ADVANCED MACHINE LEARNING

ASSIGNMENT -2

REPORT

In short, picking the right training sample size and network is tricky and depends on lots of things like the data you have, the type of model you're using, and how you optimize it. Usually, having more data helps, but there's no one-size-fits-all answer. Things like tweaking how you train the model, like adding more data or adjusting settings, can make a big difference.

For our model, we found that with 4000 training samples, we got the best accuracy at 82.5% and less loss at 44.29%. Adding more samples might make the model too specific to the training data. We also tried using a pre-trained model called VGG16, which already learned a lot from big datasets. With that, we got an accuracy of 97.3% and only 7.2% loss, even with fewer samples.

Fine-tuning the pre-trained model for our specific task made it even better. Overall, finding the right balance between sample size and model choice takes some experimenting to get the best results.