Chapter 3 and 12 Simple Linear Regression

Setup: \( y = \) quantitative response var
\( x = \) quantitative predictor var

Least Squares Regression method -

- Compute and INTERPRET Slope and Intercept

- Scatterplots

- Correlation

- \( R^2 \) – compute and interpret

Model and Assumptions

- Parameters
- Estimators

ANOVA F test
- ANOVA table
- breakdown of variability

- T test for Slope

- CI for Slope

- PI and CI for response

Residuals

- Residual Plots, NPP
Chapter 13 Multiple Regression

Setup: \( y = \text{quantitative response var} \)
\[ x_1, x_2, \ldots, x_p = \text{several predictor variables, they don’t need to be quantitative} \]

Model

Assumptions

ANOVA Test

Individual Variable t tests

Order for testing coefficients

Dummy Variables

Quadratic Regression

Several Quantitative Predictors

Refining the Model

\( R^2 \) vs \( R^2 \) adjusted