

# AI and Machine Learning Overview

Artificial Intelligence (AI) and Machine Learning (ML) are transforming industries across the globe.

Here are some key concepts:

## 1. Machine Learning:

- Supervised Learning: Models learn from labeled data
- Unsupervised Learning: Models find patterns in unlabeled data
- Reinforcement Learning: Models learn through trial and error

## 2. Deep Learning:

- Neural Networks: Inspired by human brain structure
- Convolutional Neural Networks (CNN): Excellent for image processing
- Recurrent Neural Networks (RNN): Great for sequential data

## 3. Natural Language Processing:

- Text Classification
- Named Entity Recognition
- Machine Translation
- Question Answering Systems

## 4. Applications:

- Healthcare: Disease diagnosis and treatment planning
- Finance: Fraud detection and risk assessment
- Transportation: Autonomous vehicles

- Education: Personalized learning systems