CSCI335 Machine Learning

Homework 11 (See demo in ML34 video and ML33 video about the training loop)

1 (1pt). **Download** MNIST dataset from https://www.kaggle.com/datasets/playlist/mnistzip/

2 (2pt). **Create** Train and Validation **Dataset** and DataLoader objects.

3 (4pt). Define **the model:** the number of hidden layers and their size

4 (4pt). Write the **training loop.** Use accuracy as the metric on the Validation set. You can use early stopping or just observe the validation curve.

5 (2pt). Plot the training loss and validation accuracy. You can use Tensorboard.

6 (3pt). The **accuracy** on the validation set should be > 0.97.

7 (4pt). Create **three** images, one with a digit not in the middle, and apply your trained model to them.

8. **Submit** the Jupytor notebook with saved model weights and the images from the previous step in one archived file.