**Hands-on Assignment 3**

For students choosing Option1 only. HA3 and HA4 are mutually exclusive.

**Due Date: See web**

**Objective:**

**In the Tutorial 3 folder, there are two CNN models for the CIFAR10 dataset written using PyTorch. In this hands-on assignment, you are asked to choose one of the models** and do some experiments with different hyperparameters using the program and report the results. In your experiments, start with the baseline model from Tutorial 3 and

* Vary the number of hidden layers (at least two options)
* Vary the number of filters (at least two options)
* Vary the learning rate (at least two options: rate decay and cosine scheduling)
* Try different optimizers (at least three)
* Try with or without batch normalization.

In total, you will need to run at least **10 experiments.** Write a simple report to summarize the results.

**Notes**:

1. **The report should not only be a collection of Python outputs**. Instead, report the experiment results in the style of a research paper. It is important to present the model variants and corresponding results in an organized and easy-to-understand format. Tables and graphs are both effective ways to do this. Discussions regarding how changes in hyperparameters affect the model performance should be included. The grading will be based on the amount of work as reflected in your report, coherence of the results, insightfulness of discussions, and clarity of your presentation.
2. Similarity scores will be computed for this assignment and **similarity penalty will be applied** (details see the course webpage).

Directly copying a batch of Python outputs to the report may cause a high similarity score of your submission. In general, we **will not** accept requests for exemptions from the similarity penalty due to the duplication of Python outputs.

1. Submission: Submit a report in **docx or pdf** format via Canvas. The report should be named as **Student\_ID\_HA3.docx/pdf**.

There is **no need** to submit your code.

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