

Deep Learning, Winter 2019

Assignment # 3

In this assignment you will train a convolution neural network to do perform image classification using CIFAR-10 dataset. The code for this assignment as discussed in the class, is available at the following link:

http://pytorch.org/tutorials/beginner/blitz/cifar10_tutorial.html - sphx-glr-beginner-blitz-cifar10-tutorial-py

The following tasks are expected from this assignment:

1. Tabulate the performance on test data in the form of a 10x10 confusion matrix.
2. Retrain the network with different mask sizes, e.g. 3x3 or 3x5 or 5x7 and tabulate the performance in the form of a confusion matrix
3. Change the number of filters at the first convolution layer and tabulate performance
4. Select a subset of 100 test images. Measure the accuracy on the subset using any of the trained models from Steps 1-3 above. Next, flip the test images at random either horizontally or vertically and measure the accuracy again. Comment on the results.

Present your work in the form of a jupyter notebook report saved as PDF or HTML.