Recitation

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Computer and information Science

Learning Objectives

Generalized linear models and RBFs

Loss functions for non-parametric methods

Selection of loss functions

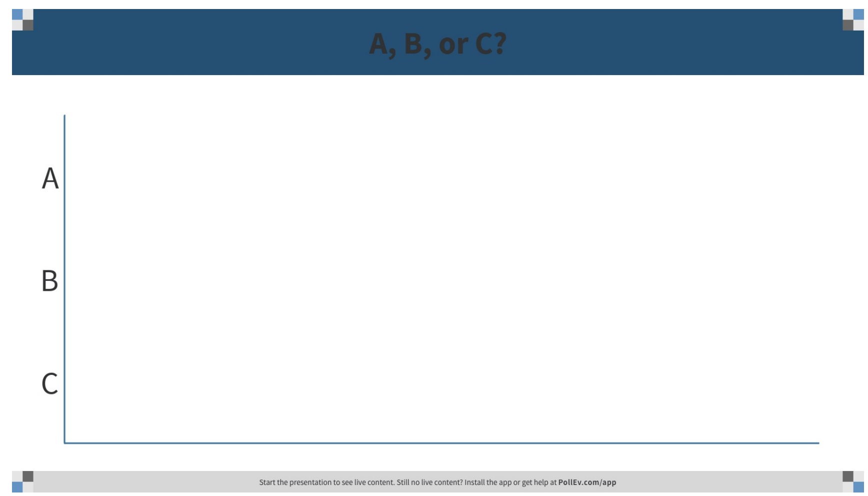
Selection of regression penalties

- Your training error for ridge regression is substantially lower than your testing error.
- You should

  a) increase λ

  b) decrease λ

  c) no change in λ



a)

Which model to use?

$y = \mathbf{x}^T \mathbf{w}$

Predict income based on age, sex, and country you were born in

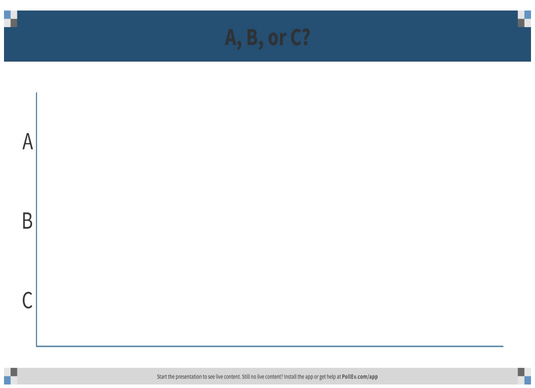
What exactly are **x** and y?

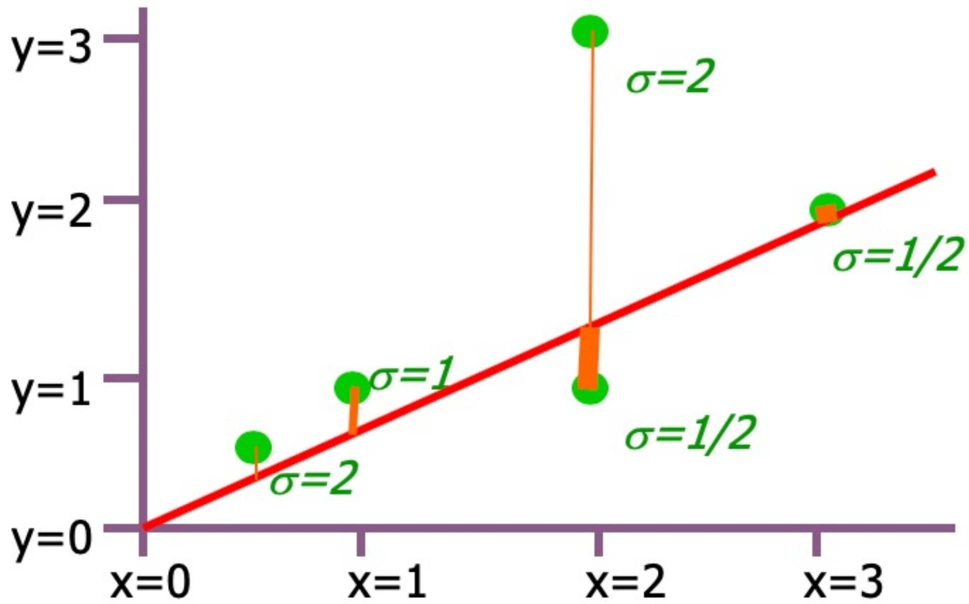
y: income
x age, sex, and a “one hot”” vector indicating birth country

Which loss function to use?

$\|y - Xw\|_p$

a) p=0
b) p=1
c) p=2





L1: data not Gaussian?

Which loss function to use?

You are writing a search algorithm that returns web pages as a function of the search query, the words on the web page the person is searching from, and the search history of that user.

You only care about getting a right answer among the top few. We'll cover this later in the course

What you should know

- Loss functions depend on the problem
- Basis functions allow one to fit a nonlinear function using linear regression
- Link functions give a nonlinear regression

How is my speed?