Homework 1 Statement

Test Accuracy: 97.97%

```
Epoch 30:  , Loss:  644.714405996 , Train Accuracy:  0.9988
Finished training process! Used 581.98 seconds
Model Accuracy:  0.9797
```

Implementation

In this assignment, I constructed my neural network with **one hidden layer** which has **100 hidden units**. The activation function of the hidden layer is **sigmoid function**. The output layer applies **softmax function** as its activation function. The learning rate is set to be constantly **0.01**. The optimization algorithm is **stochastic gradient descent**. I trained my model for **30 epochs**.

How to Run

Just run the .py file in terminal as follow.

```
ZMYdeMacBook-Pro:HW1 zmy$ python3 mzha2_HW1.py
```

Step 1. Initialize the model. (Feed the learning rate and number of hidden units)

```
model = Neural_Network(alpha=0.01, H = 100)
```

Step 2. Train the model. (Feed the number of training epochs)

```
model.train(num_epochs=30)
```

Step 3. Evaluate the model. (Calculate the Test Accuracy)

```
model.evaluate()
```