General AI/ML

Unit 1: Intro to AI, ML and DL

1.1.2

General Introduction

Supervised vs Unsupervised learning

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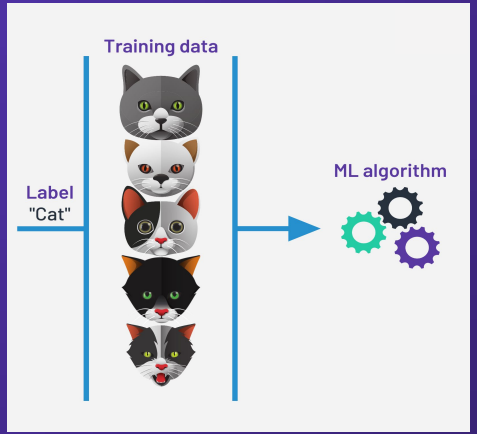
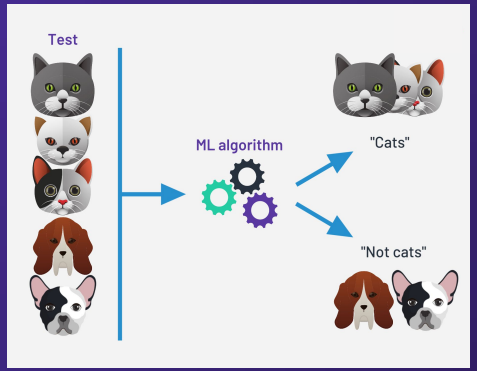
Supervised Learning: Learning with Labelled Data

- Supervised learning involves training a model using labeled data
- This data consists of inputs and corresponding desired outputs
- The model learns the mapping between inputs and outputs, enabling it to make predictions for new, unseen data





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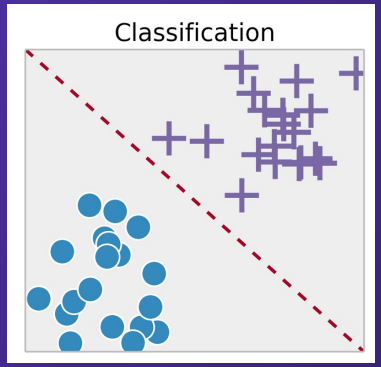
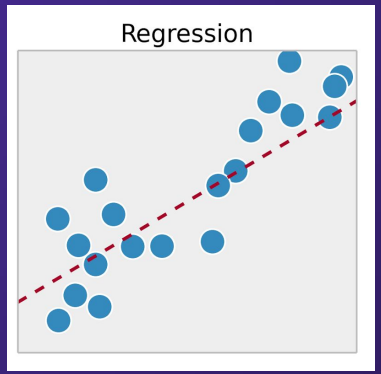
Supervised Learning: Learning with Labelled Data

- Supervised learning excels at two common types of tasks:
  - Classification - target prediction is categorical value(s)
    - eg. spam email filtering, image recognition (classifying an image as a cat or dog), and sentiment analysis (identifying positive or negative opinions in text)
  - Regression - target prediction is a continuous value
    - eg. house prices or weather forecasts





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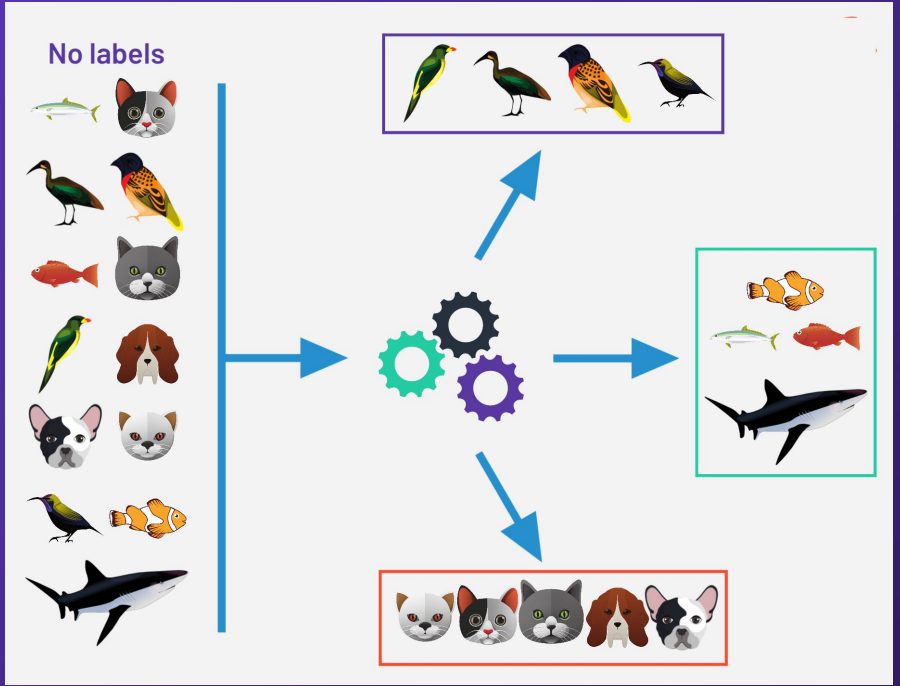
Unsupervised Learning: Unlabelled Data

- Unsupervised learning deals with unlabeled data, where the data has no predefined categories or labels
- The goal is to uncover hidden patterns or structures within the data



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Applications of Unsupervised Learning

- Customer segmentation: Unsupervised learning can group customers based on purchase history or demographics, aiding in targeted marketing strategies
- Anomaly detection: Identifying unusual patterns in data, such as fraudulent credit card transactions
- Recommendation systems: Recommending products or services to users based on their past behavior or preferences

Choosing the Right Tool for the Job

- Supervised learning excels at tasks with labeled data and defined categories
- Unsupervised learning tackles unlabeled data, uncovering hidden patterns and structures
- The best approach depends on the nature of your data and the problem you're trying to solve