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A comparative evaluation of swarm intelligence techniques for solving combinatorial optimization problems

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Abstract

This article presents a critical evaluation of swarm intelligence techniques for solving combinatorial optimization problems. Since, unarguably, the traveling salesman's problem is the most developed, studied, and popular combinatorial problem, this study uses it as a benchmark. After a number of experimental investigations involving 24 popular but complex benchmark symmetric traveling salesman's problem instances and 15 asymmetric traveling salesman's problem of the 19 instances available in TSPLIB95, the African buffalo optimization proved to be the best algorithm in terms of efficiency and effectiveness in solving the problems under investigation.

Keywords

Swarm intelligence techniques, combinatorial optimization, traveling salesman's problems

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