



Evaluation Metrics for Model Performance

Classification Metrics

Some of the popular evaluation metrics for classification problems are:

- Confusion Matrix
- Accuracy
- Precision
- Recall
- F1 Score
- AUC-ROC



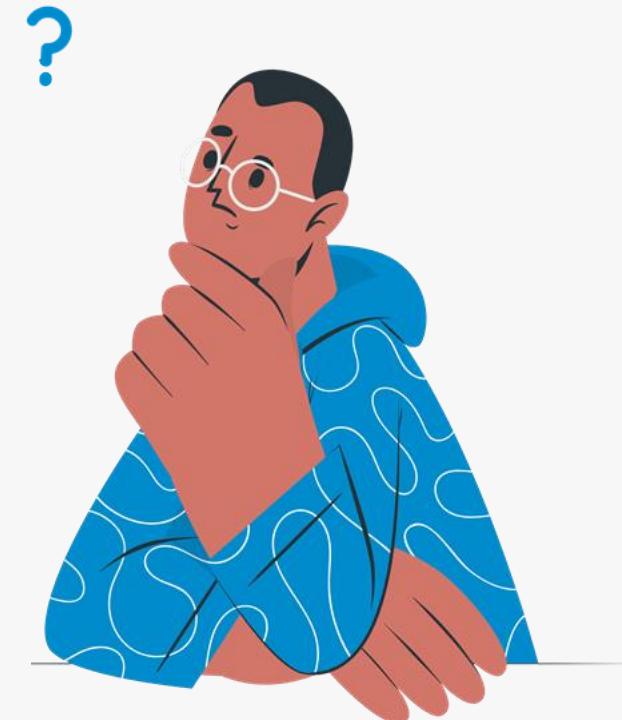


Confusion Matrix

Confusion Matrix

Confusion Matrix is a NxN table that helps evaluate a machine learning model's performance by comparing its predictions to actual values, with rows and columns representing classes.

Confusion Matrix		Predicted value	
		NO	YES
Actual value	NO	<i>True Negative - x (TN)</i>	<i>False Positive - a (FP)</i>
	YES	<i>False Negative - y (FN)</i>	<i>True Positive - b (TP)</i>



Confusion Matrix

A confusion matrix for Synergix to predict whether a product sells more than 1000 units or not.

Confusion Matrix		Predicted value	
		NO (Units_sold<1000)	YES (Units_sold>1000)
Actual value	NO (Units_sold<1000)	True Negative - 1500 (TN)	False Positive - 854 (FP)
	YES (Units_sold>1000)	False Negative - 1036 (FN)	True Positive - 2500 (TP)



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Confusion Matrix		Predicted value		Class 0 (Negative Class)	Class 1 (Positive Class)	
		NO (Units_sold < 1000)	YES (Units_sold > 1000)			
Actual value	NO (Units_sold < 1000)	True Negative - 1500 (TN)	False Positive - 854 (FP)			
	YES (Units_sold > 1000)	False Negative - 1036 (FN)	True Positive - 2500 (TP)			

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TP + TN = Total number of correct predictions

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$FP + FN = \text{Total number of incorrect predictions}$



Which should we try to minimize?
False Positives or False Negatives?

JUPYTER