ELEC 475 Lab 1

MLP Autoencoder

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# Model Details

Our model is a simple MLP autoencoder with 748 (28x28) inputs in the first layer (L1) and 392 inputs in the second layer (L2) into a bottleneck of size 8. The image is then decoded back to 392, then decoded back to 784 (28x28) using a sigmoid function. All neurons are using the Relu function other than the last layer for decoding from 392 to 784 (28x28).

# Training Details

Our network was trained using the Adam optimizer with a learning rate of 1e-3, a weight decay of 1e-5 with the MSE loss function we use an Exponential LR scheduler with a gamma of 0.9. We trained using the MSNIST training set, a batch size of 2048 and 50 epochs.

# Results

The system worked well. The results were as expected with a loss of about 0.03. The loss plot behaved as expected as seen in the graph below it continued to diminish across all 50 epochs.

A graph with a blue line

Description automatically generated