Problem assignment 10

Problem 1. Bagging and Boosting

In this problem you will have an opportunity to experiment with the bagging and boosting approaches that let you combine multiple classification models into an ensemble with the hope that the ensemble will improve the classification performance.

You have received a bagging and boosting code that implements both schemes and lets you combine them with multiple classification models. The bagging and boosting function code is implemented in files: **Bag\_classifier.m and Boost\_classifier.m.** The inputs and outputs of these functions are the same.

**Part a.** Use the dataset in hw10 train.txt hw10 test.txt files (last columns are class labels) and the code provided to test and compare the performance of the base SVM model, the bagged SVM model and the boosted SVM model, and by reporting their the train and test errors.

**parta.m**

Using base model SVM, I have:

Error on training data: 0

Error on testing data: 0.1286

**Error from Bagging with T = 1:10**

train\_error\_T =

[ 0.1046 0.0950 0.0454 0.0519 0.0319 0.0327 0.0242 0.0292 0.0188 0.0165 ]

test\_error\_T =

[ 0.1964 0.1350 0.1679 0.1400 0.1436 0.1336 0.1529 0.1407 0.1386 0.1429 ]

