Course: Machine Learning
Course no. CAP6610
Instructor: LiMin Fu

Project: The Support Vector Machine Approach

SVMs (Support Vector Machines) are a robust learning and classification method developed by Vapnik and his research team. In this exercise, you will learn how to use the SVM tool called Libsvm, which is available at http://www.csie.ntu.edu.tw/ cjlin/libsvm. The program along with the README and copyright notice regarding this tool can be downloaded from the course web page (www.cise.ufl.edu/ fu/learn.html). The training and test data files are also downloaded from the same site. Read the document first to get yourself familiar with the use of the program. Both the program and the data were obtained from the public domain and for instructional use only.

To run the program, type

```
svm-train train-data
svm-predict train-data model output
```

Your tasks are

- Use train-data I to train the SVM and test the model accuracy on test-data.
- Use train-data II to train the SVM and test the model accuracy on test-data.
- Run the program using different kernel basis functions: radial, linear, and 3rd degree polynomial.
- Make a table showing performance comparison among ID3, Neural Networks, and SVMs in normal and noisy conditions. (Note: ID3 and neural networks results should be in the last two projects.)
- Make discussions