

Mandatory assignment 1: Traveling Salesman Problem

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1 Introduction

Brief explanation of the assignment, how to start the programs

2 Exhaustive search

2.1 Tour of six cities

Find shortest tour, measure time taken, see how time increases as more cities are added

2.2 Tour of ten cities

Find shortest tour, measure time taken, calculate time for 24 cities

3 Hill Climbing

Compare with exhaustive for 10 cities, run algorithm 20 times, report best worst mean and standard deviation for 10 runs and 24 runs

4 Genetic algorithm

Report parameters used, report best worst mean and deviation of 20 runs with three different values for population size, plot of average fitness of best individual of each run

5 Hybrid algorithm

Use hill climber on each individual as part of the evaluation, report min max mean deviation and average fitness with both Lamarckian and Baldwinian learning models, Compare result with GA