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

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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.