Introduction to Machine Learning

Machine learning is a subset of artificial intelligence that focuses on enabling machines to learn from data and improve over time without being explicitly programmed.

There are three main types of machine learning:

1. Supervised Learning: The model is trained on labeled data.

2. Unsupervised Learning: The model finds patterns in unlabeled data.

3. Reinforcement Learning: The model learns through trial and error by receiving rewards or penalties.

Supervised learning algorithms include decision trees, support vector machines, and neural networks. Common applications are spam detection, image classification, and medical diagnosis.

Unsupervised learning algorithms like clustering and dimensionality reduction techniques are used for customer segmentation and anomaly detection.

Reinforcement learning is widely used in robotics, gaming, and self-driving cars.

Conclusion:

Machine learning plays a vital role in modern technology and industries by enabling data-driven decision-making and automation.