

Mnist Classifier writeup

I implemented a CNN with two convolutional layers, each with a Relu activation layer and a max pooling layer. These are followed by a fully connected layer so that the output has 10 classes. I resized the images to 128x128 and then performed a random crop to a size of 100x100. With 10 epochs, I reached an accuracy of 95%. I used a batch size of 8 and a learning rate of 0.001.

If I spent more time on it, I could do several things to improve it. I could keep the images larger, thus leaving more information for the convolutions to learn from. As for the hyperparameters, I could spend more time performing a search over possible values to optimize the learning rate and batch size. My batch size may be too small, in that each batch could have a high variance with only eight images. I could also perform validation after each epoch, and keep track of when the validation accuracy is the highest, thus optimizing the number of epochs. Lastly, I could optimize the neural net structure, adding more layers and possibly also making it wider to contain more information.