

A bi-objective Cat Swarm Optimization algorithm for set covering problem

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In this paper, we study a classical problem in combinatorics and computer science, Set Covering Problem. It is one of Karp's 21 NP-complete problems, using a new and original metaheuristic, Cat Swarm Optimization. This algorithm imitates the domestic cat through two states: seeking and tracing mode. The OR-Library of Beasley instances were used for the benchmark with additional fitness function, thus the problem was transformed from Mono-objective to Bi-objective. The Cat Swarm Optimization finds a set solution non-dominated based on Pareto concepts, and an external file for storing them. The results are promising for further continue in future work optimizing this problem. © Springer International Publishing Switzerland 2016.

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