**Assignment 3 Training a deep network for semantic segmentation**

February 1st, 2023

**Objective**

- Learn pytorch and helper libraries

- Understand VOC Semantic Segmentation Dataset

- Create data transforms to augment the dataset

- Create the neural network

- Train and evaluate the neural network

**Resources and Instructions**

Environment Setup:

We recommend using Google Colab to complete this assignment.

Upload the assignment ipynb file to Google Colab

* Runtime -> change runtime type
* Set hardware accelerator to None for all initial development and testing (to avoid hitting the GPU limit)
* Set hardware accelerator to GPU when ready for final training

Assignment:

Complete the two sections within the ipynb assignment file and run all cells. Reviewing the tutorial powerpoint and mnist ipynb file will be helpful.

Deliverable HTML output:

In the Jupyter notebook, go to File > Download as > HTML (.html). Submit a ZIP file containing the HTML output. Please follow the naming convention of your zip file: a3\_<user\_id>.zip

**Due Date**

11:59 pm, February 10th, 2023

No late submissions will be accepted. There will be no extensions.

**Marking Scheme**

This assignment is out of 10 marks.

* 2 marks for implementing the data augmentation section
* 8 marks for implementing a neural network
  + 8 marks will be given for an mIoU of at least 40% on the validation dataset.

**Policies**

Collaboration

You can discuss the problem with peers, but you must design and implement your own solution independently.

Use of online resources

You may consult online resources for inspiration, but you must develop your own code.