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Title: A novel multi-objective bacteria foraging optimization algorithm (MOBFOA) for multi-objective scheduling

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### Highlights

- We propose a novel multi-objective bacteria foraging algorithm (MOBFOA), which is an extension of the original BFOA to handle multi-objective problems.
- An adaptive step-sized based chemotaxis process enables the proposed MOBFOA to converge to optimal or near-optimal solution (rather than getting stuck in a local minima).
- The proposed MOBFOA uses a new bacteria fitness assignment (strength of a solution) method and bacteria selection procedure for simultaneous optimization of multiple objectives.
- A comparative study is carried out between our proposed MOBFOA and other stochastic algorithms (OMOPSO and NSGA-II) with respect to convergence towards Pareto-optimal front and the spread of solutions in the search space.
- The proposed MOBFOA is a viable tool to handle multi-objective scheduling problem.

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