Assignment-0

Neural network

In this assignment you will implement a fully connected neural network and CNN. Use MNIST dataset for this assignment.

1. Build a neural network with given description. (only feed forward part, no backpropagation)

- No. of hidden layers = 1
- No. of neurons in the hidden layer1 = 100
- Activation function of hidden layer: Sigmoid function
- No. of neurons in the output layer = 10
- Activation function in output layer: SoftMax function
- Input: MNIST data (28*28)

2. Build a convolution neural network with given description (LeNet model). (only feed forward part, no backpropagation)

- Convolution layer 1: 5*5, with 6 output channels
- MaxPool1: 2*2, stride=2
- Convolution layer 2: 5*5, with 16 output channels
- MaxPool1: 2*2, stride=2
- Linear Layer1: input (calculate yourself based on conv and pooling layer), output=120
- Linear Layer2: input = 120, output=84
- Linear Layer1: input=84, output=10
- Use ReLU as activation function in each convolution and linear layer
- Input: MNIST data (28*28)