Mechatronics Engineering and Automation Program
CSE480: Machine Vision
Lab Assignment #04

Task 1:

Implement a fully connected neural network to classify the MNIST dataset, using keras.datasets.mnist.load_data().

1. Design a neural network using dense (fully connected) layers only.
2. Train and test the model on the dataset.
3. Implement a function to evaluate the performance of the trained model by plotting the training and validation loss and accuracy curves over the training epochs.
   Hint:
   You do not need to build a deep network. Use a small number of layers and train the model for 10 epochs only to reduce execution time

Task 2:

Implement a fully connected neural network to classify the Fashion-MNIST dataset, using keras.datasets.fashion_mnist.load_data().

1. Normalize the input images.
2. Design a neural network using dense layers.
3. Train and test the model.
4. Plot loss and accuracy curves over the training epochs.
   Hint:
   Flatten the images before feeding them to the network.

Task 3:

Implement a fully connected neural network to classify the CIFAR-10 dataset, using keras.datasets.cifar10.load_data().

1. Preprocess and flatten the input images.
2. Design a neural network using dense layers.
3. Train and test the model.
4. Plot training and validation accuracy curves.