Assignment-2

The objective of this assignment is to evaluate a pre-trained and a fine-tuned deep CNN model for the image classification task.

Task: Download a ResNet model (any version) trained on the ImageNet classification dataset, and the PASCAL VOC 2012 dataset from the following link:
http://host.robots.ox.ac.uk/pascal/VOC/voc2012/index.html

Fine-tune the last few layers of the chosen ResNet model, and evaluate the classification performance on all the 20 categories.

You are required to fine tune (i) the last layer, (ii) the last two layers, (iii) the last three layers and so on, upto first residual block from last. Perform all the cases (i), (ii), (iii) and so on separately, and for each case, you are required to do detailed analysis regarding the performance of the models. (e.g. you may report accuracy, confusion matrix or other evaluation metrics for each case, you may report the effects of hyperparameter tuning on the performance of the models etc.)

What to Submit:

1. Submit the code implemented, trained models for all of the different cases along with a proper readme file for reproducibility of the results in a zip folder.
2. A separate write-up (pdf report) containing all the details, analysis, and the salient observations along with five things that you would have learned in this assignment.

Note:
There will be a severe penalty in case of plagiarism. Please refer to “Cheating Vs. Collaborating Guidelines” given at https://courses.cs.washington.edu/courses/cse573/12sp/.