

ECE 4850/7650 Applied Computational Intelligence

Project 5

Simulated Annealing Investigation

P5 Due Date: December 3.

1. Starting from the given MatLab source code (which is attached to this file), modify the program in one or more of the following ways to achieve the best lowest distance in the class.
 - a. Create a different temperature schedule. This can include any change of the schedule. For example, you can change the initial and/or final temperature setting, the fraction by which the temperature is changed at each iteration of the Cooling Loop, or choose a different way in which the temperature is decreased.
 - b. Change the duration at which the algorithm spends in the Thermal Equilibrium Loop and/or the Cooling Loop. For example, you can count the duration using some other method than the standard number of loops. You can decide to terminate the Thermal Equilibrium Loop in a different way. You can also use a different way to detect a termination of the outer loop.
 - c. Change the way in which the initial route is formed.
 - d. Change the way in which the current route is perturbed at each iteration of the Thermal Equilibrium Loop.
 - e. Change the decision logic that determines if a perturbed route is kept or not.
 - f. You can also employ the “restart” hill climbing idea.

CONSTRAINTS:

(1) You must use the file called: EUC_2D_110.txt.

(2) Your algorithm should not run longer than about 5 minutes on the lab computers.

GRADING: This is a competition. The paper with the lowest cost will win 1st Prize, be awarded 100% grade. The other papers will be graded on a decreasing scale according to their cost of their solution.

SUBMISSION: Submit the following: submit a brief report that summarizes your changes and the specific values of the parameters used to generate your resulting list of cities. Also, submit the MatLab code, and the generated file BestCR.txt.