CECS 551
Assignment 7
Total: 40 Points

General Instruction

- Submit uncompressed file(s) in the Dropbox folder via BeachBoard (Not email).

---

1. Find the cifar-10 data set at *here*. There are 50,000 training images and 10,000 test images. Please ignore their training batches.

2. Design covolutional neural networks to classify cifar-10 images using `keras` library.
   (a) Split the training dataset into sub_training and validation sets randomly. Use $\frac{1}{5}$ of training dataset as validation set. Use the 'accuracy' as metric. Please repeat 10 times of random split and aggregate (average) the accuracy.
   (b) (40 points) Model evaluation
      - Evaluate multiple combinations of activation function, optimizer, hyper-parameter, generalization (including data augmentation), and architecture.
      - Using sub_training and validation datasets, find the best models.
      - Report 3 best models in terms of **test accuracy**.

3. Submit `ipynb` files which include your source codes and `pdf` file which includes your report.