

Problem Set 9

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1 LASSO

1.1 What is the optimal value of λ ?

0.0233

1.2 What is the in-sample RMSE?

0.187

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

0.149

2 Ridge Model

2.1 What is the optimal value of λ now?

0.0000000001

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

0.157

3 Additional Questions

3.1 Would you be able to estimate a simple linear regression model on a data set that had more columns than rows?

Given the high dimensionality of such a scenario, an overfitting of an equation would ensue and thus transition a linear model into an exponential model.

3.2 Bias-Variance Tradeoff

Judging by the lower out-of-sample RMSE of the two (Ridge), I would suppose that the Ridge is the better model in terms of the bias-variance trade-off.