Hacker Dojo Machine Learning

Homework 6

Mike Bowles, PhD & Patricia Hoffman, PhD.

1) Use Random Forest to classify the sonar data. Use rpart to generate trees with a depth of one on randomly selected attributes. Use ridge regression to combine these trees to make predictions.

2) Use SVM regression to classify the sonar data. Create and plot a ROC curve for this classification method.

3) See if you can improve on regression-based classification of the iris data that we did in class. Classify the iris data set with second degree terms added using a ridge regression. (ie supplement the original 4 attributes x1, x2, x3, and x4 by including the 10 second degree terms (x1*x1, x1*x2, x1*x3, …) for a total of 14 attributes.) Use multiclass to classify the data and then compare the results with the results obtained in class.

4) Do exercise 2 in the book at the end of Chapter 6 (page 404)

5) Do exercise 12 in the book at the end of Chapter 6 (page 409)