

SYDE 671 Assignment 4 Writeup

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Task 1

I modified the provided code to perform image classification on the scene dataset. First, data augmentation was performed to increase the size of the dataset, with the intent of increasing generalization. I added random cropping and shifting to the training and validation datasets.

Standardization was performed on the dataset by subtracting the mean and dividing by the standard deviation. This helps increase performance by having the weights better fitting the data, rather than outliers.

Finally, the architecture of the model was modified to increase validation accuracy. An additional fully connected layer and a dropout layer were added to reduce overfitting. Dropout was performed with a probability of 0.5.

Training the model for 10 epochs on an NVIDIA GeForce RTX 2070 gave validation error of 0.018667 and a train error of 0.06515. The code can be found in the included `run.py` and `your_model.py` files.

Task 2

In this task, fine tuning was performed on a VGG model pretrained on ImageNet. This was done by removing the final fully connected layer and training on the scene recognition dataset for 30 epochs. Training was performed in a Colab notebook and the code can be found in the included Jupyter notebook. Unfortunately, I was unable to run the Tensorpack template code for this part and was therefore unable to test my code.