UNSUPERVISED LEARNING

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Unsupervised learning is a type of machine learning that does not use labeled data to train a model. Instead, it tries to find patterns and structures in the data without any explicit guidance or instruction. Unsupervised learning is often used for tasks such as clustering, dimensionality reduction, and anomaly detection.

Some examples of unsupervised learning are:

- Customer segmentation: The model is trained on a set of customer data that does not have any labels or categories. The model learns to group the customers based on their similarities, such as their preferences, behavior, or demographics. The model can then identify different segments of customers and tailor marketing strategies accordingly.
- Topic modeling: The model is trained on a set of text documents that do not have any labels or topics. The model learns to discover the latent topics that are present in the documents, such as sports, politics, or entertainment. The model can then assign a topic to each document and summarize the main themes of the text.
- Outlier detection: The model is trained on a set of data that does not have any labels or anomalies. The model learns to find the normal distribution of the data and detect any deviations or outliers that do not fit the pattern. The model can then flag the outliers and alert the user for further investigation.

Unsupervised Learning Diagram