

CSCE 509
Assignment 1
Spring 2019

DUE: WEDNESDAY 13 March 2019

Write Python code to

1. generate samples of two classes
 - a. Gaussian densities
 - b. class means $[1.0, -1.0]$ and $[-1.0, 1.0]$
 - c. variances $[1.0, 1.0]$ and $[1.3, 1.3]$
2. use 10,000 samples of 5,000 Class-0 and 5,000 Class-1 to train a Perceptron to classify the samples; report the separating line parameters; report the accuracy
3. use 10,000 samples of 9,000 Class-0 and 1,000 Class-1 to train a Perceptron to classify the samples; report the separating line parameters; report the accuracy
4. repeat steps 2 and 3 but use 10-fold cross-validation; report the average accuracies
5. repeat Step 4, use 10-fold cross-validation; report the precision and recall scores