Bryan Faryadi (801178567) - Homework 7

Github: <https://github.com/bfaryadi/ECGR4105_hw7_bf>

Note: I trained my model for 20 epochs instead of 200 for this homework, because my runtime kept randomly disconnecting partway through the training.

Problem 1

With two convolutional layers and two fully connected layers, training took 544.30 seconds and resulted in a final training loss of 0.9813, training accuracy of 0.65656, and validation accuracy of 0.62. This is significantly better than the fully connected network from homework 6, which resulted in a final validation accuracy of 0.4718 at 100 epochs. The fully connected network had three layers of 1024, 512, and 256 nodes respectively.

With an additional convolutional layer of 4 channels, the training took 553.41 seconds and resulted in a final training loss of 1.2056, training accuracy of 0.53786, and validation accuracy of 0.5453. These results are significantly worse than in Part A, which may be due to the low number of epochs.

Problem 2

With a 10-block ResNet-based CNN, my training took 4956.35 seconds for just 20 epochs, and resulted in a final training loss of 0.6553, training accuracy of 0.4493, and validation accuracy of 0.4254. Given that the training loss is much lower than anything seen previously while the accuracy is significantly worse, I believe there is major overfitting occurring.