Si h es un modelo constante $\boxed{h} \longrightarrow$ azul

accuracy = 98 %

accuracy = tasa de predicciones correctas

$$acc = \frac{TP + TN}{TP + FP + FN + TN}$$

Si h es un modelo constante $\boxed{h} \longrightarrow$ azul

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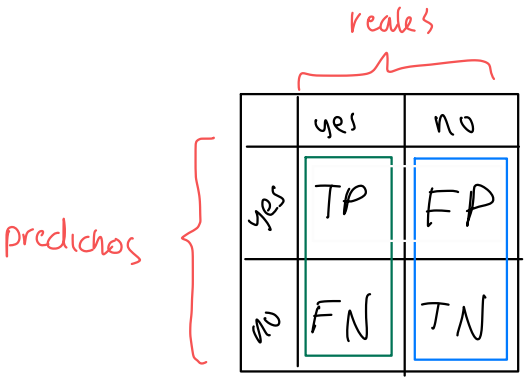
$$acc = \frac{TP + TN}{TP + FP + FN + TN}$$

MATRIZ DE CONFUSIÓN

predichos \ reales	yes	no
yes	TP	FP
no	FN	TN

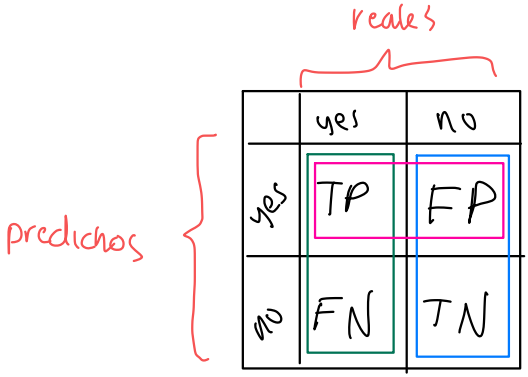


$$\text{Sensitivity} = \frac{TP}{TP + FN}$$

$$\text{Specificity} = \frac{TN}{FP + TN}$$

$$\text{Sensitivity} = \text{recall}$$

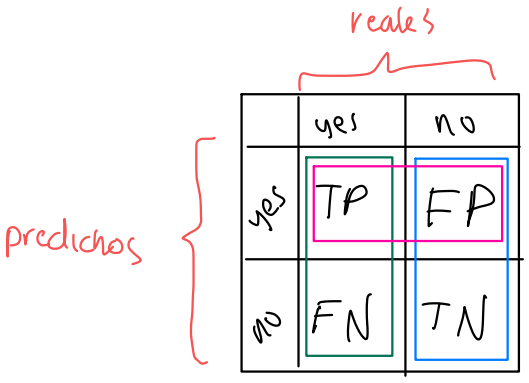
La paradoja de los falsos positivos...



$$\text{Sensitivity} = \frac{TP}{TP + FN}$$

$$\text{Specificity} = \frac{FP}{FP + TN}$$

$$\text{Precision} = \frac{TP}{TP + FP}$$



$$\text{Sensitivity} = \frac{TP}{TP + FN}$$

$$\text{Specificity} = \frac{FP}{FP + TN}$$

$$\text{Precisión} = \frac{TP}{TP + FP}$$

Combinándolas:

$$F = \frac{2 \cdot \text{precision} \cdot \text{recall}}{\text{precision} + \text{recall}}$$

más general

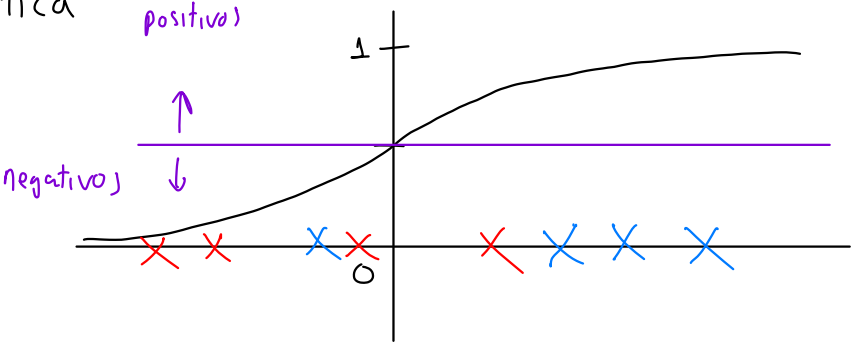
$$F_\beta = \frac{(1+\beta^2) \cdot \text{precision} \cdot \text{recall}}{\beta^2 \,\text{precision} + \text{recall}}$$

