Customer Churn Prediction

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Motivation

Churn is a significant challenge, affecting revenue and growth. The goal of this project is to predict which customers may churn and identify the key factors influencing this process.

Problem Statement

The need to accurately forecast customer churn to minimize losses and improve customer retention.

Methodology

- Data includes demographics, transaction history, service usage, and customer support interactions.
- Machine learning algorithms used: Logistic Regression, Random Forest, Gradient Boosting (XGBoost).

Solution

Developed a model to predict customer churn effectively based on historical data.
Advanced machine learning algorithms improve prediction accuracy and identify key risk factors.

Key Steps

1. **Data Collection and Preparation**: Cleaning and processing customer data.
2. **Modeling**: Logistic regression as a baseline, then exploring Random Forest and Gradient Boosting.
3. **Model Evaluation**: Metrics such as accuracy, F1 score, and ROC-AUC are used to assess the model's performance.

Graphical Results

- **ROC Curve**: Shows the balance between true positives and false positives.

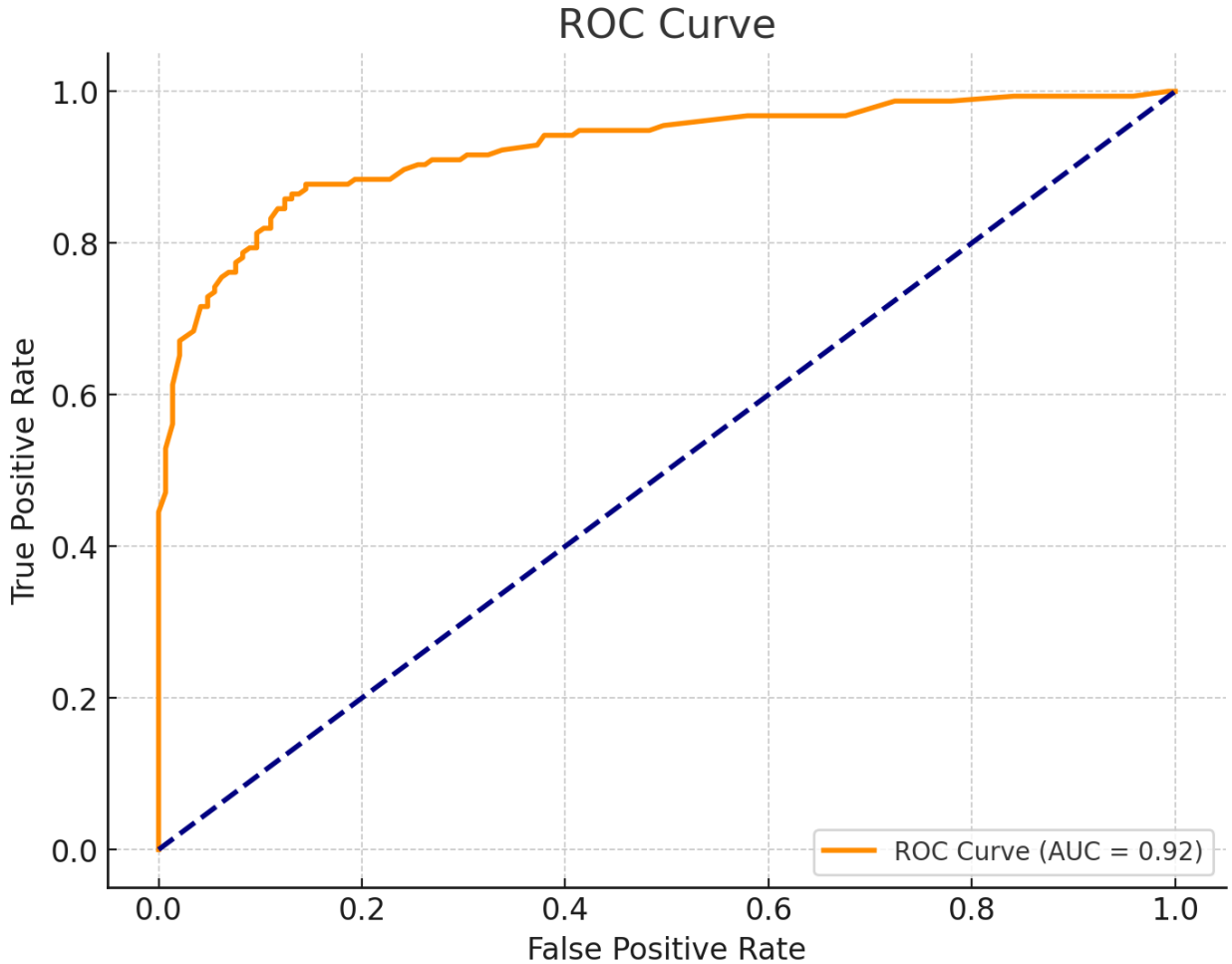

Figure: ROC Curve

Impact

The findings will help marketing and customer success teams allocate resources more effectively, improving retention and customer lifetime value.

Conclusion

The model provides a practical tool for predicting customer churn, with the potential to optimize retention strategies.
Regular updates are necessary to maintain accuracy as customer behavior evolves.