Group Proposal

By: Zhen Zhang and Neeraj Walia

We are planning to build a model to correctly identify hand written digits. Our program will be able to identify digits from zero to nine in any hand writing. We chose this problem because of its many real world applications like toy touchpad that can identify writing digits etc. Also the data set to test and train is easily available. We will use MNIST database of handwritten digit available on kaggle website. This data set has 60,000 pattern training sets and 10,000 patterns for test sets.

We are planning to build a multilayer neural network where we can feed hand written digits as input and model will classify them to the correct digit in the output. And time permitting, we will work on building convolution network model for this problem and will do the comparison between the two networks.

Pytorch framework will be used for this project because it is the one of the latest framework available which is used widely in the industry and we learnt this framework in the class. Also Pytorch uses the power of GPUs for faster processing. We will be using our lecture notes as reference as well as pytorch tutorials, neural- network book and tips from kaggle website. We will judge the performance of our network by calculating the accuracy rate of our test data set, ROC curve and build confusion matrix.

Division of work is as follows: Zhen and Neeraj will begin writing all parts of code. After that we will discuss and help answer each other questions/issues. Finally combine our code for the final project delivery. Reports will be written individually. And presentation sides will be done together and will be divided equally for presentation.

Project Plan

Coding should be done by April 15th

Individual Reports and group report will be complete by April 21st.

Presentation slides will be done by Aril 21st.