

STATS 500 - Homework 8

Due Wednesday, November 29

Based on Problems 1-3., page 180-181 in Faraway

Using the seatpos data and using hipcenter as the response carry out the following analyses – no need in this exercise to carry out diagnostics, but rather concentrate on model selection and prediction MSE:

1. Linear regression with all predictors
2. Linear regression with variables selected using AIC
3. Principal component regression - using CV to pick order of model
4. Partial least squares - using CV to pick order of model
5. Ridge regression - using GCV to pick regularization parameter λ .
6. Lasso regression - using CV to pick regularization parameter t .

Make a report on the performance of these models - mainly derived from CV or GCV. This should even be carried out for the first two models of linear regression with all predictors and linear regression with variables selected by AIC.