Classification

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Estimated module length: 70 minutes

Learning objectives

- Determine an appropriate threshold for a binary classification model.
- Calculate and choose appropriate metrics to evaluate a binary classification model.
- Interpret ROC and AUC.

Prerequisites:

This module assumes you are familiar with the concepts covered in the following modules:

- Introduction to Machine Learning
- Linear regression
- Logistic regression

In the Logistic regression module, you learned how to use the **sigmoid function** to convert raw model output to a value between 0 and 1 to make probabilistic predictions—for example, predicting that a given email has a 75% chance of being spam. But what if your goal is not to output probability but a category—for example, predicting whether a given email is "spam" or "not spam"?

Classification is the task of predicting which of a set of **classes** (categories) an example belongs to. In this module, you'll learn how to convert a logistic regression model that predicts a probability into a **binary classification** model that predicts one of two classes. You'll also learn how to choose and calculate appropriate metrics to evaluate the quality of a classification model's predictions. Finally, you'll get a brief introduction to **multi-class classification** problems, which are discussed in more depth later in the course.

Key terms:

- Binary classification
- Class
- Classification
- Multi-class classification
- Sigmoid function

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