

# Machine Learning

- It allows computer system to learn and analyze pattern and trends from data to make predictions on new data based on its analysis on past data.
- Machine learning relies on statistical algorithms and techniques to work and perform predictions
- ML is a subset of AI

# Reinforcement Learning

- RL is a learning paradigm where an agent learns by interacting with an Environment and improving its behavior using rewards and penalties.
- In short it learns from trial-and-error approach and the goal here is to maximize cumulative reward

## Machine Learning v/s Reinforcement Learning

Feature	Machine Learning	Reinforcement Learning
Data	Pre-collected dataset	Real time interaction
Training	Offline	Online
Learning Style	Passive	Active
Goal	Accuracy	Maximum cumulative rewards

# Real World Applications of ML & RL

## Machine Learning

- 1] Fraud Detection in banking (Anomaly detection)
- 2] Face recognition (Computer vision)
- 3] Stock price prediction (Regression modelling)
- 4] Medical Diagnosis

## Reinforcement Learning

- 1] Self driving cars
- 2] Robotics control
- 3] Game AI
- 4] traffic signal optimization