Cat swarm optimization with different binarization methods for solving set covering problems

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In this paper, we present a Binary cat swarm optimization for solving the Set covering problem. The Set covering problem is a well-known NP-hard problem with many practical applications, including those involving scheduling, production planning and location problems. Binary cat swarm optimization is a recent swarm metaheuristic technique based on the behaviour of discrete cats. Domestic cats show the ability to hunt and are curious about moving objects. The cats have two modes of behavior: seeking mode and tracing mode. Moreover, eight different transfer functions and five discretization techniques are considered for solving the binary problem. We illustrate this approach with 65 instances of the problem and select the best transfer function and discretization technique to solve this problem. © Springer International Publishing Switzerland 2016.

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