

# Introduction to evaluating binary classifiers: Takeaways



by Dataquest Labs, Inc. - All rights reserved © 2019

## Concepts

- Prediction accuracy is the simplest way to determine the effectiveness of a classification model. Prediction accuracy can be calculated by the number of labels correctly predicted divided the total number of observations:
- A discrimination threshold is used to determine what labels are assigned based on their probability. Scikit-learn sets the discrimination threshold to 0.5 by default when predicting labels.
  - For example, if the predicted probability is greater than 0.5, the label for that observation is 1. If it is less than 0.5, the label for that observation is 0.
- There are four different outcomes of a binary classification model:
  - True Positive: The model correctly predicted the label as positive.
  - True Negative: The model correctly predicted the label as negative.
  - False Positive: The model falsely predicted the label as positive.
  - False Negative: The model falsely predicted the label as negative.
- Sensitivity, or True Positive Rate, is the proportion of labels that were correctly predicted as positive. Mathematically, this is written as:
  - Sensitivity helps of answer "How effective is this model at identifying positive outcomes?"
- Specificity, or True Negative Rate, is the proportion of of labels that were correctly predicted as negative. Mathematically, this is written as:
  - Specificity helps us answer "How effective is the model at identifying negative outcomes?"

## Resources

- [Sensitivity and Specificity](#)
- [Discrimination threshold](#)



Takeaways by Dataquest Labs, Inc. - All rights reserved © 2019