

The background is a vibrant green with a gradient from dark green at the top to a lighter green at the bottom. There are several bright, glowing light streaks or rays that sweep across the frame from the left side towards the right, creating a sense of motion and energy.

Title: SyriaTel Customer Churn Prediction

Subtitle: Data-Driven Insights for Reducing Churn

Understanding Customer Churn

- SyriaTel is facing high customer churn, leading to revenue loss.
- Predicting churn allows for proactive retention strategies.
- Objective: Build a churn prediction model using historical data.

The Challenge of Churn

- Problem Statement: Can we predict customer churn using data?
- Impact: High churn leads to lost revenue and unstable growth.
- Goal: Identify key churn indicators to improve retention.

What Data Did We Analyze?

- Customer Demographics: Account length, area code
- Usage Behavior: Call duration, number of calls, total charges
- Plan Subscription: International plan, voicemail plan
- Customer Service Interactions: Complaints, number of calls

How Do We Measure Success?

- Main Metric: Recall (Ensures we capture most churners)
- Other Metrics: Precision (avoiding false positives), Accuracy

Is the International Plan Linked to Churn?

- Chi-square test results: Significant relationship between international plan users and churn
- Business Insight: Customers may leave due to high international charges

Preparing the Data for Modeling

- Removed redundant features (high correlation found)
- Scaled numerical features for model consistency
- One-hot encoded categorical variables (international plan, area code, etc.)
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Finding the Best Model

Tested Models:

- Logistic Regression (Baseline)
- Random Forest (Too conservative)
- Decision Tree (Good recall, lower precision)
- Gradient Boosting (Best balance of accuracy & recall)

Why Gradient Boosting?

- Highest test accuracy: 96.68%
- Good recall (81.25%) and precision (95.12%)
- Balances false positives and false negatives

What Factors Drive Churn?

- Most Important Features:
- Customer Service Calls: High complaints → churn
- Total Charge: High charges lead to dissatisfaction
- International Plan: Users on this plan are more likely to leave

Actionable Strategies to Reduce Churn

- Improve Customer Support: Resolve complaints faster.
- Target High-Charge Customers: Offer loyalty incentives.
- Re-Evaluate International Plans: Competitive pricing needed.
- Monitor High Voicemail Users: Consider chat-based alternatives.

Implementing Churn Reduction Strategies

- Deploy model in a real-time customer analytics system.
- Conduct A/B testing on retention campaigns.
- Regularly update the model with new customer data.

Thank You!

- Questions?