

Instructions for Running Neural Network Program

This program allows for the training and testing of a Neural Network consisting of one hidden layer and one output layer. It is written in python and is capable of taking in data with any number of inputs and outputs. To use the program, the following steps should be followed:

1. Download 'main.py' and ensure it is in the same directory as all network weight files, training files, and testing files.

Training

1. To train a network, type into the terminal:
 - a. `"python3 main.py"`
2. The program will then prompt the user:
 - a. `"Input the untrained network file:"`
 - b. `"Input training data file:"`
 - c. `"Input the output file for the trained network:"`
 - d. `"Input amount of epochs to train for:"`
 - e. `"Input learning rate:"`
3. After the user inputs the specified information, the program will train the network on the inputted training data and display the error rate at each epoch like so:
 - a. `"Epoch: 1/100, error = 360.283079"`When the training is complete, the trained network will be exported to the output file the user specified.

Testing

1. To test a network, type into the terminal:
 - a. `"python3 main.py"`
2. The program will then prompt the user:
 - a. `"Input the trained network file:"`
 - b. `"Input testing data file:"`
 - c. `"Input the output file for testing results:"`
3. After the user inputs the specified information, the program will test the network on the inputted testing data and output the results to the specified output file