

Genetic algorithm for biobjective urban transit routing problem

ABSTRACT

This paper considers solving a biobjective urban transit routing problem with a genetic algorithm approach. The objectives are to minimize the passengers' and operators' costs where the quality of the route sets is evaluated by a set of parameters. The proposed algorithm employs an adding-node procedure which helps in converting an infeasible solution to a feasible solution. A simple yet effective route crossover operator is proposed by utilizing a set of feasibility criteria to reduce the possibility of producing an infeasible network. The computational results from Mandl's benchmark problems are compared with other published results in the literature and the computational experiments show that the proposed algorithm performs better than the previous best published results in most cases.

Keyword: Genetic algorithm; Urban transit network design problem; Routing; Urban transit.