Machine learning is a branch of artificial intelligence that focuses on building algorithms capable of learning patterns from data. These algorithms are designed to make predictions or decisions without being explicitly programmed. Machine learning techniques can be broadly categorized into supervised learning, unsupervised learning, and reinforcement learning.

Supervised learning relies on labeled datasets, where the algorithm learns from example input-output pairs. Unsupervised learning, on the other hand, identifies patterns in data without predefined labels. Reinforcement learning involves training an agent to make sequences of decisions by rewarding desirable actions and penalizing undesirable ones.

The applications of machine learning span various industries, including healthcare, finance, and self-driving vehicles. In healthcare, it aids in diagnosing diseases and personalizing treatments. In finance, machine learning is used for fraud detection, algorithmic trading, and credit risk assessment. In self-driving vehicles, it helps process sensor data to make real-time driving decisions.