Project 6
MAE 527 Intelligent CAD Interfaces
Spring 2016
Due May 5th

For this project, a database of US zip codes is provided ('zipcode_data'). Also, there are five mat files called 'data_1.mat' to 'data_5.mat' which contain the features vector ('Fi') and data points ('points') of five sketches representing digits of a zip code. Finally the weights of a Rubine classifier is given in 'W.mat' such that $S = w'*Fi + w0$ will calculate the score of all classes (0, 1 ,2 ,3 … 9).

Use this information to complete the following tasks:

1. Calculate the HMM parameters ( ) once considering all US zipcodes and once for state of NY

2. Using the provided Rubine's weights calculate the classification output (Only Rubine Classifier, No HMM)

3. Using the Viterbi algorithm classify the 5 digits as a US zipcode number (HMM model for All US States)

4. Using the Viterbi algorithm classify the 5 digits as a NY zipcode number (HMM model for only NY States) 5. Explain the results