

CECS 551
Assignment 7
Total: 40 Points

General Instruction

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