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Y U N I B E S I T H I   Y A   P R E T O R I A

COS 710: Artificial Intelligence
Assignment 1: Genetic Programming for Prediction
Due Date: 27 March 2023, 23:30

This assignment involves implementing genetic programming to evolve a prediction model for the Seoul bike trip duration prediction problem. Details of the problem are in the paper included in the assignment specification. The dataset for the problem can be accessed from `https://data.mendeley.com/datasets/gtfh9z865f/1`.

Assignments must be submitted via clickUP. The source code, compiled code and report must be submitted.

The report must include:

- Description of the data set, data preprocessing, any feature extraction/selection.

- Description of the representation used and the terminal and function sets.

- Description of initial population generation.

- Description of the fitness function and fitness evaluation.

- Description of the selection method.

- Description of genetic operators

- A description of the experimental setup, i.e. parameter values used, technical specifications of the machine used to develop the program and run simulations.

- The results (averages and best values for all four metrics discussed in the paper over the runs performed) and a discussion of the results. A minimum of 10 runs should be performed.

- Runtimes of the algorithm.

- A comparison with the performance and runtimes of the approaches presented in the paper.

Total: 45