

Overview

Predicting Customer Churn at SyriaTel.

Objective

Use machine learning to figure out which customers are most likely to leave SyriaTel. This will help us understand why they're leaving and take steps to keep them, because losing customers hurts our revenue and ability to grow. By spotting customers who might leave early on, we can proactively step in and keep them happy.

Business and Data Understanding

SyriaTel is losing a lot of money because customers are leaving. Can we figure out which customers are likely to leave and why?

We are going to do this by analyzing historical data of customer behavior, including usage patterns, customer service interactions, and subscription plans.

Modeling Approach

To predict which customers might leave, we built a machine learning model. We started by cleaning and preparing the customer data. Then, we experimented with different models, beginning with a simple Logistic Regression model. Ultimately, we chose a Random Forest model because it accurately predicted churn while also helping us understand the reasons behind customer departures. This classification approach allows us to categorize customers as likely to churn or stay, enabling us to take specific actions to retain valuable customers.

Evaluation

Our model effectively identified customers who actually left, striking a balance between finding as many departing customers as possible while minimizing false alarms. This helps us avoid unnecessary outreach to loyal customers. Key factors driving customer churn include frequent total day minutes, total day charge, and surprisingly, customer service calls, which might suggest dissatisfaction despite high usage.

Recommendations

To improve customer retention, we can:

- **Prioritize customers with frequent complaints** by offering dedicated support or faster resolution times.
- **Optimize international plans** by adjusting offerings or providing targeted discounts to users on those plans.
- **Reward high-usage customers** with loyalty programs to show our appreciation and keep them satisfied.
- **Proactively reach out to customers identified as high-risk for churn** by developing targeted campaigns based on our predictive model."*