UNIVERSITEIT VAN PRETORIA
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COS 710: Artificial Intelligence
Assignment 2: Genetic Programming for Classification
Due Date: 29 April 2024, 23:30

This assignment involves extending Assignment 1 to incorporate transfer learning. The following datasets can be used for the assignment:

- `https://www.kaggle.com/datasets/mathchi/diabetes-data-set` (dataset from Assignment 1)
- `https://www.kaggle.com/datasets/iammustafatz/diabetes-prediction-dataset?select=diabetes_prediction_dataset.csv`
- `https://data.mendeley.com/datasets/wj9rwkp9c2/1`

Select one or two of the datasets as the source problem domain and the remaining set/s as the target problem domain.

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

The report must include:

- Description of the source and target problems.
- Description of transfer learning employed - what is transferred, when it is transferred, how it is transferred.
- A description of the target GP algorithm.
- A description of the experimental setup for both the source and target GP algorithms (with and without transfer learning), 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 at least accuracy) and a discussion of the results. A minimum of 10 runs should be performed for both the source and target GP algorithms (with and without transfer learning).
- Runtimes of the source and target GP algorithms (with and without transfer learning).
- A comparison in terms of performance, runtimes and computational cost (using formula discussed in lectures) of GP with and without transfer learning.

Total: 30