Artificial Intelligence and Machine Learning Fundamentals

Activity 14: Written Digit Detection

In this section, we will discuss how to provide more security for cryptocurrency traders via the detection of hand-written digits. We will be using assuming that you are a software developer at a new cryptocurrency trader platform. The latest security measure you are implementing requires the recognition of hand-written digits. Use the MNIST library to train a neural network to recognize digits. You can read more about this dataset at https://www.tensorflow.org/tutorials/.

Improve the accuracy of the model as much as possible by performing the following steps:

1. Load the dataset and format the input.
2. Set up the TensorFlow graph. Instead of the sigmoid function, we will now use the ReLU function.
3. Train the model.
4. Test the model and calculate the accuracy score.
5. By re-running the code segment that's responsible for training the dataset, we can improve its accuracy. Run the code 50 times.
6. Print the confusion matrix.

At the end of the fiftieth run, the confusion matrix has improved.

Not a bad result. More than 8 out of 10 digits were accurately recognized.