Abstract

Genetic algorithm (GA) has several genetic operators that can be changed to improve the performance of particular implementations. These operators include selection, crossover and mutation. Selection is one of the important operations in the GA process. There are several ways for selection like Roulette-Wheel, Rank, and Tournament etc. This paper presents a new selection operator based on alpha cut as in Fuzzy Logic. This is compared with other selection in solving travelling salesman problem (TSP) using different parent selection strategy. Several TSP instances were tested and the results show that proposed selection outperformed proportional roulette wheel, achieving best solution quality with low computing times.
Alpha Cut based Novel Selection for Genetic Algorithm


Index Terms

Computer Science

Algorithms

Keywords

Alpha cut  Fuzzy Logic  Genetic algorithm  Optimization  Selection  Travelling Salesman problem