

Multilabel Classification:

Multilabel classification is a type of classification task in machine learning where an instance (such as a document or an image) can belong to multiple classes or categories simultaneously. In other words, instead of assigning a single label to an instance, you can assign multiple labels to it. Each label represents a different category, and an instance can be associated with any combination of these categories.

This approach is used when there is overlap or ambiguity in the classes that instances can belong to. For example, in text classification, a document may be relevant to multiple topics. Multilabel classification is also employed in image recognition, where an image may contain objects of various types.

The goal of multilabel classification is to predict the set of labels that best describes each instance. It offers a more nuanced and flexible way to model complex relationships in data where instances may exhibit multiple characteristics simultaneously.