Master BeNeFri in Computer Science

Course: Statistical Learning Methods with R
Spring 2022

Exercise #6: Model Evaluation with R

Recall the setting of Exercise #5.

1. Compare the two models (linear regression VS k-NN) for the Computers dataset (filename: Computers.txt) as it follows:

   a. Evaluate the quality of the fit (of the best model) between a single regression model of your choice and a multiple regression.

   b. Use the k-NN regression to build the second model, applying LOO or 10-fold cross-validation.

   c. Compare the best model in (a) and the k-NN model you defined in (b). Which model do you prefer? Why? What is/are the advantage(s) of your choice? What about the drawbacks?

2. Compare the two models (linear regression VS k-NN) for the Cars dataset (filename: Cars.txt) as it follows:

   d. Evaluate the quality of the fit (of the best model) between a single regression model of your choice and a multiple regression.

   e. Use the k-NN regression to build the second model, applying LOO or 10-fold cross-validation.

   f. Compare the best model in (d) and the k-nn model you defined in (e). Which model do you prefer? Why? What is/are the advantage(s) of your choice? What about the drawbacks?