Summer Project

Assignment3

CILAB

A Computer Vision Tutorial

July 23, 2023

Problem 1

1. Due date: 7.26. (Wed) 10 A.M.
2. Goal: Understanding and Applying DistributedDataParallel(**DDP**) and **Wandb**.

Rules:

a) A naive training code is provided. Apply **DDP** and **Wandb** to the training code provided. Check classification performance using the given model(**ResNet-50**) and hyper-parameters on **CIFAR-100**. If the model is trained normally, you will be able to achieve about **77%** classification performance. You can refer to other libraries, but copying and pasting is prohibited. Please think about the principle of DDP and write your code.

b) **Parser** : Add code so you can set **GPUs-ID** and **Wandb** using the parser library.

c) **DDP** : The number of GPUs used in the training must be at **least two**. (Using single GPU is prohibited.)

d) **Wandb** : Add or modify the metrics of the learning code provided. The code provided outputs a top-1 error. Submit a wandb report containing the following categories. (a) Top-1 & Top-5 accuracy (b) Training & Validation loss (c) Throughput (d) FLOPs (e) Number of Parameters.

e) Please **submit a training code** with the above-mentioned content added.

4. Program:

- Start: 7.24 (Mon)
- QnA: Always available
- End: 7.26 (Wed) 10 A.M.

5. Useful links and tips:

- **timm**: https://github.com/huggingface/pytorch-image-models
- **Naive code**: https://github.com/clovaai/CutMix-PyTorch
- **Concepts for DDP**: https://algopoolja.tistory.com/95
- **Wandb**: https://docs.wandb.ai/quickstart