Abstract

This paper conducts experimental tests to study the stagnation behavior the Interacted Multiple Ant Colonies Optimization (IMACO) framework. The idea of different ant colonies use different types of problem dependent heuristics has been proposed as well. The performance of IMACO was demonstrated by comparing it with the Ant Colony System (ACS) the best performing ant algorithm. The computational results show the dominance of IMACO and that IMACO suffers less from stagnation than ACS.

References

An Experimental Study of the Search Stagnation in Ants Algorithms

international conference on Artificial Intelligence and Applications (AIA2010), Austria, pp.12-15.

the interacted multiple ant colonies framework. Proc. of 1st international conference on
Intelligent Systems, Modelling, and Simulation (ISMS2010), Liverpool, UK, pp. 92-95.

Number of Late Jobs in Workflow Systems. Proc. of ACM symposium on Applied computing,
Nicosia, Cyprus, pp. 1396-1403.

Weighted Tardiness Problem. Proc. of Parallel Problem Solving from Nature Conference, Paris,
France, pp. 611-620.


159-174.

the Single-Machine Total Weighted Tardiness Scheduling Problem. INFORMS Journal on

Single Machine Total Weighted Tardiness Scheduling Problem. INFORMS Journal on

Algorithms, Applications, and Advances. In: Handbook of Meta-heuristics (Eds. F. Glover and


13. Pang, S. C., T. M. Ma and T. Liu, 2015. An improved ant colony optimization with
optimal search library for solving the traveling salesman problem. Journal of Computational and


Index Terms

Computer Science Algorithms
Keywords

Ant colony optimization, combinatorial optimization problems, search stagnation.