UNIVERSITY OF
LIVERPOOL

COMP338 – Computer Vision – Assignment 2

o This assignment is worth 15% of the total mark for COMP338

o Students will do the assignment individually.

Submission Instructions

o Send all solutions as a single PDF document containing your answers, results, and discussion of the results. Attach the source code for the programming problems as separate files (e.g., python or .ipynb), and compress the codes into one zip file.

o Each student will make a single submission to the Canvas system.

o **The deadline for this assignment 15/12/2023, 5:00pm**

o Penalties for late submission apply in accordance with departmental policy as set out in the student handbook, which can be found at
http://intranet.csc.liv.ac.uk/student/msc-handbook.pdf
and the University Code of Practice on Assessment, found at
https://www.liverpool.ac.uk/media/livacuk/tqsd/code-of-practice-on-assessment/code_of_practice_on_assessment.pdf

Image Classification with CNN

In this project, we will do image classification using the **Fashion MNIST** dataset. The lab "*COMP338_Lab_08_Fashion_MNIST_Classification.ipynb*" on Canvas shows the example source code for this assignment.

Tasks:
1. (30 marks) Design a deep neural network for image classification.
2. (30 marks) Train and test your network on **Fashion MNIST** dataset.
3. (40 marks) Write a report to clearly explain your network, the intuition behind your design, and discussion of your results.

Rules:
- You can refer to any papers and reuse any source code. However, you should clearly cite the references in your report.
- Use free Google Colab account (https://colab.research.google.com/) for training. The maximum training time on a free Google Colab account is 12 hours.

Our solution will be evaluated by:
- The design concept or novelty of your network design (30%).
- The accuracy of your trained model, compared with other students (30%).
- The completeness of your report (40%).