

Machine Learning Overview

Machine Learning Fundamentals

What is Machine Learning?

Machine Learning is a subset of artificial intelligence that enables systems to learn and improve from experience without being explicitly programmed. It focuses on developing algorithms that can access data and use it to learn for themselves.

Types of Machine Learning

Supervised Learning

In supervised learning, the algorithm learns from labeled training data to make predictions.

Common algorithms:

- Linear

Applications:

- Email

Unsupervised Learning

In unsupervised learning, the algorithm finds patterns in unlabeled data.

Common algorithms:

- K-Mea

Applications:

- Custom

Reinforcement Learning

The algorithm learns by interacting with an environment and receiving feedback.

Key concepts:

- Agent

Applications:

- Game

Model Evaluation Metrics

Classification Metrics

- Accuracy

Regression Metrics

- Mean

Common Challenges

Overfitting

- Model

Underfitting

- Model

Data Quality Issues

- Missing

Feature Engineering

- Select

Best Practices

- Start simple, then add complexity

- Always