



UNIVERSITEIT VAN PRETORIA  
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**COS 710: Artificial Intelligence**  
***Assignment 2: Data Classification***  
***Due Date: 28 September 2020***

This assignment involves employing genetic programming to produce a classifier for postoperative patient diagnosis. The classifier must output the postoperative care needed:

- I - The patient must be moved to the Intensive Care Unit
- S - The patient can be discharged
- A - The patient must be moved to a general hospital ward

The classifier can be a decision tree, arithmetic tree, logical tree or production rule system. The problem description and benchmark set to apply the classifier to can be accessed from <https://archive.ics.uci.edu/ml/datasets/Post-Operative+Patient>.

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

- A brief description of the data set used
- A description of the GP algorithm in terms of the following:
  - The representation used to represent a classifier
  - Define the fitness function used
  - The selection method used
  - Describe the genetic operators used
  - Termination criterion used

- Tables presenting the best, average and standard deviation of the accuracy for training and accuracy for testing
- A discussion on the performance of the evolved classifiers, comparing the accuracy to that reported in the literature on previous studies for the dataset.

**Total:** 25