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Dear FOGA Attendees,

We are pleased to welcome you to the proceedings of the 18th ACM/SIGEVO Conference on Foundations of Genetic Algorithms (FOGA XVIII). The first FOGA was in 1990, and since then, FOGA has established itself as the premier event on the foundations of evolutionary computation. The goal of FOGA is to advance the foundations and understanding of randomised search heuristics and to contribute to making these algorithms more useful in practice. The workshop invites submissions on all kinds of randomised search heuristics, including but not limited to evolutionary algorithms, ant colony optimisation, artificial immune systems, particle swarm optimisation, simulated annealing, Bayesian optimisation, and other Monte Carlo methods for search and optimisation. Contributions bridging theory and practice are particularly encouraged. In addition to rigorous mathematical investigations, experimental studies contributing towards the foundations of randomised search heuristics are also welcome at FOGA.

FOGA 2025 was hosted by the Leiden Institute of Computer Science (LIACS) of the Leiden University, in Leiden, The Netherlands, from August 27th to 29th. The conference received 56 submissions, from which 26 were selected to be presented at the conference. All submissions were thoroughly peer-reviewed using a double-blind review process. Conditionally accepted manuscripts were reviewed in a second phase before the final decision. Authors of accepted papers were asked to prepare a poster for each paper to encourage a live and friendly discussion during the conference. The accepted papers published in the proceedings cover a wide variety of topics, including runtime analysis, convergence properties, algorithm selection, benchmark functions and new algorithmic proposals.

We thank our keynote speakers, Joshua D. Knowles and Tobias Glasmachers, for accepting the invitation to participate in FOGA 2025. Joshua talked about the most important problems in evolutionary computation and evolutionary multi-objective optimization. Tobias presented the recent efforts towards the use of drift analysis in the context of evolution strategies.

We thank ACM SIGEVO, ACM, and the Leiden Institute of Computer Science for their support in organising FOGA 2025. We also thank all the authors that submitted to FOGA and the program committee members for their hard work during the reviewing process to make this a high-quality conference.

Anna V. Kononova
Leiden University

Thomas Bäck
Leiden University

Jonathan Fieldsend
University of Exeter

Francisco Chicano
University of Malaga

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