CSE4214 Pattern Recognition Lab

Experiment No 1

Designing a Minimum Distance to Class Mean Classifier

Problem Description:

Two-class set of prototypes have to be taken from "train.txt" and "test.txt" files.

1. Plot all sample points (train data) from both classes, but samples from the same class should have the same color and marker.

2. Using a minimum distance classifier with respect to 'class mean', classify the test data points by plotting them with the designated class-color but a different marker. Use the Linear Discriminant Function given below. Also, plot the class means.

$$g_i(X) = X^T \bar{Y}_i - \frac{1}{2} \bar{Y}_i^T \bar{Y}_i$$

3. Draw the decision boundary between the two classes.
4. Find accuracy.

Marks Distribution:

Task	Mark
1	3
2	3
3	3
4	1

Sample Output: