Barnacles Mating Optimizer: An Evolutionary Algorithm for Solving Optimization

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Abstract:

This paper presents a novel evolutionary algorithm called Barnacles Mating Optimizer (BMO) to solve optimization problems. The proposed algorithm is inspired from the mating behavior of barnacles in nature. Barnacles are known as hermaphroditic micro-organisms which have both male and female sex reproductions and one of the most special characteristics of barnacles is they have long penises which is the longest in animal kingdom, relatively to their body size. To show the effectiveness of proposed BMO in solving optimization problems, a set of 23 mathematical functions are utilized to test the characteristic of BMO in finding the optimal solutions especially in unimodal, multimodal and composite test functions. Comparisons with other evolutionary algorithms also will be presented in this paper.

Keywords: barnacles mating optimizer, benchmark functions, evolutionary algorithm, optimization