Summer Project

Assignment1

CILAB

A Computer Vision Tutorial

July 5, 2023

Problem 1

1. Due date: 7.17. (Mon) 10 A.M.
2. Goal: On CIFAR100 dataset, achieves top-1 accuracy $> 80\%$ within **3 hour**.
3. Rules:

   a) Train your network from scratch using train split and evaluate the network on test split, do not finetune or use the weight pre-trained from other datasets.

   b) Write your code yourself, which includes network, train & eval loop, metric, *dataset* (do not just import `torchvision.datasets.CIFAR100`), etc. Referring to other codes is okay but just copy & paste from `GitHub` is not allowed.

   c) Use `pytoch` library. Because our lab members including your mentor mainly work on `pytoch` library, you will get more practical feedback if you use the `pytoch` library.

   d) Summarize the experiment result and write a report on a single paper (A4-sized, pdf). The report must include **(1) the training hyper-parameters** e.g. epoch, network type, flops, parameters, and image size, **(2) the experiment results** such as the best top-1 & 5 accuracies, training time, and epoch vs eval-top1-acc graph, **(3) your novel argument for fast network convergences**. e.g. *We argue that the Adam optimizer is the key factor for fast network convergence. In the experiment, the Adam optimizer improves 2.3% accuracy improvement.* Within a single paper, any contents other than mentioned things are okay.

   e) Prepare the presentation ($<$3 min) using your single-paper report. Please show us **the figures and tables, not texts**.

4. Program:
   - Start: 7.5 (Wed) 10 A.M.
   - QnA: 7.12 (Wed) 10 A.M.
   - End: 7.17 (Mon) 10 A.M.
5. Useful links:
   - https://github.com/clovaai/CutMix-PyTorch.
   - https://github.com/weiaicunzai/pytorch-cifar100.