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CS 498 - HW2

2/8/16

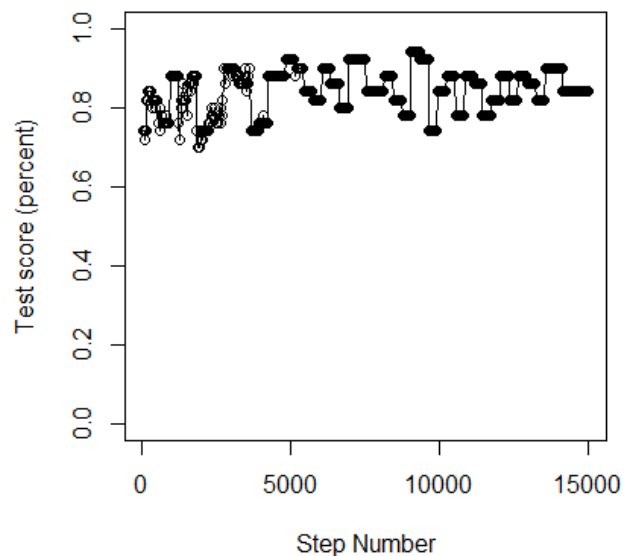
1. For me, altering step size (η) had a more positive effect on convergence than altering the regularization constant (γ). This is because while changing γ changes the constant rate of convergence, changing η allows convergence rate to be changed as a function of epoch number. This allows the algorithm to converge quickly and then only make small changes to ensure continued accuracy. The best combination I found was:

$$\gamma = .01, \eta = \frac{1}{10e + 50}$$

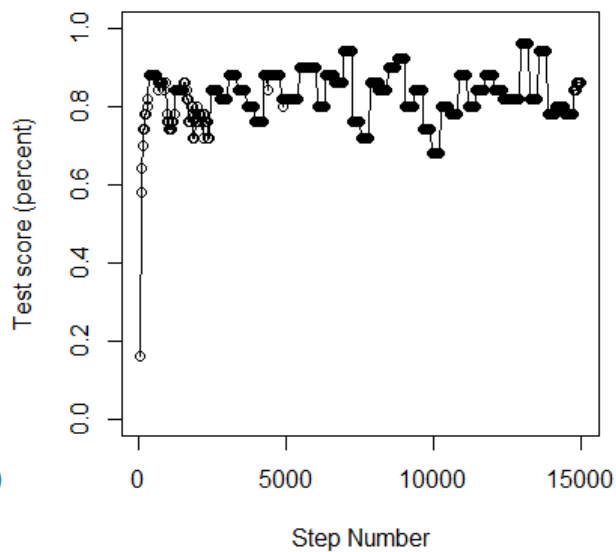
Where e is epoch number.

2. The classifier was correct 84.4% of the time on 10% test data.

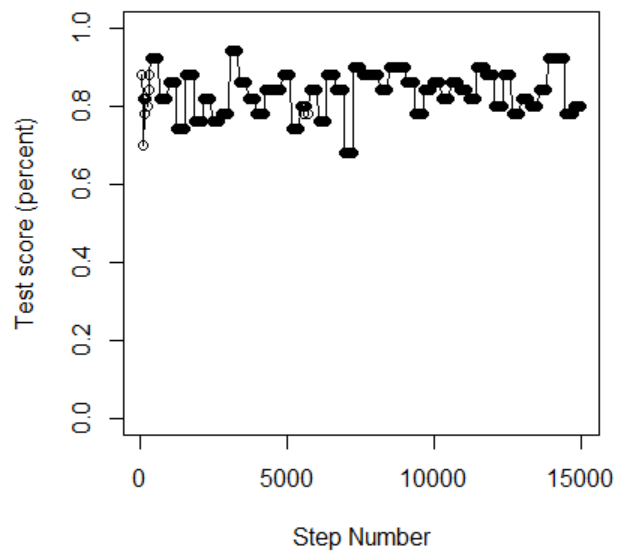
Results for SVM with lambda = 0.001



Results for SVM with lambda = 0.01



Results for SVM with lambda = 0.1



Results for SVM with lambda = 1

