DSCI – 552: Machine Learning for Data Science

Assignment 6

This is a group assignment. The groups for the assingment are the same as the project. One submission per team is enough.

In this assignment, you will work on the CIFAR-10 image classification dataset. The dataset consists of 10 classes. You can import it using *keras.datasets.cifar10.load_data()* function.

The task is to create your own Convolutional Network. Since we will want to evaluate the models for all the students equally there will be limits to the parameters that you can use which are listed below. You can use a

- Maximum of 3 CNN layers
- Maximum of 2 Dense layers
- Total of 128 channels in all the CNNs combined
- Minimum (3,3) sized kernels

You can use drop out layers and run the model for any number of epochs. Report the following for the test dataset:

- The CPU Times and Wall Times returned by fit() from the training process
- Generate loss and accuracy versus epoch plots
- The accuracy, precision and recall on the test dataset
- The precision and recall values by class labels on the test dataset. There are 10 classes.

Submit your work in an ipynb file