Churn Prediction & Retention Strategy
Project Report

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Project: Churn Prediction for a Telecom Provider

1. Summary

This project builds a machine learning model to predict customer churn and recommend targeted retention strategies. The solution helps identify high-risk customers early, enabling the business to reduce revenue loss and improve customer lifetime value.

2. Business Context

The telecom industry faces high competition and low switching costs. Retaining customers is more cost-effective than acquiring new ones.

Objective: Predict churn and provide actionable insights to support marketing and customer success teams.

3. Problem Statement

Develop a predictive model that classifies whether a customer is likely to churn based on usage, billing, and contract features.

4. Dataset Overview

- Records: 25000
- Features: 36
- Target Variable: `is_churn`

Key Inputs: tenure, monthly charges, contract type, payment method, internet service

5. Approach

- Data cleaning and missing value handling
- Feature engineering (ARPU, tenure segments)
- One-hot encoding for categorical variables
- Model training and cross-validation

6. Model Selection

Models tested: Logistic Regression, Random Forest, XGBoost
Final Model: XGBoost
As best ROC-AUC and recall for churn class, strong performance