August-December 2015 Semester
CS669: Pattern Recognition
Programming Assignment 3

Date: 09th October, 2015

Datasets:

Dataset : Real world data set:

(a) Image dataset

(b) Spoken digit dataset

Data of each class is given separately. For all data in Dataset, 75% of data of a class is to be used as training data for that class, and the remaining data is to be used as test data for that class.

Note: Each batch of students must use the datasets identified for that batch

Classifiers to be built:

1. Bayes classifier using *K*-nearest neighbour method for class-conditional density estimation using DTW distance.
2. Bayes classifier using Discrete HMM (DHMM)

Perform the experiments on different values of *K* in *K*-nearest neighbour method, different number of codebooks and states for DHMM.

Consider ergodic HMM for image dataset and left-to-right HMM for spoken digit dataset.

Report should include the results of studies presented in the following forms for each classifier and for each dataset:

1. Classification accuracy on test data
2. Confusion matrix based on the performance for test data

Report should also include your observations about the performance.

Deadline for submission: 04.00PM, Monday, 26th October 2015