

Evolutionary Computing - Fall 2019

Assignment #1: STD String Problem

Shiraz University

Due Date: 30/Oct

The Genetic algorithm is a method for solving any kind of optimization problems. One of the problems which is solved by Genetic algorithm is trying to reach a target of string by initializing random strings as the initial population and using the 3 main operator of Genetic algorithm and defining a good evaluation function (respect to the target) for each member of the population.

According to this, you should define a target of string which is the combination of your first name, last name and your student number (e.g. aliahmadi1234567) and apply GA by defining the initial population which contains any combination of (a to z, 1234567890) and a fitness function which is the total distance of each gene from its corresponding gene in the target string.

Apply GA with the following properties to this problem:

Recombination prob.	90%
Mutation prob.	0.1%

Notes:

- Your implementation should be functional.
- Allowed programming languages: MATLAB, PYTHON, JAVA.
- Feel free to change the model parameters.
- Any sign of cheating would be result in the zero grade for the assignment.
- Your codes should be self-commented.