Assignment 14

Applied Machine Learning

In this assignment, we will continue working on image classification using PyTorch and develop another model for the intel image dataset.

1. [60 pts] Create a convolutional neural network (CNN) to train and report its performance on the testing portion of the dataset. 95% reclassification and 75% testing performance should be achievable without any hyperparameter tuning. (Hint: My model, which is similar to the model in module notebook, took around 10 minutes to train 10 epochs without a GPU.)

2. [20 pts] Add regularization and/or drop-out features to your CNN. Report your model's best performance. As the performance standard deviation decreases the model is deemed to be more robust. Why?

3. [20 pts] Add batch normalization and early stopping features to the pipeline and demonstrate their effectiveness.