

MANAGING CUSTOMER CHURN: A PREDICTIVE APPROACH



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BACKGROUND



SyriaTel, a prominent telecommunications provider, offers diverse services with a commitment to quality communication solutions, strategically located in multiple regions. As market competition intensifies, the company focuses on enhancing services and ensuring exceptional customer experiences amidst rapid industry changes.



BUSINESS UNDERSTANDING

The project seeks to create a predictive model for forecasting customer churn, a critical challenge faced by telecom firms like SyriaTel. By proactively identifying at-risk customers, this model can assist in implementing retention strategies. Various stakeholders such as the Marketing Team, Customer Service department and Management are poised to benefit from this endeavor, each playing a crucial role in leveraging the model's insights to enhance customer retention efforts and overall business performance.



GOALS

Predict Customer Churn

Develop predictive models to foresee potential churn for early intervention and improved satisfaction.

Identify Key Churn Predictors

Focus retention efforts on significant factors.

Improve Customer Satisfaction

Enhance overall satisfaction by addressing customer concerns and preferences identified through predictive modeling

Strategic Decision-Making

Offer actionable insights to management for strategic resource allocation and informed decision-making

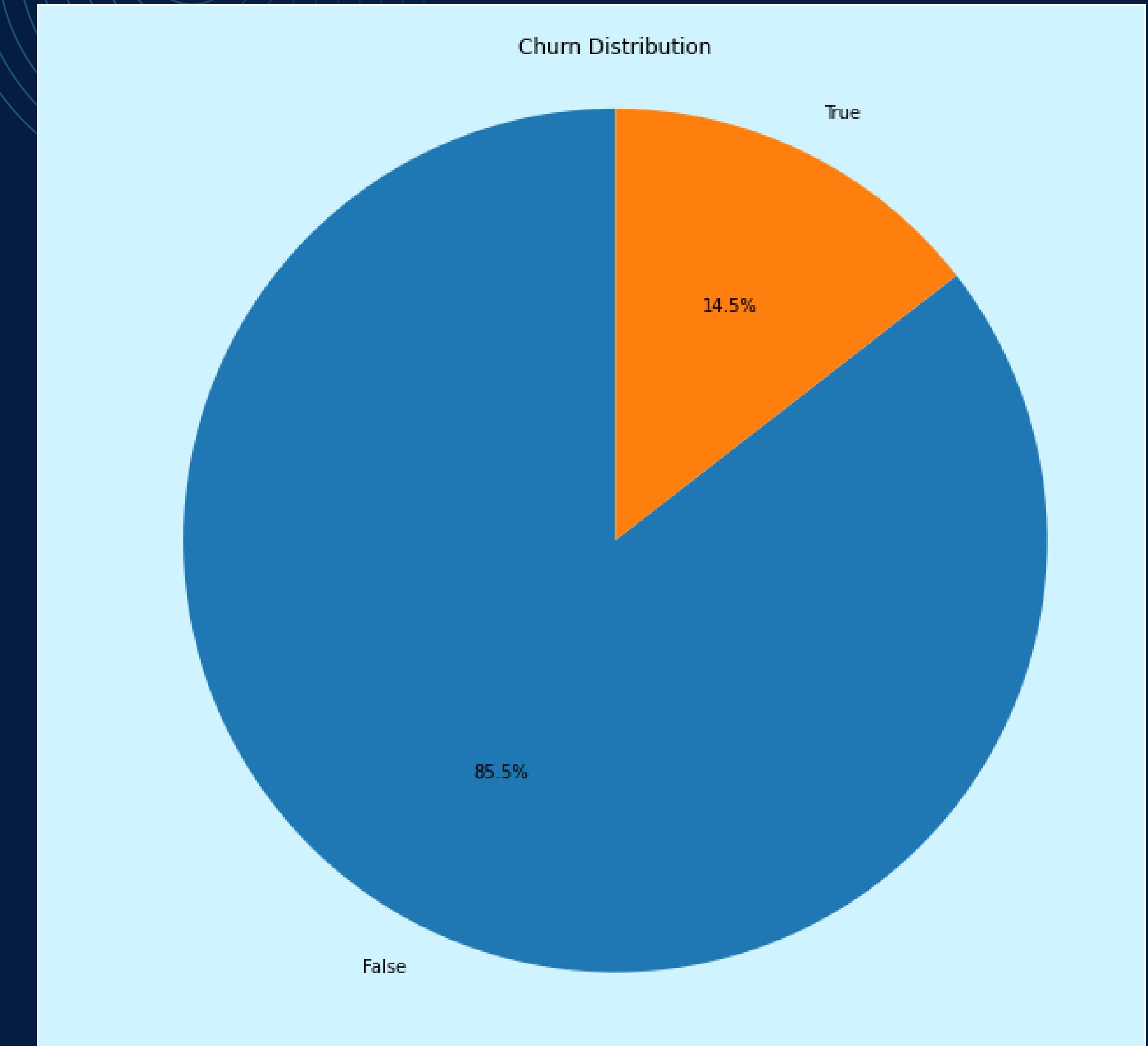


DATA UNDERSTANDING

The dataset, sourced internally from SyriaTel, provides detailed customer interaction and service usage records, spanning various relevant factors impacting churn. Leveraging this data, the project aims to develop predictive models to aid SyriaTel in preemptively addressing customer churn, thereby improving retention strategies and overall business outcomes.

Churn Distribution

The target variable distribution shows imbalance, with the majority class indicating no churn represented by False and the minority class indicating churn (True).

