CUSTOMER CHURN ANALYSIS FOR TELECOM INDUSTRY

Introduction

In the telecom industry, customer churn refers to customers discontinuing their service and switching to competitors. Due to intense competition and low switching costs, predicting customer churn has become a critical business problem. Customer churn analysis helps telecom companies identify customers who are likely to leave and enables timely actions to improve customer retention and revenue.

Abstract

This project focuses on analyzing and predicting customer churn in the telecom sector using data-driven techniques. Customer usage behavior, complaints, and recharge patterns are analyzed to build a binary classification model for churn prediction. Explainable machine learning techniques are used to identify key churn factors. A one-page Power BI dashboard is created to visualize churn insights and support business decision-making.

Tools Used

SQL – Data extraction and aggregation

Python – Data preprocessing and churn prediction using Scikit-learn

ELI5 / SHAP – Model explainability

Power BI – One-page churn analysis dashboard

Features Used

Total call duration

Average call duration

Number of customer complaints

Recharge frequency

Monthly charges

CUSTOMER CHURN ANALYSIS FOR TELECOM INDUSTRY

Customer tenure

These features capture customer engagement, satisfaction, and service usage patterns.

Conclusion

Customer churn analysis provides valuable insights into customer behavior and service performance in the telecom industry. By combining SQL, machine learning, and explainable AI techniques, the project enables accurate churn prediction and identification of key churn drivers. The Power BI dashboard helps stakeholders monitor churn trends and implement effective retention strategies, leading to improved customer loyalty and business growth.

DEVELOPED BY VIDHYA S

CSE-IV