

Abstract

Travelling Salesman Problem is a combinatorial problem that involves several points, called by nodes, that are connected each other and have different distances between one node to another. Travelling Salesman Problem usually used as a benchmark for the performance of an algorithm. The goal of Travelling Salesman Problem optimization is to find the shortest distance to visit all of the nodes without visiting one nodes more than once.

Geometric Differential Evolution is an algorithm that works on the movements of some vector that represent the solution candidates. Geometric Differential Evolution uses a slightly different approach to a conventional Differential Evolution. In Differential Evolution, the vectors moved by differential mutation and discrete recombination, whereas, in Geometric Differential Evolution, the vectors movement is controlled by mutation and recombination that uses convex combination and extension ray.

In this research, the performance of Geometric Differential Evolution in solving Travelling Salesman Problem will be analysed by the minimum route that produced by system. To analyse the maximum performance of Geometric Differential Evolution, the best parameter settings will be analysed too.

Key words : geometric differential evolution, convex combination, extension ray, travelling salesman problem