

EVOLUTIONARY MANY-OBJECTIVE OPTIMIZATION

Rui Wang, Shengxiang Yang, Sanaz Mostaghim, Tao Zhang

Multi-objective optimization problems arise regularly in real-world where multiple objectives are required to be optimized at the same time. Evolutionary multi-objective algorithms are well suited to solve multi-objective optimization problems since their population based nature can generate a set of trade-off solutions in a single run. So far, MOEAs have been demonstrated as effective in addressing MOPs with two and three objectives. However, they tend to face difficulties on addressing MOPs with four or more objectives, the so called many-objective problems.

The difficulties include, for example, the deterioration of convergence, the large number of solutions required to approximate the entire Pareto front, the solutions visualization, performance metrics. This special session focuses on evolutionary many-objective optimization to tackle problems in many-objective optimization including the above mentioned difficulties.

Full papers are invited on recent advances, new horizons in evolutionary many-objective optimization. Also, we are interested in various studies discussing issues related to many-objective optimization, particularly, the real-world problems. You are invited to submit papers that are unpublished original work for this special session.

Topics

- Algorithm design
- Preference based search
- Dimensionality reduction of the objective space
- Benchmark problems
- Visualization of high dimensional space and decision making
- Search performance metrics
- Hybrid evolutionary many-objective algorithms



- Many-objective real-world optimization problems