Linear Regression

Other Linear Models

The standard linear model

$$Y = \beta_0 + \beta_1 X_1 + \cdots + \beta_p X_p + \epsilon$$

Ordinary least Square method, minimize RSS

$$RSS = e_1^2 + e_2^2 \ldots \ldots + e_n^2$$

Why look for alternatives

1. Prediction Accuracy
2. Model Interpretability

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Linear Regression

Other Linear Models

We will be discussing two types of methods

1. **Subset selection**

   Instead of training model on all variables, we will be using a subset of available variables

2. **Shrinkage method**

   We will try to regularize i.e. shrink the coefficient of some variables towards zero

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