Advanced Statistical Methods
Homework 5

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Overview

1. Q1A: Issues/mistakes with cross-validation

2. Q1B: Issues/mistakes with bootstrap?

3. Q2: Hastie and Tibshirani Summary

Issues/mistakes with cross-validation

Bayes' Theorem

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)}$$

Issues/mistakes with cross-validation

Bayes' Theorem

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)}$$

Bayes' Theorem Generalized

$$P(C_k|x_1, \ldots, x_n) = P(C_k) \prod_{i=1}^{n} \frac{P(x_i|C_k)}{P(x_i)}$$

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Example:

$F1 = 2 \cdot \frac{precision \cdot recall}{precision + recall}$

Note:

This is the Harmonic mean of Precision and Recall

Tibshirani Lecture: Resampling Methods

Testing the accuracy of our model.
The goal is to minimize testing error: