

Special Issue

Evolutionary Multi-Objective Optimizations and Their Applications

Message from the Guest Editors

With the development of simulation and modeling techniques, optimization problems in industry, manufacturing, logistics, electricity, and many other fields are revealed to be complex and challenging, and are often characterized by black-box functions, a large number of variables, multiple conflicting objectives, and strict constraints. Such complex optimization problems pose significant challenges to existing optimizers in obtaining a set of well-converged and diversified solutions. In the last decade, evolutionary multi-objective methods have emerged as effective technologies for tackling such complex optimization problems, mainly due to their population-based stochastic search paradigms. Although multi-objective evolutionary algorithms exhibit superiority in optimizing black-box functions and trading off between conflicting objectives, they still suffer from several issues, such as the low search efficiency, the curse of dimensionality, the satisfaction of strict constraints, and so on.

Keywords

- evolutionary computation
- multi-objective optimization
- computational intelligence

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