COMP4388: Machine Learning
Fall 2024/2025
Final Project (Groups of two students)
Deadline: 7 January 2023

In this project you will use Convolutional Neural Networks to classify images into pre-defined categories.

Dataset:

- The dataset that will be used in this work is CIFAR-10 dataset[1]. You can download the row images of the dataset here https://github.com/YoongiKim/CIFAR-10-images.
- From the 10 classes present in this dataset, you should include at least 4 classes for this classification task.

Tasks:

- Train a CNN model. You can design your own architecture or use existing architecture. You should specify the details of what is the architecture used either you designed it or cite existing literature on what did you use.

Reporting results and experiments:

In your report and analysis you should provide the following:

a. State and report the architecture that you used to train CNNs.
b. Compare the performance of your model against a CNN model with the following specification: 1 convolutional layer (non-overlapping filters), 1 average pooling layer, fully connected NN.
c. You should report the Accuracy, Precision, Recall, and F1-Score of both models.
d. Provide the Class confusion matrix of the classification output for both classifiers.
e. Provide your insights and interpretations of the results (discussions).
f. You should provide the code used in this project

[1] https://www.cs.toronto.edu/~kriz/cifar.html