Machine Learning

Types of Machine Learning

1. Supervised Learning

- Uses labeled datasets to train algorithms
- Predicts outcomes based on labeled data

Techniques:

- **Classification:** Categorizes data into predefined categories (e.g., **customer retention prediction**)
- **Regression:** Predicts continuous values (e.g., **flight pricing**)

2. Unsupervised Learning

- Analyzes unlabeled datasets to discover hidden patterns
- Does not require human intervention

Techniques:

- **Clustering:** Groups similar data points together (e.g., **customer segmentation**)
- **Dimensionality Reduction:** Reduces the number of input variables in a dataset

3. Reinforcement Learning

- Agents learn by interacting with an environment
- Receives rewards or punishments for actions

Example:

- Self-driving cars learn to navigate by avoiding collisions and following speed limits

Applications of Machine Learning in the Real World

- Customer retention
- Flight pricing
- Customer segmentation
- Self-driving cars