

A Binary Cat Swarm Optimization Algorithm for the Non-Unicost Set Covering Problem

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The Set Covering Problem consists in finding a subset of columns in a zero-one matrix such that they cover all the rows of the matrix at a minimum cost. To solve the Set Covering Problem we use a metaheuristic called Binary Cat Swarm Optimization. This metaheuristic is a recent swarm metaheuristic technique based on the cat behavior. Domestic cats show the ability to hunt and are curious about moving objects. Based on this, the cats have two modes of behavior: seeking mode and tracing mode. We are the first ones to use this metaheuristic to solve this problem; our algorithm solves a set of 65 Set Covering Problem instances from OR-Library. © 2015 Broderick Crawford et al.