

PS9_{patel.tex}

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5

What is the dimension of your training data (housing.train)?
404 ints because the dimension of housing.train is [1:404]

6

What is the optimal value of lambda?
0.00288.

What is the in-sample RMSE?
0.1881683.

What is the out-of-sample RMSE (i.e. the RMSE in the test data)?
0.2173507

7

What is the optimal value of lambda now?
0.00314.

What is the in-sample RMSE?
0.1899243.

What is the out-of-sample RMSE (i.e. the RMSE in the test data)?
0.1913142.

8

What are the optimal values of lambda and alpha after doing 6-fold cross validation?
0.00606.
0.582.

What is the in-sample RMSE?
0.2008356.

What is the out-of-sample RMSE?
s 0.1913142.

Does the optimal value of alpha lead you to believe that you should use LASSO or ridge regression for this prediction task?

9

Why you would not be able to estimate a simple linear regression model on the `housing.train` dataframe.

Using the RMSE values of each of the tuned models in the previous three questions, comment on where your model stands in terms of the bias-variance tradeoff.