Evaluating Logistic Regression Models: Takeaways

Syntax

- Calculate the accuracy of the model predictions:

```
from sklearn.metrics import accuracy_score
accuracy_score(true_classes, predicted_classes)
```

- Predict the class labels using the logistic regression:

```
predictions = model.predict(X)
accuracy_score(y, predictions)
```

Concepts

- Accuracy measures the percentage of observations that had the correct prediction:
  $\text{Accuracy} = \frac{\#\text{ Correct Predictions}}{\#\text{ Observations}}$
- Sensitivity measures the percentage of `1` labels that were correctly identified as such:
  $\text{Sensitivity} = \frac{\#\text{ True Positives}}{\#\text{ True Positives} + \#\text{ False Negatives}}$
- Specificity measures the percentage of `0` labels that were correctly identified as such:
  $\text{Specificity} = \frac{\#\text{ True Negatives}}{\#\text{ True Negatives} + \#\text{ False Positives}}$
- Positive predictive value measures the percentage of `1` predictions that were actually `1` labels:
  $\text{PPV} = \frac{\#\text{ True Positives}}{\#\text{ True Positives} + \#\text{ False Positives}}$
- Negative predictive value measures the percentage of `0` predictions that were actually `0` labels:
  $\text{NPV} = \frac{\#\text{ True Negatives}}{\#\text{ True Negatives} + \#\text{ False Negatives}}$

Resources

- More on Binary Classification Metrics