Abstract

For a decade swarm Intelligence, an artificial intelligence discipline, is concerned with the design of intelligent multi-agent systems by taking inspiration from the collective behaviors of social insects and other animal societies. They are characterized by a decentralized way of working that mimics the behavior of the swarm. Swarm Intelligence is a successful paradigm for the algorithm with complex problems. This paper focuses on the comparative analysis of most successful methods of optimization techniques inspired by Swarm Intelligence (SI) : Ant Colony Optimization (ACO) and Particle Swarm Optimization (PSO). An elaborate comparative analysis is carried out to endow these algorithms with fitness sharing, aiming to investigate whether this improves performance which can be implemented in the evolutionary algorithms.

Reference
Comparative Analysis of Ant Colony and Particle Swarm Optimization Techniques

- Christian Blum and Xiaodong Li, Swarm Intelligence in Optimization.
- De Falco, A. Della Cioppa, and E. Tarntino, “Evalution of Particle Swarm Optimization Effectiveness in Classification.

**Index Terms**

Computer Science | Artificial Intelligence

**Key words**

Particle swarm optimization

Swarm intelligence

Ant Colony Optimization