Coursework 3 – Application of Deep Learning Techniques

Brief

This is a group coursework: please work in teams of four people.
Due date: Tuesday 2nd May, 16:00
Handin: https://handin.ecs.soton.ac.uk/handin/2223/COMP6252/3
Required files: `report.pdf and code.zip`
Credit: 30% of overall module mark

Overview

Deep learning has been used in lots of fields and applications, with great performance. The goal of this assignment is to apply deep learning techniques on a practical problem.

Details

Data

Choose the problem and data to work on for example from:

- **Kaggle**: //www.kaggle.com/
- **Grand Challenges**: https://grand-challenge.org/challenges/
- **UK Biobank**: https://www.ukbiobank.ac.uk/

Deep learning technologies

You should try to develop/implement the best deep learning methods you can.

Code

You are free to choose the programming language you like.

The report

The report must be no longer than 5 pages (4 pages main content + 1 page reference) of A4 with the given Latex format, and must be submitted electronically as a PDF. The report must include:

- Your name and ECS user ID.
- A description of the data and problem, with data visualisation and reflection.
- A description of the implementation of the deep learning methods used.
- The validation of the deep learning methods on the data and problem.
- A discussion regarding the results obtained.
- We expect your report is written at a high standard academic level.

What to hand in

You are required to submit the following items to ECS Handin:

- Your 5-page report (as a PDF document in the CVPR format; max 5 A4 pages, no appendix).
- Your code enclosed in a zip file.

Marking and feedback

You will receive a grade out of 30 for this coursework. Marks will be awarded for:

- Successful completion of the task.
- Evidence of understanding.
- Well structured and commented code.
- Evidence of professionalism in the implementation and reporting.
- Quality and contents of the report.
- The quality/soundness/complexity of the deep learning approaches.

Standard ECS late submission penalties apply.

Individual feedback will be given covering the above points

Useful links

- Module COMP6252 website: https://secure.ecs.soton.ac.uk/module/2223/COMP6252/43095/
- Jupyter notebook: https://docs.jupyter.org/en/latest/
- https://data-flair.training/blogs/deep-learning-project-ideas/
- https://machinelearningprojects.net/deep-learning-projects/

Questions

If you have any problems/questions, use the Q&A channel on Teams, or email Xiaohao and Hikmat.