IT 542: Pattern Recognition and Machine Learning

Assignment 2

1. Draw 200 samples each from N(10,20) and N(20,25).

From these samples calculate sample means and sample variances. Consider these as the parameters for two new Gaussian distributions. Consider the apriori probabilities as (0.5,0.5), (0.3,0.7) and (0.7,0.3).

Draw 40 random numbers from [5,20].

Classify each of these random numbers as sample from one of the two Gaussian distributions obtained from samples using three sets of apriori probabilities.

2. Check suitability of Naïve-Bayes classifier on IRIS data from UCI Machine Learning Repository. Consider 40 samples from each class as training data, use remaining 10 from each class as testing data. Repeat the experiment 10 times and calculate the average accuracy. Also find the corresponding apriori probabilities for the distribution.