COMP4702/7703 - Machine Learning

Assignment
Semester 1, 2023

This assignment has a single task which should be completed. Intentionally, there is considerable flexibility in how you choose to complete this task.

Submission: Your answer for this assignment should be uploaded as a pdf file via the Turnitin submission link provided.

Task

In the Practical classes for this course, you will be implementing and/or applying a range of different machine learning techniques/models/algorithms. For this assignment, you are required to demonstrate your understanding of and your ability to apply one or more of these machine learning techniques to a dataset provided for use in this assignment. Your task is to create a report that describes your method, results and analysis, including graphs and plots, code and output. Screenshots are also fine.

This assignment gives you the opportunity to go beyond what you do in the prac classes. You are not expected to apply every ML models/techniques that you use during the course. Instead, you can go into more detail with a few models, for example exploring some things that were discussed in lectures but not done in the prac questions. More depth and detailed analysis is encouraged!

Key points:

- This assignment is very open-ended but you are not expected to spend an enormous amount of time working on it. You should allocate sufficient time to the task in line with the amount that the assignment is worth in your ECP.
- You can use any code that you developed during the course (e.g. while completing pracs and homework), as well as built-in Matlab and python functions/libraries. If you use other libraries then you must reference them and they must be publicly available.
- Explain the key steps of your analysis (data preprocessing, training, testing, visualisation, etc.).
- Present any results and output from your work. Add comments and discussion to demonstrate that you understand the results and output.
- Don't spend time introducing general background concepts or describing the theory of models from the course. However, if you can relate your analysis and results back to the concepts and theory from the course then that will be a positive for your marks.
- Make sure your work is understandable and readable. Your report should be well-presented, but (for example) it is much more important to make sure the axes in your plots are labelled v's spending time playing with font sizes or a nice title page!
- Please specify any assumptions you have made in doing your analysis and which parts of your report those assumptions relate to.

The dataset for this assignment is available on the course blackboard site.