EE 243 Advanced Computer Vision Assignment

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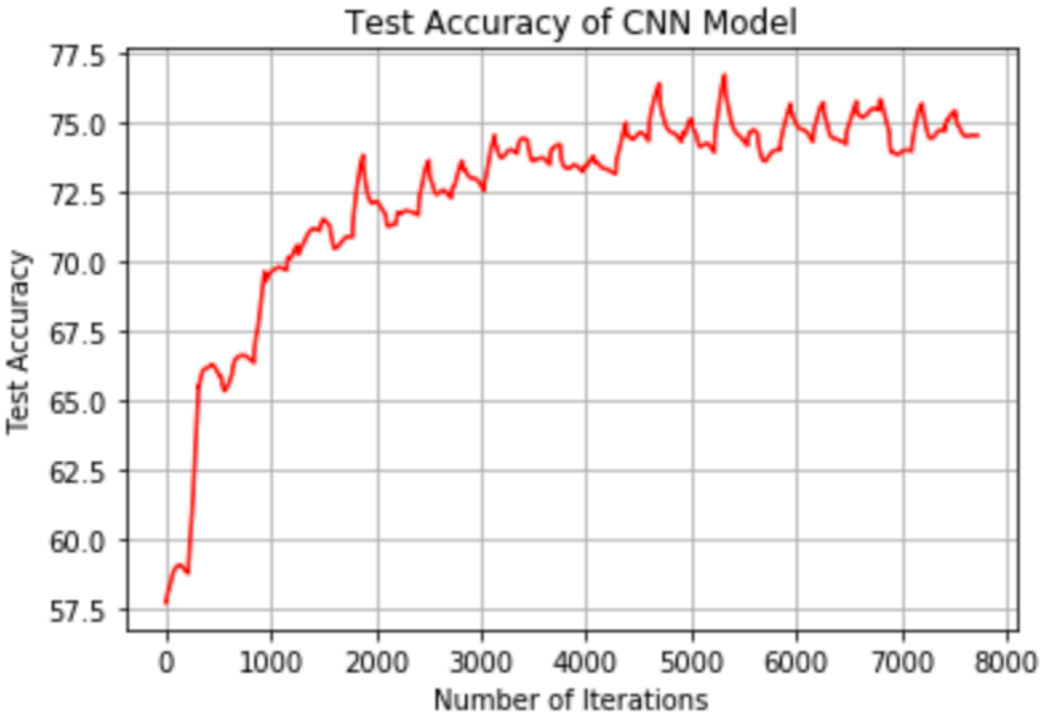
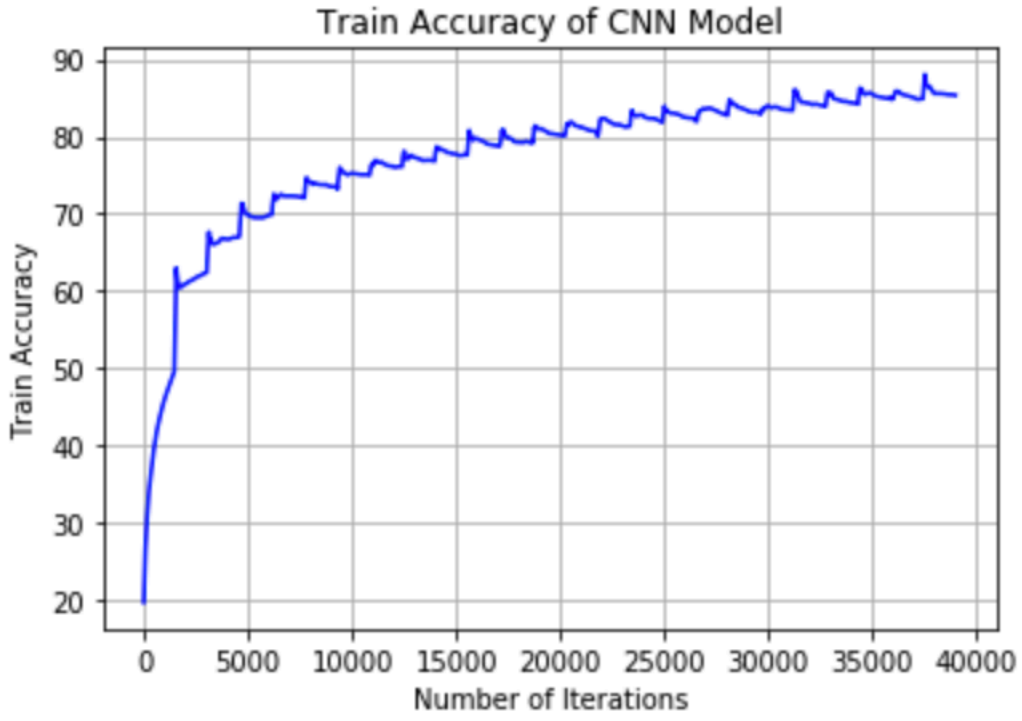
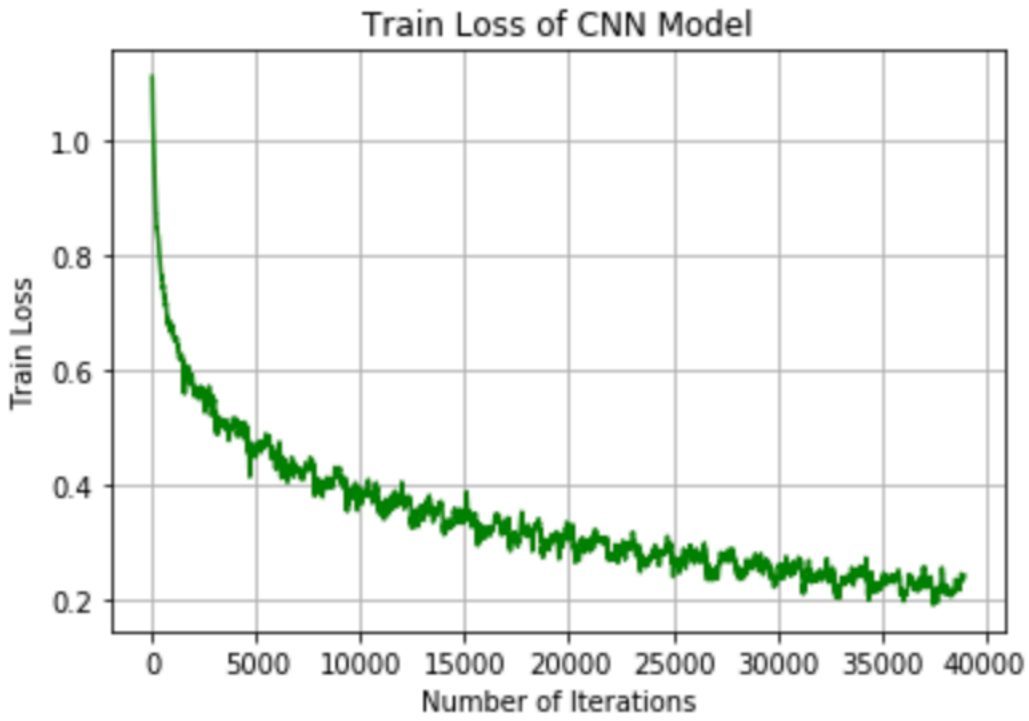
Problem1







Based on the plots, the model I trained has a test accuracy around 75%, while the train accuracy is around 85%. Since the training accuracy is about 10% greater than the test accuracy, I think the model is overfitting (Performs better on training set but slightly worse on test set)

For my model, first I used Conv2d, our input channels are 3 and my first Conv2d will output 64 channels with the kernel_size = 5. Then the output should be 64x28x28, since (32-5)+1 = 28. Then I applied batch normalization on the output and also ReLU. After then I applied a Max polling with kernel_size =2 and stride = 2. After the first level layers (Conv2d->BatchNom2d->ReLU->Poll), the output size becomes 64x14x14. I applied all the same layers again but add one more step before batch normalization, which is dropout with a probability = 20%. Then the second level layers become (Conv2d->Dropout->BatchNom2d->ReLU->Poll). And finally the output size would be 64x5x5 (In Conv2d, output = 64x10x10, and after Polling, output = 64x5x5).
And after then I applied Linear layer three times to fully connect the layers. Eventually we return the output image.

Actually I think if I perform more convolution stuff I will get better test accuracy, but when I tried to convolute more, the time consuming is insane in Macbook with GPU support (I use Macbook all the time).