

# STAT593: Robust Statistics

or... an introduction to Beamer instead

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## Introduction

- A first example

- A second example

## Conclusion

# Display a theorem and talk about it

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**Theorem**

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$$a^2 + b^2 = c^2$$

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Here, the response vector  $Y$  is **qualitative**.

**Example:**  $\mathcal{Y} = \{\text{spam}, \text{ham}\}$  (ham=correct e-mail) or  
 $\mathcal{Y} = \{0, 1, \dots, 9\}$ .

The objective could be

- ▶ create a classifier  $\phi(x)$  that maps  $x$  to one of the classes in  $\mathcal{Y}$

# Double column when needed

**Bayes classifier is** optimal

$$\phi^*(x) = \arg \max_{y \in \mathcal{Y}} P(Y = y | X = x)$$

for the loss  $l(y, y') = 1_{y \neq y'}$ .



One can always use  $\hat{\phi}(x)$ .

Alternatives:

- ▶ logistic regression / LDA
- ▶ GAM
- ▶ SVM

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But note that

is also possible

and is simple to use. And a common issue is not using the percentage symbol (%) enough !

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- **Joseph Salmon :**
  - ▶ current situation: Professor at Université de Montpellier

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# Bibliographie

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