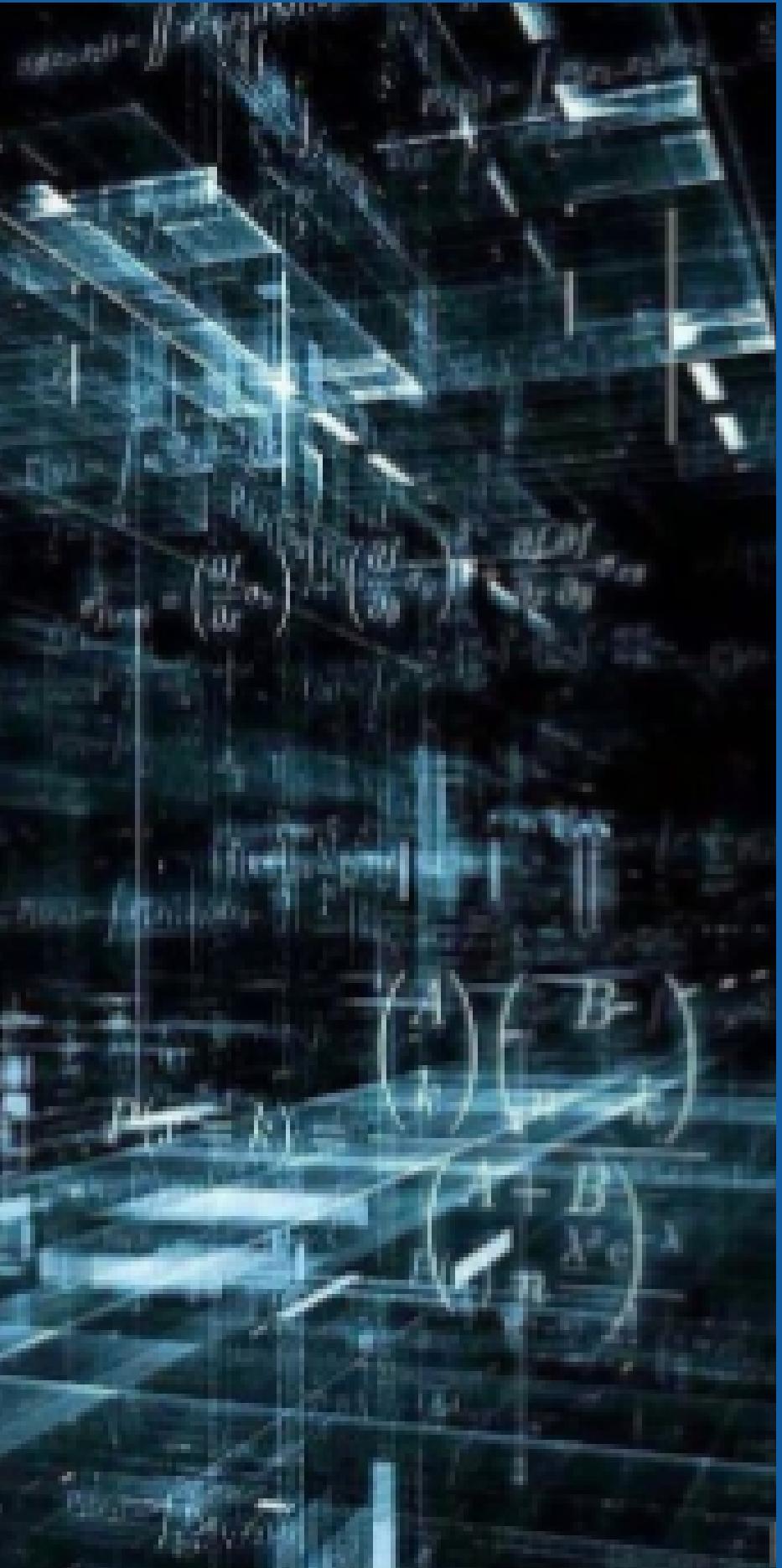


MODELING

In developing our predictive model, we began by establishing a foundational model incorporating all available features within the dataset. Through a series of iterations, we systematically refined the model by exploring various methodologies until arriving at the optimal configuration that demonstrated superior performance.



MODEL EVALUATION RESULTS

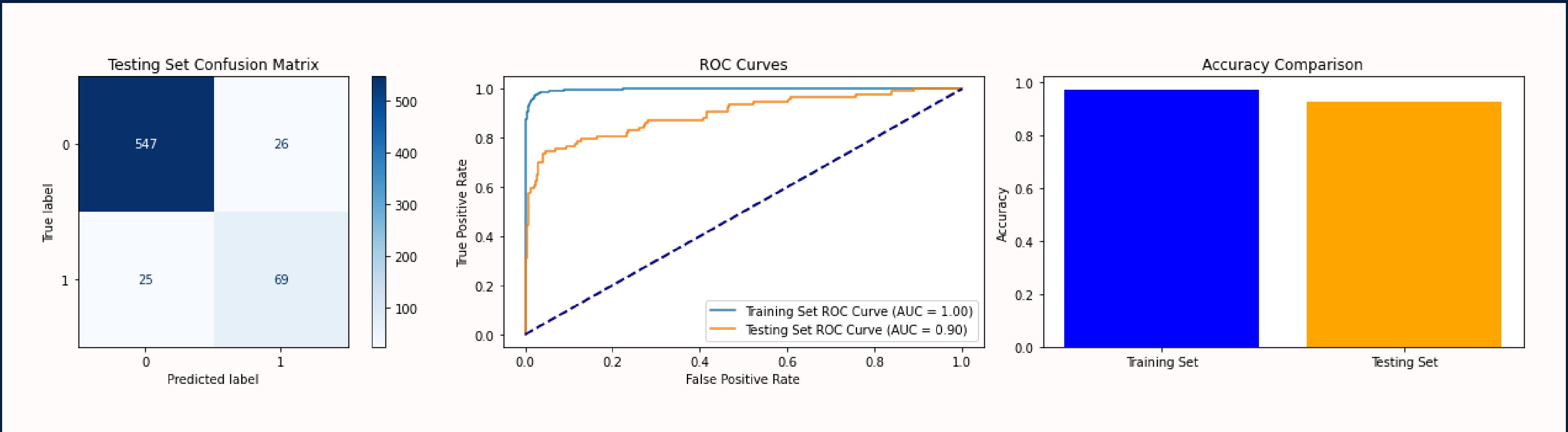


We evaluated the final model and got the following results:

- The accuracy score is 92.4%. This means the model accurately predicts customer churn 92.4% of the cases.
- Recall: The model correctly identifies 73.4% of churn cases.
- Precision: The model's precision stands at 72.6%, meaning when the model predicts customers churning, it's correct on 72.6% of the cases.
- Additionally, the F1 score of 0.73 shows the model's performance is balanced, considering both how often it correctly predicts churn (precision) and how often it identifies all the churn cases (recall).

