Machine Learning is a subfield of Artificial Intelligence (AI) that enables computers to learn from data without being explicitly programmed. In traditional programming, a computer is given a set of rules to follow, but in machine learning, the computer learns from the data and improves its performance over time.

Machine learning involves training models on data, which can be in the form of images, text, audio, or sensor readings. The goal is to make predictions or take actions based on the input data. There are three types of machine learning:

1. **Supervised Learning**: The model is trained on labeled data, where the correct output is already known. The goal is to learn a mapping between input data and output labels, so the model can make predictions on new, unseen data.

2. **Unsupervised Learning**: The model is trained on unlabeled data, and the goal is to discover patterns or structure in the data. Examples include clustering, dimensionality reduction, and anomaly detection.

3. **Reinforcement Learning**: The model learns by interacting with an environment and receiving feedback in the form of rewards or penalties. The goal is to learn a policy that maximizes the cumulative reward over time.

Machine learning has many applications, including:

* Image and speech recognition
* Natural Language Processing (NLP)
* Predictive maintenance

* Recommendation systems
* Autonomous vehicles
* Healthcare diagnosis

Machine learning is a rapidly growing field, and its applications continue to expand into various industries.