Sample Machine Learning Notes for PDF Chat App

1. Introduction to Machine Learning

Machine Learning is a field of artificial intelligence that enables computers to learn from data without being explicitly programmed. It focuses on building models that can make predictions or decisions based on patterns in data.

2. Types of Machine Learning

There are three main types of machine learning: - Supervised Learning: Uses labeled data for training. - Unsupervised Learning: Finds hidden patterns in unlabeled data. - Reinforcement Learning: Learns through rewards and penalties.

3. Logistic Regression

Logistic regression is a supervised learning algorithm used for binary classification problems. It uses the sigmoid function to convert linear outputs into probabilities between 0 and 1. The decision boundary in logistic regression is linear.

4. Support Vector Machine (SVM)

Support Vector Machine is a powerful classification algorithm that finds the optimal hyperplane to separate different classes. It can also handle non-linear classification using kernel tricks.

5. Applications of Machine Learning

Machine learning is used in many real-world applications such as: - Spam email detection - Image recognition - Medical diagnosis - Recommendation systems