Regularization

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Review: Loss Functions

MINIMIZE:

$$\sum \Big(\overbrace{x_i - \hat{x}_i}^{\text{how off we were}}\Big)^2$$

true value

model's guess

Overfitting

Ridge

MINIMIZE:

$$\sum \left(\overbrace{x_i - \hat{x}_i}^{\text{how off we were}} \right)^2 + \lambda \sum B_j^2$$

true value

model's guess

how HARSHLY we penalize

how big the coefs are

LASSO

MINIMIZE:

$$\sum \overbrace{\left(x_i - \hat{x}_i\right)}^{\text{how off we were}}{}^{2} + \lambda \sum |B_j|$$

true value

model's guess

how HARSHLY we penalize

how big the coefs are

Ridge vs. LASSO