

Linear Regression: Foundation & Challenges

Linear Regression
Minimizes Sum of Squared Errors

$$\hat{y} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n$$

Normal Equation
Solution



Gradient Descent
Optimization

Linearity

Independence

Homoscedasticity

Overfitting

Multicollinearity

Noise

Goal: Extend Linear Regression Capabilities