Getting Started with Machine Learning

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Score evaluation of Classification Algorithms.

Confusion Matrix

Precision and Recall

F1 Score

Accuracy Score

In this tutorial :

- Confusion Matrix
- Implementation

So what is Confusion Matrix ?

In the field of machine learning and specifically the problem of statistical classification, a confusion matrix, also known as an error matrix, is a specific table layout that allows visualization of the performance of an algorithm, typically a supervised learning one.

Source : https://en.wikipedia.org/wiki/Confusion_matrix

In easy words, It is the graphical representation of differences in actual values and predicted values.

So it requires 4 building blocks :

True Positives

True Negatives

False Positives

False Negatives

True Positives :

This is case where the actual positive value and predicted positive values are same.

True Negatives :

This is case where the actual negative values and predicted negative values are same.

False Positives :

This is case where we have actual negative values and predicted positive values.

False Negatives :

This is case where we have actual positive values and predicted negative values.

		PREDICTED	
		POSITIVE	NEGATIVE
ACTUAL	POSITIVE	TRUE POSITIVE	FALSE NEGATIVE
	NEGATIVE	FALSE POSITIVE	TRUE NEGATIVE

Y	Predicted Y (Sigmoid)	After Applying Threshold
0	0.4725	0
0	0.5377	1
0	0.5700	1
1	0.7048	1
1	0.6477	1
1	0.7680	1

Y	Predicted Y (Sigmoid)	After Applying Threshold
0	0.4725	0
0	0.5377	1
0	0.5700	1
1	0.7048	1
1	0.6477	1
1	0.7680	1

True Positives = 3

Y	Predicted Y (Sigmoid)	After Applying Threshold
0	0.4725	0
0	0.5377	1
0	0.5700	1
1	0.7048	1
1	0.6477	1
1	0.7680	1

True Positives = 3
True Negatives = 1

Y	Predicted Y (Sigmoid)	After Applying Threshold
0	0.4725	0
0	0.5377	1
0	0.5700	1
1	0.7048	1
1	0.6477	1
1	0.7680	1

True Positives = 3
True Negatives = 1
False Positives = 2

Y	Predicted Y (Sigmoid)	After Applying Threshold
0	0.4725	0
0	0.5377	1
0	0.5700	1
1	0.7048	1
1	0.6477	1
1	0.7680	1

True Positives = 3
True Negatives = 1
False Positives = 2
False Negatives = 0

		PREDICTED	
		POSITIVE	NEGATIVE
ACTUAL	POSITIVE	3	0
	NEGATIVE	2	1