Measuring Classification Performance

- Measure of classification performance is

error rate $=$ fraction of points that are classified incorrectly

- The **training error rate** is

$$\text{training error} = \frac{1}{n} \sum_{i=1}^{n} I(\hat{y}_i \neq y_i)$$

- The (expected) **test error rate** is given by $\mathbf{E}\left(I(\hat{Y}_0) \neq Y_0 \right)$

- We have to construct $\hat{f}$ to **minimize the test error rate**

$\implies$ we need a **loss function** $L(\hat{y}, y)$ for penalizing errors in $\hat{y} = \hat{f}(x)$ when truth is y

- Strongly contingent on application

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This Week's Practical

Continuing various classification methods and evaluating performance…