

Problem Set 9

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April 2, 2019

1 L1

The optimal value of lambda: 0.0106.

The in-sample RMSE: 0.1786990.

The out-of-sample RMSE: 0.1563961.

2 L2

The new optimal value of lambda: 0.102.

The in-sample RMSE: 0.1584583.

The out-of-sample RMSE is also 0.1607604.

3 Elastic Net Model

Elastic optimal value of lambda: 0.0473.

The optimal value of alpha: 0.0939. The in-sample RMSE is 0.1621832.

Out-of-sample RMSE is 0.1605592.

Use LASSO regression. Can't use linear regression b/c data is non-linear.
RMSE values suggest low variance, high bias. Highest bias: Ridge, Lowest:
LASSO, In the Middle: Elastic Net