



Machine Learning

What is Machine Learning?

Machine learning is an application of AI which allows the computer to learn and make decisions on its own without any explicit instructions.

Traditionally for tasks to be executed we had to mention the exact instructions for it to handle. But even those instructions cannot handle complex tasks such as image recognition, fraud detection, etc. This is where ML comes in picture by learning from examples and making predictions without fixed rules.

Steps in Machine Learning

The steps in how this “machine” learns are-

1. Data Input
2. Preprocessing
3. Algorithms
4. Model training
5. Iterations
6. Evaluation

Pros and Cons of Machine Learning

Pros -

1. Automation is done more efficiently without taking up much of human time/resources.
2. Large amount of data is analyzed and patterns can be detected that might be missed by humans

Cons-

1. Security and privacy concerns
2. Data bias

Types of Machine Learning

1. **Supervised learning** - uses labeled data to train models
2. **Unsupervised learning** - uses unlabeled data to train models
3. **Semi-supervised learning** - uses both labeled and unlabeled data to train models
4. **Reinforcement learning** - model learns through trial and error by receiving rewards or penalties