PS9$_N$ongard

nongarak

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1 6. LASSO

Result: lambda=0.0683 rmse.test.rmse=0.1599564 rmse out of sample: 0.165448

2 7. Ridge

Result: lambda=0.102 rmse.test.rmse=0.1575116 rmse out of sample: 0.1696113

3 8. elnet

Result: lambda=0.017 alpha=0.808 rmse.test.rmse=0.1635421 rmse out of sample: 0.1688394

The alpha of .8 is closer to 1, which means we should use LASSO, if chosing between the two.

4 9. summary

We cannot use a simple linear regression because we have variables that are confirmed to be 6th degree polynomials (because we made them that way). These variables are by definition not linear, and so any standard linear model would misrepresent them greatly.

The model has a relatively low RMSE of between .15 and .21, meaning that across all models the variance is low. RMSE does not say anything about bias, however.