A Survey on Ant Inspired Metaheuristic Algorithm-Parallel Approaches

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Abstract

Although ant is not one of those smart creatures, when swarm, however co-operate with each other while foraging (in search of food) they have this great ability to unearth an optimal solution to their problem thus coming up with the shortest path from their nest to the food source in case of foraging. Ants grant excellent efficiency while solving combinatorial problems and also have the potential of combining with other algorithms with ease. This survey includes: 1) Generalized ant inspired algorithm and different applications of ant Colony Optimization (ACO). 2) Proposed parallel approaches to those applications. As ACO is intrinsically parallel so in this survey GPU implementation using OpenCL is proposed to parallel approaches and only those application areas are explored whose parallel approaches are discussed.

References

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Index Terms

Computer Science
Algorithms

Keywords

Ant Colony Optimization(ACO), Swarm intelligence, meta-heuristics, OpenCL.