# Logistic Regression
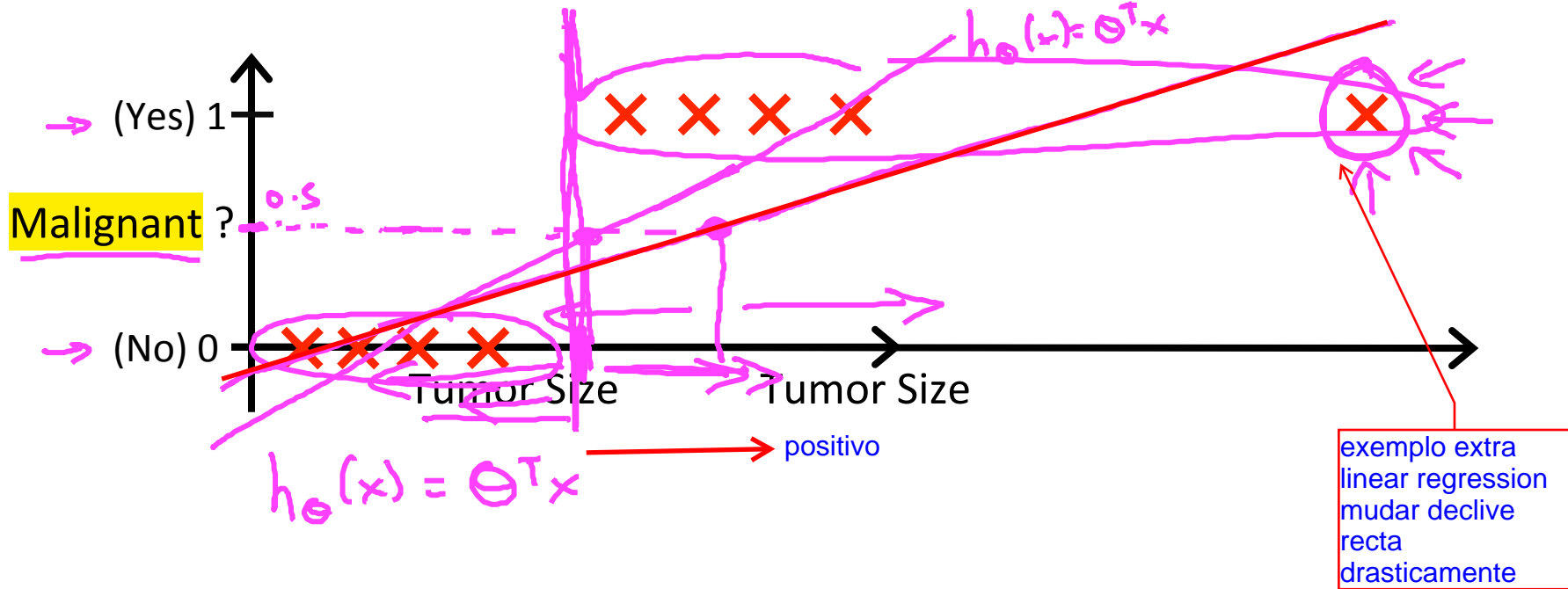
# Classification

Machine Learning

**Classification**

Email: Spam / Not Spam?

Online Transactions: Fraudulent (Yes / No)?

Tumor: Malignant / Benign ?

$$y \in \{0, 1\}$$

0: "Negative Class" (e.g., benign tumor)

1: "Positive Class" (e.g., malignant tumor)

$$y \in \{0, 1, 2, 3\}$$

**Threshold** classifier output $h_\theta(x)$ at 0.5:

If $h_\theta(x) \geq 0.5$, predict "y = 1"

If $h_\theta(x) < 0.5$, predict "y = 0"

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Classification:  $y = 0$ or $1$

$h_\theta(x)$ can be $> 1$ or $< 0$

Logistic Regression:  $0 \leq h_\theta(x) \leq 1$

Classification

fica sempre entre 0 e 1