Project Proposal: Predictive Analytics for Customer Churn in the Telecom Industry

Problem Statement

Customer churn is a significant issue in the telecom industry, leading to substantial revenue losses. Identifying customers likely to churn can help telecom companies take proactive measures to retain them.

Objective

The primary objective of this project is to develop a predictive model that identifies customers at high risk of churning, enabling targeted retention strategies.

Data Sources

The project will utilize customer data, including demographics, usage patterns, service history, and customer support interactions.

Methodology

1. Data Collection: Gathering relevant customer data.
2. Data Preprocessing: Cleaning and preparing the data for analysis.
3. Exploratory Data Analysis (EDA): Understanding data distributions and relationships.
4. Feature Engineering: Creating new features to enhance model performance.
5. Model Development: Building and evaluating different machine learning models.
6. Model Deployment: Deploying the best-performing model using a web-based application.

Expected Outcomes

1. A robust predictive model with high accuracy in identifying churn.
2. Insights into key factors contributing to customer churn.

Project Proposal: Predictive Analytics for Customer Churn in the Telecom Industry

3. A web-based application for real-time churn prediction.

Timeline

Week 1-2: Data Collection and Preprocessing

Week 3: Exploratory Data Analysis and Feature Engineering

Week 4: Model Development

Week 5: Model Evaluation and Selection

Week 6: Model Deployment and Documentation

Tools and Technologies

Programming Languages: Python

Libraries: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn

Frameworks: Flask

Deployment: Docker