

# Call for Papers

## GECCO'22 workshop: Analysing algorithmic behaviour of optimisation heuristics (AABOH)

Optimisation and Machine Learning tools are among the most used tools in the modern world with its omnipresent computing devices. Yet, while both these tools rely on search processes (search for a solution or a model able to produce solutions), their dynamics has not been fully understood. Such scarcity of knowledge on the inner workings of heuristic methods is largely attributed to the complexity of the underlying processes that cannot be subjected to a complete theoretical analysis. However, this is also partially due to a superficial experimental set-up and, therefore, a superficial interpretation of numerical results. Indeed, researchers and practitioners typically only look at the final result produced by these methods. Meanwhile, the vast amount of information collected over the run(s) is wasted. In the light of such considerations, it is now becoming more evident that such information can be useful and that some design principles should be defined that allow for online or offline analysis of the processes taking place in the population and their dynamics.

Hence, with this workshop, we call for the **full-length papers** (8 pages excluding references) on *both theoretical and empirical achievements* identifying the desired features of optimisation and machine learning algorithms, quantifying the importance of such features, spotting the presence of intrinsic structural biases and other undesired algorithmic flaws, studying the transitions in algorithmic behaviour in terms of convergence, any-time behaviour, traditional and alternative performance measures, robustness, exploration vs exploitation balance, diversity, algorithmic complexity, etc., with the goal of gathering the most recent advances to fill the aforementioned knowledge gap and disseminate the current state-of-the-art within the research community.

We encourage submissions exploiting carefully designed experiments or data-heavy approaches that can come to help in analysing primary algorithmic behaviours and modelling internal dynamics causing them.

The workshop will consist of the paper presentations, invited talks and a panel discussion.

Submission opening: February 11, 2022

**Submission deadline: April 11, 2022**

Notification of acceptance: April 25, 2022

Camera-Ready Material: May 2, 2022

Author registration deadline: May 2, 2022

**Workshop Organisers:** Anna V. Kononova (Leiden University), Hao Wang (Leiden University), Michael Emmerich (Leiden University), Peter Bosman (CWI), Daniela Zaharie (the West University of Timișoara), Fabio Caraffini (De Montfort University), Johann Dreö (Institut Pasteur).

**Website** <https://www.cwi.nl/~bosman/aaboh2022>