What is the difference between supervised and unsupervised learning in machine learning?

The main distinction between the two approaches is the use of labeled datasets. To put it simply, supervised learning uses labeled input and output data, while an unsupervised learning algorithm does not.

Other key differences between supervised and unsupervised learning?

Goals: In supervised learning, the goal is to predict outcomes for new data. You know up front the type of results to expect. With an unsupervised learning algorithm, the goal is to get insights from large volumes of new data.

Applications: Supervised learning models are ideal for spam detection, sentiment analysis, weather forecasting and pricing predictions, among other things.

Complexity: Supervised learning is a simple method for machine learning, typically calculated through the use of programs like R or Python. In unsupervised learning, you need powerful tools for working with large amounts of unclassified data.

Drawbacks: Supervised learning models can be time-consuming to train, and the labels for input and output variables require expertise.