Skin cancer

Tuesday, 1 June 2021 5:01 PM

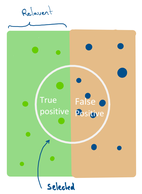
I. Percision

Quality

Recall

Sensitivity

Quantity



How many selected items are relevant?

Percision =

How many relevant items are selected

Recall =

Type I Error & Type II Error

Rejection of a true finding
False positive

Non rejection of a false finding
False negative

II. Sensitivity & Specificity

Sensitivity : Of all the people with cancer how many were correctly classified

Specificity: Of all the people without cancer how many were correctly classified

Recall : Of all the people who have cancer how many did we classify as having cancer

Percision : Of all the people we diagnosed with cancer how many actually had cancer

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

Recall = $\frac{TP}{TP+FN}$

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

Percision = $\frac{TP}{TP+FP}$

III. ROC curves

→ Receiver operating characteristic curve

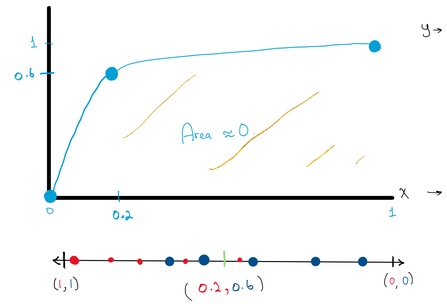
↑ Way of evaluating a model

	ROC value	
Perfect split	1	high
Good split	0.8	Mid
Random split	0.5	low

data in 1D

Graphing

1. Good split



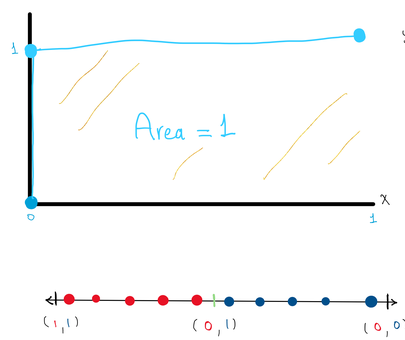
y → ★ True Positive Rate = $\frac{TP}{TP+FN}$ → $\frac{\text{True Positives}}{\text{all Positives}}$ Sensitivity

$= \frac{3}{5} = 0.6$

★ False Positive Rate = $\frac{FP}{FP+TN}$ → $\frac{\text{False Positives}}{\text{All Negatives}}$

$= \frac{1}{5} = 0.2$

2. Perfect split

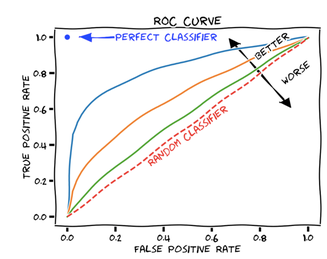


y → ★ True Positive Rate = $\frac{TP}{TP+FN}$ Sensitivity

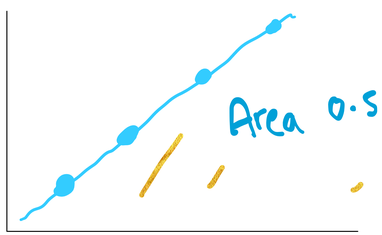
$= \frac{5}{5} = 1$

★ False Positive Rate = $\frac{FP}{FP+TN}$

$= \frac{0}{5} = 0$



3. Random



will be line