$\beta = 1$

$$\text{G-mean} = \sqrt{\text{Sensitivity} \cdot \text{Specificity}}$$

Cuando el clasificador predice una probabilidad de pertenecer a una clase

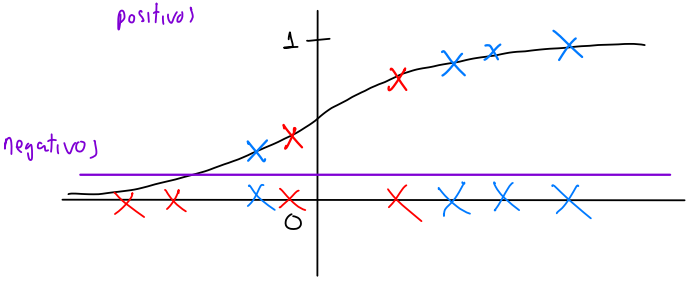
Ej: Regresión logística



Conf. Matrix

3	1
1	3

4	2
0	2

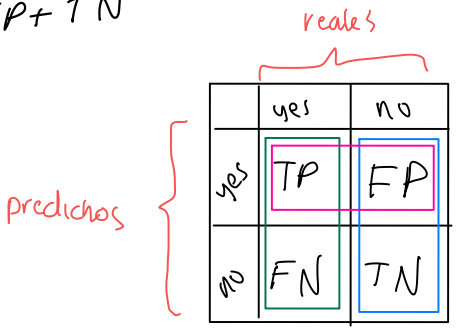


ROC (Receiver Operating Characteristic)

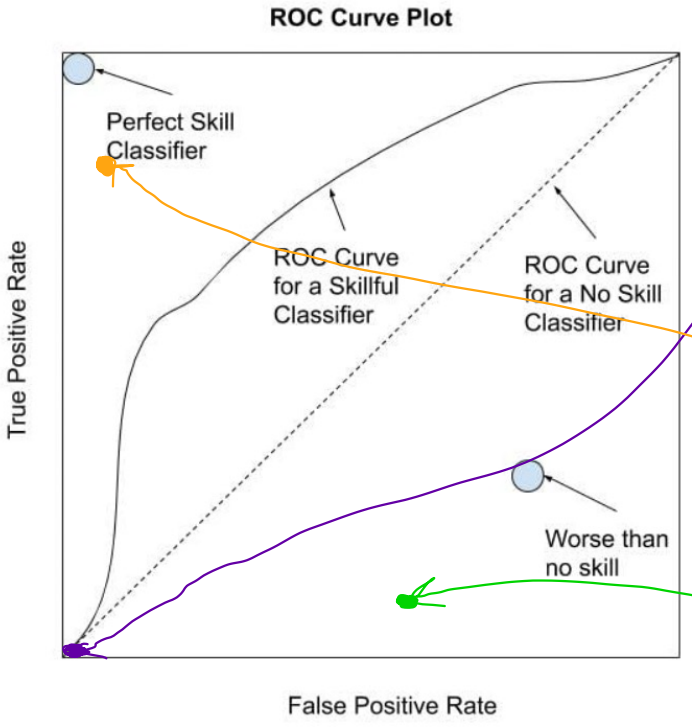
Gráfica que resume el comportamiento de un modelo al mostrar la tasa de falsos positivos y la tasa de verdaderos positivos con respecto a diferentes umbrales

$$\text{True positive rate } (TPR) = \text{recall} = \text{sensitivity} = \frac{TP}{TP+FN}$$

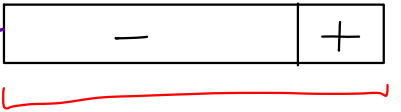
$$\text{False positive rate } (FPR) = 1 - \text{specificity} = \frac{FP}{FP+TN}$$



