

# Spring 2023 Introduction to Deep Learning

## Homework Assignment 4

Due date: April 25 2023

**Problem (Build LeNet for colorful image classification).** In this problem, you are asked to train and test a neural network for *entire* CIFAR-10 colorful image dataset. Some information of the network is as follows:

- Its structure is **modified LeNet**. You can check the 4<sup>th</sup> slide in Lecture 10 for details.
- An incomplete code has been given. You can fill it or re-write all the codes by yourself.

### Performance Requirement and Submission:

- The test accuracy should achieve above 50%
- You need to submit **three** results: 1) network without dropout/batch normalization, 2) network with one additional dropout layer and 3) network with one additional batch normalization. Compare the results in your submission.
- Submission should include your source codes and screen snapshot of your train and test accuracy, plus the training time

**Suggestion for hyperparameter setting (not necessary to follow):** Check the default setting in the code. You are allowed to change them

**About dataset loading:** Check the default setting in the code. You are allowed to change them

**Reminding:** You can check PyTorch *torch.nn* to find the packed Batch Normalization and Dropout layer if you would like to use.