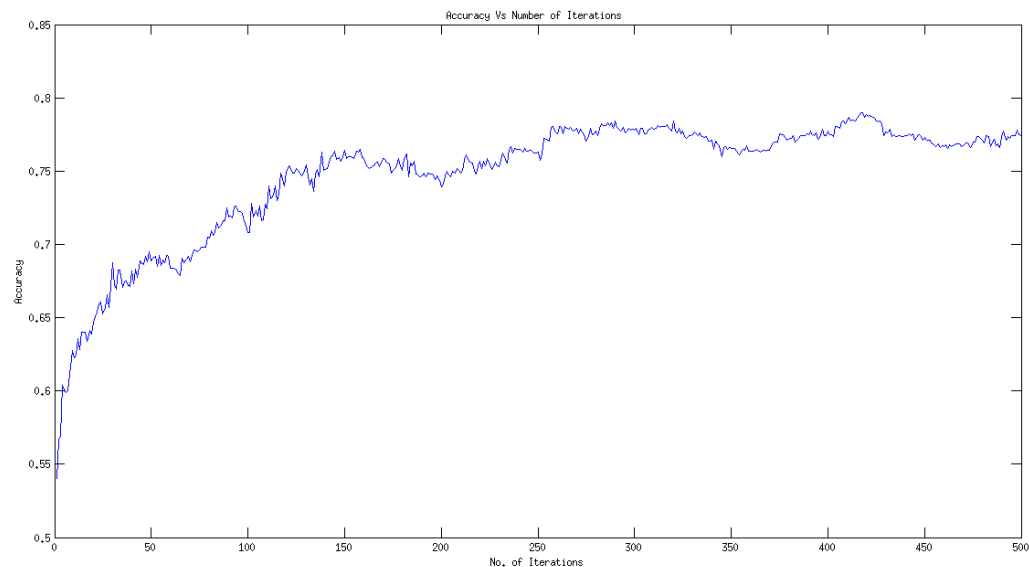


Machine Learning CSL-407

HW #5

Submitted by:
Rajeev Kumar (2011CS1031)
Vishwaas Batra(2011CS1079)

Question 1



Accuracy Vs Number of Iterations for Adaboost

Average Precision over 10 Fold = 0.869524

Average Recall over 10 Fold = 0.677273

Average Confusion Matrix

0.3650	0.1750
0.0550	0.4050

Fold wise Precision, Recall and confusion matrix are as follows:

- 1) Precision for fold no. 1 = 0.428571
Recall for fold no. 1 = 0.272727

Confusion matrix for fold no. 1

0.1500 0.4000

0.2000 0.2500

2) Precision for fold no. 2 = 1.000000

Recall for fold no. 2 = 1.000000

Confusion matrix for fold no. 2

0.5000 0

0 0.5000

3) Precision for fold no. 3 = 1.000000

Recall for fold no. 3 = 0.500000

Confusion matrix for fold no. 3

0.2500 0.2500

0 0.5000

4) Precision for fold no. 4 = 0.916667

Recall for fold no. 4 = 1.000000

Confusion matrix for fold no. 4

0.5500 0

0.0500 0.4000

5) Precision for fold no. 5 = 0.700000

Recall for fold no. 5 = 0.636364

Confusion matrix for fold no. 5

0.3500 0.2000

0.1500 0.3000

6) Precision for fold no. 6 = 1.000000

Recall for fold no. 6 = 0.636364

Confusion matrix for fold no. 6

0.3500 0.2000

0 0.4500

7) Precision for fold no. 7 = 1.000000

Recall for fold no. 7 = 0.636364

Confusion matrix for fold no. 7

0.3500 0.2000

0 0.4500

- 8) Precision for fold no. 8 = 0.750000
Recall for fold no. 8 = 0.545455
Confusion matrix for fold no. 8

0.3000 0.2500
0.1000 0.3500

- 9) Precision for fold no. 9 = 0.900000
Recall for fold no. 9 = 0.818182
Confusion matrix for fold no. 9

0.4500 0.1000
0.0500 0.4000

- 10) Precision for fold no. 10 = 1.000000
Recall for fold no. 10 = 0.727273
Confusion matrix for fold no. 10

0.4000 0.1500
0 0.4500

Question 2

Accuracies on using 1% of the target data

Accuracy on random fold no. 1 = 0.760000
Accuracy on random fold no. 2 = 0.700000
Accuracy on random fold no. 3 = 0.790000
Accuracy on random fold no. 4 = 0.500000
Accuracy on random fold no. 5 = 0.730000
Accuracy on random fold no. 6 = 0.670000
Accuracy on random fold no. 7 = 0.670000
Accuracy on random fold no. 8 = 0.820000
Accuracy on random fold no. 9 = 0.800000
Accuracy on random fold no. 10 = 0.810000
Average accuracy on 10 random folds = 0.725000

Accuracies on using 5% of the target data

Accuracy on random fold no. 1 = 0.910000
Accuracy on random fold no. 2 = 0.790000

Accuracy on random fold no. 3 = 0.730000
Accuracy on random fold no. 4 = 0.790000
Accuracy on random fold no. 5 = 0.930000
Accuracy on random fold no. 6 = 0.770000
Accuracy on random fold no. 7 = 0.760000
Accuracy on random fold no. 8 = 0.760000
Accuracy on random fold no. 9 = 0.800000
Accuracy on random fold no. 10 = 0.790000
Average accuracy on 10 random folds = 0.803000

Accuracies on using 10% of the target data

Accuracy on random fold no. 1 = 0.860000
Accuracy on random fold no. 2 = 0.770000
Accuracy on random fold no. 3 = 0.850000
Accuracy on random fold no. 4 = 0.880000
Accuracy on random fold no. 5 = 0.810000
Accuracy on random fold no. 6 = 0.850000
Accuracy on random fold no. 7 = 0.880000
Accuracy on random fold no. 8 = 0.890000
Accuracy on random fold no. 9 = 0.870000
Accuracy on random fold no. 10 = 0.840000
Average accuracy on 10 random folds = 0.850000

Accuracies on using 20% of the target data

Accuracy on random fold no. 1 = 0.870000
Accuracy on random fold no. 2 = 0.860000
Accuracy on random fold no. 3 = 0.880000
Accuracy on random fold no. 4 = 0.820000
Accuracy on random fold no. 5 = 0.850000
Accuracy on random fold no. 6 = 0.880000
Accuracy on random fold no. 7 = 0.900000
Accuracy on random fold no. 8 = 0.870000
Accuracy on random fold no. 9 = 0.920000
Accuracy on random fold no. 10 = 0.890000
Average accuracy on 10 random folds = 0.874000