EE5353 Program Assignment 6

Convolutional Neural Networks using Keras using Google Colab

Go through the GoogleColab_Instructions.doc on how to run the given python code in google colab. Insert the following Python notebook (Keras_CNN_MNIST.ipynb) in your google drive Colab folder as discussed in the instructions document

Task 1 – (already provided with the code) –

Convolution layer 1

Dropout layer

Flatten the outputs for fully connected layer

Fully connected hidden layer

Dropout

Softmax layer

Print training cost(Error) for 10 epochs(Nit), Testing accuracy with testing image and predicted class for 4 testing data

Task 2 –

Convolution layer 1

Max pooling layer (Uncomment line **model.add(MaxPooling2D(pool_size=(2,2)))**)

Dropout layer

Flatten the outputs for fully connected layer

Fully connected hidden layer

Dropout

Softmax layer

Print training cost(Error) for 10 epochs(Nit), Testing accuracy with testing image and predicted class for 4 testing data

Task 3 –

Convolution layer 1

Convolution layer 2 (Uncomment **model.add(Conv2D(32, kernel_size=3, activation='relu'))**)

Max pooling layer

Dropout layer

Flatten the outputs for fully connected layer

Fully connected hidden layer

Dropout

Softmax layer

Print training cost(Error) for 10 epochs(Nit), Testing accuracy with testing image and predicted class for 4 testing data

Task 4 –

Add Normalization (**X_train = X_train / 255**

X_test = X_test / 255)

Convolution layer 1

Convolution layer 2

Max pooling layer

Dropout layer

Flatten the outputs for fully connected layer

Fully connected hidden layer

Dropout

Softmax layer

Print training cost(Error) for 10 epochs(Nit), Testing accuracy with testing image and predicted class for 4 testing data