

Ridge and Lasso

Regularization

Ridge (L_2): $J(\theta) = \text{MSE}(\theta) + \alpha \frac{1}{2} \sum_{i=1}^n \theta_i^2$

$\alpha = 0 \Rightarrow$ Linear Regression

$\alpha = \infty \Rightarrow$ Weights are close To Zero

Lasso (L_1): $J(\theta) = \text{MSE}(\theta) + \alpha \sum_{i=1}^n |\theta_i|$

$\alpha = 0 \Rightarrow$ Linear Regression

$\alpha = \infty \Rightarrow$ weight are Zero

Scaling is Important