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**Project 1 Report:**

A graph of a graph

AI-generated content may be incorrect.A graph of a graph showing a number of tests

AI-generated content may be incorrect.**Simple Classification Results:**

As we can see in the accuracy curve, we can see that for both graphs the accuracy and loss both converge around epoch 80 under this model. In both cases the test set is following nearly identical to the train set, which makes sense considering that they we’re both created using the make blobs feature in sk learn. To further optimize this model, something that we could do is just reduce the number of epochs needed during training because it doesn’t seem to make any difference, however in our case this model trains so fast it doesn’t really matter what we do.

**A graph of a number of numbers

AI-generated content may be incorrect.A graph of a graph showing different colored lines

AI-generated content may be incorrect.Convolutional Neural Network:**

As we can see in the accuracy curves for this case, we can see that our model is prone to being overfitted to our training set. We can see from just the difference between the accuracy curve for the train curve and the validation and test sets. This model takes a ridiculously long time to train, running 20 epochs took my laptop around 11 minutes. It looks like for the most part the accuracy converges around 90% for the validation and the test set while the trainset is constantly increasing for every epoch. As far as the loss function goes, we can see the our model is once again following a similar trend to the accuracy where in the cross entropy loss is being minimized in the train set much farther than the convergence of around .75 in the test and validation sets.