

# NCTU Pattern Recognition, Homework 5

**Deadline: June 23, 23:59**

## Coding (100%):

In this coding assignment, you need to implement the deep neural network by any deep learning framework, e.g. Pytorch, TensorFlow, or Keras, then train the DNN model by the Cifar-10 dataset and try to beat the baseline performance.

## Download dataset [HERE](#).

Please note that you should only train and evaluate your model **on the provided dataset**.

**DO NOT** download the data from other resources.

If you are a newbie in a deep learning framework, we recommend you learn **Keras** or **Pytorch**.

- [Pytorch tutorial](#)
- [Keras tutorial](#)
- [TensorFlow tutorial](#)

1. **(100%) Show your accuracy of your model on the provided test data by screenshot the results of your code and paste them on your report**

## Evaluation:

Accuracy	Your scores
$\text{acc} \geq 0.95$	100 points
$0.9 \leq \text{acc} < 0.95$	90 points
$0.80 \leq \text{acc} < 0.90$	80 points
$0.75 \leq \text{acc} < 0.80$	70 points
$0.65 \leq \text{acc} < 0.75$	60 points
$0.6 \leq \text{acc} < 0.65$	50 points
$\text{acc} < 0.6$	No points

Note: Keyword to boost your model performance

1. Data augmentation
2. Hyperparameter searching for model structure (number of filters, number of convolution/dense layer) and optimizer (learning rate)
3. Regularization

Note: If your result is bad, check [this tutorial](#) first to debug your model