

Abstract

Differential Evolution is an optimization algorithm in Evolutionary Algorithm. DE finds the solution in with semi-directed mutation so it could find the optimal solution quickly in many cases. Resource allocation is a problem to allocating available resources to achieve desired goals. Resource allocation has different objectives in each case, but to find the solution using DE, we must first able to represent the problem into real format.

In this final project, has been developed a sistem using DE that able to find a solution in allocating truck resources in milk depots that have several points to be visited and each points have different time cost, loading time, and milk volume that have to be carried to depot and find the best route of each truck. The goal is to minimize the truck being used without exceed the truck's maximum operational time which is 5 hours.

The research showed that DE could be used to find optimum solution of this resource allocation problem, and could relatively find acceptable solution in less than 10 generations with population size 200 individuals, lamda 0.5, F 0.02, and P_c 0.9.

Key words: differential evolution, resource allocation, evolutionary computation, CTSP.