Abstract

The knapsack problem (01KP) in networks is investigated in this paper. A novel algorithm is proposed in order to find the best solution that maximizes the total carried value without exceeding a known capacity using Grey Wolf Optimization (GWO) and K-means clustering algorithms. GWO is a recently established meta-heuristics for optimization, inspired by grey wolf's species. K-means clustering algorithm is used to group each 5-12 agents with each other at one cluster according to GWO constraint. The evaluated performance is satisfying. The simulation results show great compatibility between experimental and theoretical results.

References

2. PISINGER, David. The quadratic knapsack problem—a survey. Discrete applied
Grey Wolf Optimization Applied to the 0/1 Knapsack Problem


**Index Terms**

Computer Science  
Algorithms

**Keywords**

Grey Wolf Optimization (GWO), Knapsack problem, Meta-heuristic, Optimization.