Abstract

Grouping different objects possessing inherent similarities in clusters has been addressed as the clustering problem among researchers. The development of new metaheuristics has given another direction to data clustering research. Swarm intelligence technique using ant colony optimization provides clustering solutions based on brood sorting. After basic ant model of clustering, number of improvements has been proposed. But the ant clustering still suffers with low convergence. This paper presents a novel model of intelligent movement of ants including the negative pheromone and direction selection. Negative pheromone plays a role of barrier in the direction of empty area and direction selection avoids the calculations not contributing to the clustering process. Simulations have shown good results.

Index Terms

Computer Science  
Artificial Intelligence

Keywords
clustering  ant colony optimization  pheromone