Customer Churn Prediction for SyriaTel

Project Overview

This project focuses on developing a predictive model to identify customers at high risk of churn within SyriaTel, a telecommunications company. By analyzing customer data, the model aims to enable proactive retention strategies, reduce revenue loss, and improve customer satisfaction.

Business Understanding

Customer churn, the rate at which customers discontinue their service, is a critical concern for telecommunications companies like SyriaTel. High churn rates can lead to significant revenue loss and increased costs associated with acquiring new customers.

By accurately predicting which customers are likely to churn, SyriaTel can proactively implement targeted retention strategies. These strategies may include:

- Offering personalized incentives or discounts

- Improving customer service and support
- Addressing specific pain points or concerns

Ultimately, effective churn prediction enables SyriaTel to improve customer satisfaction, reduce revenue loss, and optimize customer retention efforts, leading to increased profitability.

Data Description

The analysis is based on a dataset containing customer information and service usage details. Key features include:

- Account information (e.g., account length)
- Service usage (e.g., call durations, data usage, charges) with insights into the key factors driving churn.

Recommendations

Based on the model results, this project will provide SyriaTel with actionable recommendations to improve customer retention, reduce churn, and increase overall profitability.

Next Steps

Further work may include:

- Refining the predictive model to improve its accuracy.
- Exploring additional data sources to enhance the analysis.
- Developing a system for real-time churn prediction.
- Implementing targeted intervention strategies based on the model's output.
- Customer demographics (e.g., state, area code)
- Plan details (e.g., international plan, voice mail plan)
- Customer service interactions (e.g., number of customer service calls) The goal is to leverage this data to identify patterns and build a model that accurately predicts which customers are most likely to churn.

Methodology

The project will involve the following key steps:

- Data Exploration and Preprocessing: Understanding the data, handling missing values, and preparing it for modeling.
- Feature Engineering: Creating new features or transforming existing ones to improve model performance.
- Model Selection and Training: Choosing appropriate machine learning models (e.g., Logistic Regression, Decision Trees) and training them on the data.
- Model Evaluation and Validation: Assessing the performance of the models using relevant metrics (e.g., precision, recall, accuracy) and ensuring they generalize well to unseen data.
- Feature Importance Analysis: Determining the most influential factors contributing to customer churn.

- Recommendations: Providing actionable insights and recommendations to SyriaTel based on the model results.

Technologies Used

- Python
- Scikit-learn
- Pandas
- Matplotlib, Seaborn

Results

The results of this project will include a predictive model capable of identifying customers at high risk of churn.

Releases

No releases published
Create a new release

Packages

No packages published
Publish your first package

Languages

- **Jupyter Notebook** 100.0%