SUPERVISED LEARNING

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Supervised learning is a type of machine learning that uses labeled data to train a model that can make predictions or classifications. Labeled data is data that has a known or desired output, such as the name of an object in an image or the category of a text. The model learns from the input-output pairs and adjusts its parameters to minimize the error between its predictions and the actual outputs. The trained model can then be applied to new, unlabeled data to make predictions or classifications.

Some examples of supervised learning are:

- Spam detection: The model is trained on a set of emails that are labeled as spam or not spam. The model learns to identify features that indicate spam, such as certain words, links, or attachments. The model can then classify new emails as spam or not spam.
- Image recognition: The model is trained on a set of images that are labeled with the name of the object they contain, such as cat, dog, or car. The model learns to extract features that distinguish different objects, such as shape, color, or texture. The model can then recognize new images and label them with the name of the object they contain.
- Regression: The model is trained on a set of data that has a continuous output value, such as the price of a house or the temperature of a city. The model learns to find the relationship between the input variables and the output value. The model can then predict the output value for new input data.

Diagram of Supervised Learning