

Implementation evaluation of Cuckoo search for the benchmark Rosenbrock test function

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ABSTRACT

This paper presents the implementation evaluation of the benchmark Rosenbrock test function with particular emphasis on the effect of the search population and iterations count in the Cuckoo Search algorithm's quest for good solutions. After a number of experimental procedures, this study reveals that deploying a population of 10 nests is sufficient to obtain good solutions to the Rosenbrock test function (or any similar problem to this test landscape). In fact, increasing the search population to 50 nests was a demerit to the Cuckoo Search as it resulted in longer processing time and worse outcomes. In terms of the iteration count, it was discovered that the Cuckoo Search can obtain good results in as little as 100 to 10,000 iterations. The outcome of this study is beneficial to the research community as it will help in facilitating the choice of parameters whenever one is confronted with a similar problem.

KEYWORDS

Cuckoo search; Iteration; Population; Rosenbrock function

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