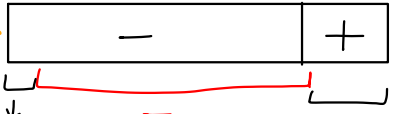
ROC Curve



Predicción negativa siempre

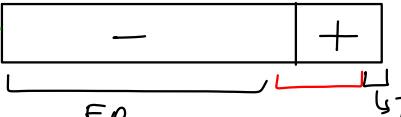


FPR = 0 TPR = 0



FP TP TPR alta

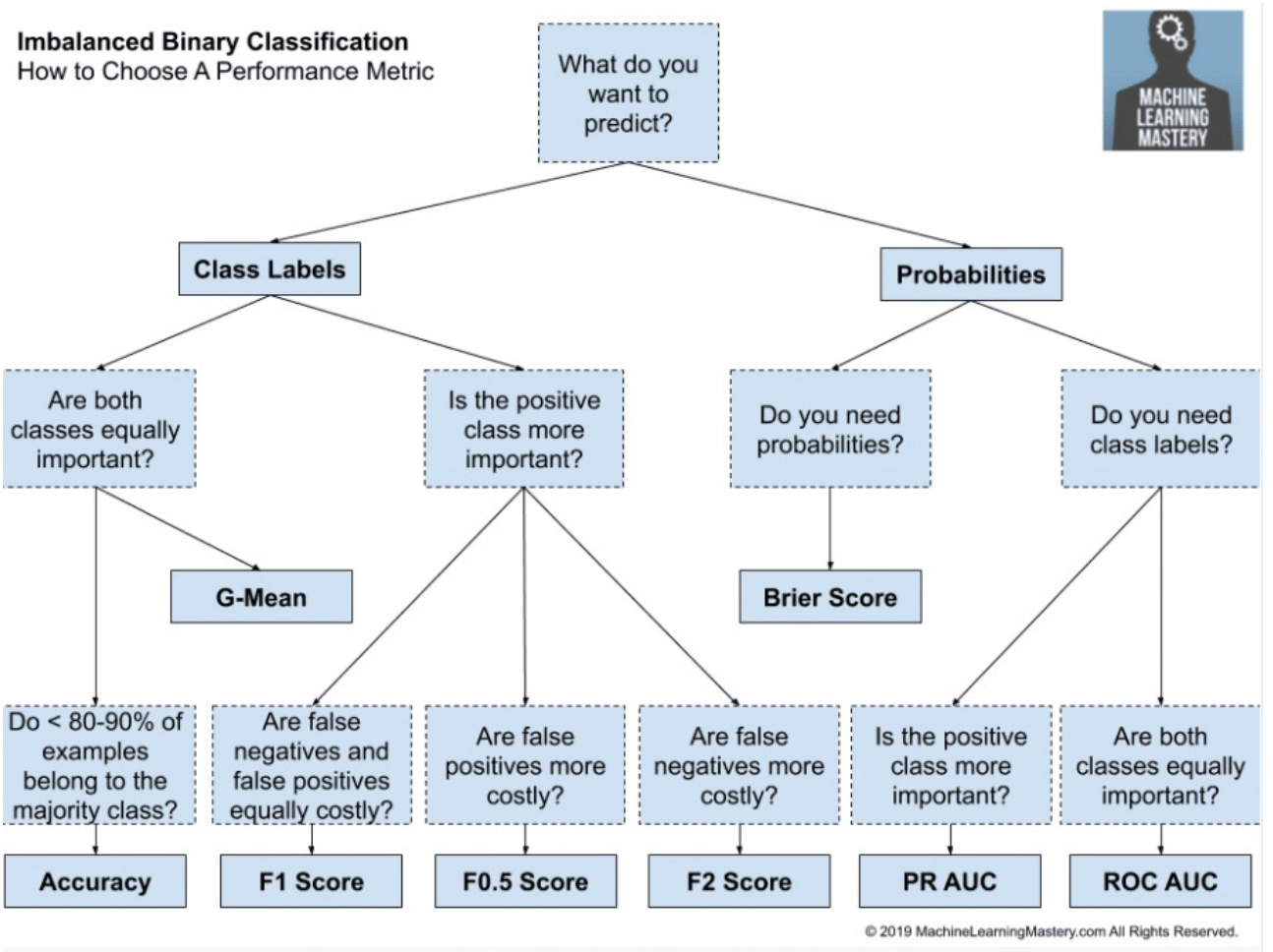
FPR baja



FP TP

FPR alta TPR baja

AUC: Area under the (ROC) curve



How to Choose a Metric for Imbalanced Classification