CMS 165 Foundations of Machine Learning Homework 5

Due date: March 12, 6pm

Question 1 - 100 points

In Homework 4, you created a neural network that achieves 74% test accuracy in CIFAR-10 dataset classification task. In this homework, you will further investigate the role of regularization. Here are some effective regularization strategies:

1. L1 & L2 regularization on weights

2. Explicit weight constraints on each layer

3. Dropout & Batch Normalization

4. Data Augmentation

Using the same architecture from Homework 4, implement any **3** of the given regularization strategies. Record and comment on the changes in the training and test error.

Bonus: You can get **extra 40 points** by implementing all of the given strategies.