

■ Telco Customer Churn Prediction – Executive Summary

■ Project Description

This project leverages machine learning to predict customer churn in the telecommunications industry using the Telco Customer Churn dataset. The goal was to identify key drivers of churn, develop a predictive model, and provide actionable business insights to improve customer retention and reduce revenue loss.

■ Quantified Results

- Best Model: XGBoost Classifier - Accuracy: 82% - Precision (Churn): 79% - Recall (Churn): 74% - F1-score (Churn): 76% - AUC-ROC: 0.86

■ Actionable Insights

1. High-Risk Segments: Customers with month-to-month contracts churn 3x more; electronic check users are more churn-prone. 2. Revenue Insights: High-charge customers (\$90+) at elevated churn risk; loyalty discounts and bundles can help. 3. Customer Experience: Fiber optic internet and technical support dissatisfaction drive churn; improving service quality is critical. 4. Retention Strategy: Incentivize long-term contracts, promote auto-pay options, and launch targeted retention campaigns for high-risk groups.

■ Business Impact

By implementing these recommendations, the company can reduce churn by an estimated 15–20%, directly improving revenue stability and long-term growth.