Summer Project

Assignment4

CILAB

A Computer Vision Tutorial

July 27, 2023

Problem 2

1. Due date: 8.02. (Wed) 23:59 P.M.
2. Goal: On CIFAR100 dataset, achieves top-1 acacuracy $> 82\%$ using timm library's various augmentation techniques. You can only use the given model(**ResNet-50**).
3. Rules:

   a) Register your own custom model in the timm library to learn the model. Also, improve classification performance by using various augmentation techniques in the timm library. You can refer to the learning techniques used in various SOTA papers. You should achieve at least 82% top-1 accuracy.

   b) You can use the model code provided in week2, or you can use the model code provided by timm. However, you must ensure that factors such as stochastic depth operate in the model.

   c) After conducting the experiment using various augmented techniques and learning parameters, please introduce your own training settings. The amount is one A4. Identify the relationship between each augmentation technique, and investigate its impact on performance. You can refer another paper. In particular, you should explain the most important factors for improving classification performance in your proposed learning technique.

   d) Please review the timm instructions provided. Understand each principle by changing detailed options such as augmentation techniques, schedulers, optimizers, etc.

4. Program:

   - Start: 7.27 (Thu)
   - QnA: Always available
   - End: 8.02 (Wed) 23:59 P.M.

5. Useful links and tips:

   - **timm**: https://github.com/huggingface/pytorch-image-models
   - **timm paper** : https://arxiv.org/abs/2110.00476
   - **auto-aug paper** : https://arxiv.org/abs/1805.09501