DL/DLOps (2023)
Lab Assignment 6
Deadline: 02/04/2023, 23:59:59

There will be a 25% penalty for each day of late submission.

Guidelines for submission

1. Perform all tasks in a single colab file.
2. The colab file should be named appropriately with your complete roll number(ex: "B19CSE111_Lab_Assignment_6.ipynb").
3. Write compact code with proper comments.
4. Strict action will be taken if indulged in plagiarism

Q1. Based on the lecture by Dr. Anush on DLOPs, you have to perform the following experiments :

- Load and preprocessing CIFAR100 dataset using standard augmentation and normalization techniques [10 Marks]

- Train the following models for 50 epoch and at the same time profile the model using Tensorboard during the training step [5*4 = 20 Marks]
    - ResNet-34
    - DenseNet-121
    - EfficientNet-B0
    - ConvNeXt-T

- Then perform the following model inferencing techniques on the above listed models [10*2 = 20 Marks]
    - ONNX ; ONNX Quantized
    - Torchscript

- Report the model size and average execution time before and after performing the above mentioned inferencing techniques on the test dataset [5*4 = 20 Marks]

Analyze the models based on their architecture and inferencing techniques and write them in the report.

Ref :

- https://colab.research.google.com/drive/1gsyi1oLvZBfrGgTpJ4mA0lInLPAsEkWC
- https://colab.research.google.com/drive/1T5pp6qf3UZnqsjZcdEFK2wSpMlxsTBOw?usp=sharing
- https://colab.research.google.com/drive/1Ow0GsY6_5Q9MzDA0KJOqpJId7XoaKfi5
- A ConvNet for the 2020s : https://arxiv.org/abs/2201.03545