STA302 Lec5101, Methods of Data Analysis 1
Module 10: Problem set

November 21, 2024

Problem.

Sheather: Chapter 6 - Exercise 5 and Chapter 7 - Exercise 3.
Use AIC/BIC for model selection using step but do not use R^2_{adj}, AIC_c. After this, perform backward selection with AIC as we discussed in lecture without using the step function to understand what the step function is doing.

Use leave-one-out cross-validation with backward selection to choose a model based on the smallest mean squared prediction error. You will have to work through this process without the step function. Compare the LOO MSE prediction error with the model chosen with AIC/BIC.

Load the data with R:

```
pga_data = read.csv("https://gattonweb.uky.edu/sheather/book/docs/datasets/pgatour2006.csv",
header = T)
```