027
- Presentations at LION: June 14 – 17, 2027

Submission Information

All submissions must be made through the ACM TELO submission system at https://mc.manuscriptcentral.com/telo. When submitting, please select the manuscript type corresponding to this fast track (in the list of special issues) so that the paper is routed to the guest editors. Manuscripts must be prepared using the ACM article template (acmart, acmsmall format) and must follow the TELO author guidelines available at https://dl.acm.org/journal/telo/author-guidelines.

Submissions must describe original work that has not been published previously and is not currently under review elsewhere. Substantially extended versions of previously published conference papers are welcome, provided that the extension is significant, that it is clearly described in the submission, and that the earlier work is properly cited. All manuscripts will undergo rigorous peer review according to the standards of ACM TELO.

For questions and further information, please contact **Kevin Tierney (kevin.tierney@univie.ac.at).**