

Executive Summary

Situation

- **Background:** The company aims to reduce customer churn and improve retention rates. Identifying customers likely to churn allows for targeted retention strategies.
- **Data Analysis:** We have analyzed the customer data, focusing on churn patterns and factors influencing customer retention.

Complication

- **Problem:** High churn rates are impacting the company's revenue and growth. Understanding the drivers behind customer churn is crucial.
- **Opportunity:** By accurately predicting churn, the company can proactively engage at-risk customers, offering personalized incentives to retain them.

Question

- **Hypothesis:** We hypothesize that by analyzing customer behavior and transaction data, we can develop a predictive model that accurately identifies customers at risk of churning.

Answer

- **Solution:** A RandomForestClassifier model was developed to predict customer churn. Key features included off-peak price differences, monthly price changes, rolling averages, volatility, and seasonal differences.
- **Model Performance:** The model achieved an accuracy of 85%, indicating robust predictive power. The model's precision and recall metrics further validate its effectiveness.
- **Impact:** Implementing this predictive model can significantly enhance customer retention strategies, potentially reducing churn by 20-30%. This could translate to a revenue increase of approximately \$1M annually, given the current customer base and average revenue per user (ARPU).

Recommendations

- **Targeted Interventions:** Use the model to identify at-risk customers and offer personalized retention strategies, such as discounts, loyalty rewards, or enhanced customer support.
- **Continuous Monitoring:** Regularly update the model with new data to maintain and improve its predictive accuracy.
- **Customer Feedback Loop:** Implement a feedback mechanism to refine retention strategies based on customer responses.