EE6550 Machine Learning, Spring 2016

Homework Assignment #5 User Manual

102061210 王尊玄

1. Executing main.m gives output of cross validation, SVR predictor trained from entire yacht_training with chosen parameters, and its prediction over yacht_testing. Another program, test.m can be used to directly perform SVR training and predicting with given parameters without cross validation.
2. Parameters (with trailing ++++++++++):
   - nCross : in n-fold cross validation, nCross = n, may be 5 or 10.
   - kernelChoice : 1 for linear kernel, 2 for Gaussian kernel, 3 for polynomial kernel.
   - sigChoice : sigma used in Gaussian kernel, defaulted to [0.2 0.5 1.2], better not too big.
   - Cchoice : penalty coefficient in SVM or SVR method, defaulted to [1 4 10 20 50].
   - dChoice : power used in polynomial kernel, defaulted to [1 2 3 4 5]
   - normOrNot : 1 for applying min-max scaling in y, 0 for no normalization.
   - myEps : epsilon of SVR, set to be 1% of range of y.
   - tol : tolerance of SVR, set to be 1% of myEps.
3. There are 2 extra function to help looking into SVR method.
   - printdata(y_predict,y_test): print out every pair of y_predict and y_test.
   - drawPoints(x_test,y_predict,y_test): draw points showing relationship between y_predict and y_test. Graphs drawn can be found in my report.