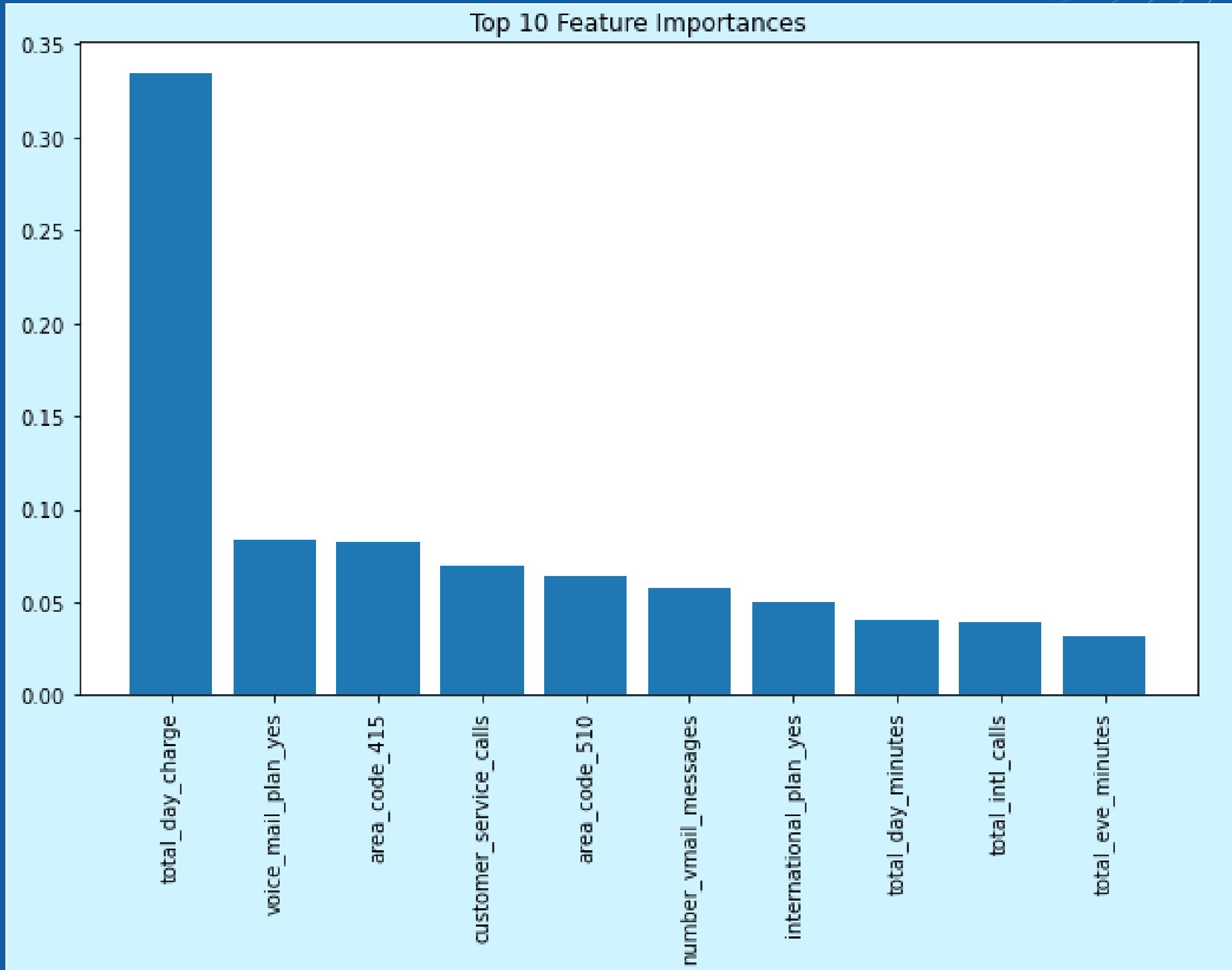
This is Illustrated below.

EVALUATION RESULTS



The AUC of 0.9 indicates that the model performs well in ranking the predicted probabilities, with a higher probability assigned to the positive class (e.g., churn) compared to the negative class (e.g., no churn).

TOP FEATURES



The graph represents the top 10 features that have effect on customer churn.

Recommendations

- Integration into Customer Management Systems: Collaborate with your IT department to seamlessly integrate the churn prediction model into your customer management systems. This ensures that the model is accessible and can be automatically applied to new data.
- Manage Total Day Charges: Implement targeted pricing strategies, discounts, or loyalty programs to reduce total day charges for at-risk customers.
- Targeted Customer Service Improvement: Invest in enhancing customer service quality and efficiency to address concerns promptly, reducing the need for repeated calls.
- Review and Optimize International Plans: Evaluate and optimize international plans to align with customer needs, considering personalized offerings or promotions.
- Enhance Voicemail Services: Evaluate and enhance voicemail services, considering additional features or personalized messaging to increase customer engagement.

Recommendations

- Area Code Analysis and Regional Strategies: Conduct a detailed analysis of customer behaviors in different areas and implement region-specific strategies or promotions.
- Customer Education on International Usage: Launch educational campaigns to inform customers about international plan benefits and usage tips, proactively addressing concerns.
- Regular Model Updates and Monitoring: Periodically update the predictive model based on new data and monitor strategies based on changing customer behaviors and market trends.
- Feedback Mechanism Implementation: Establish a robust feedback mechanism to gather insights directly from customers and utilize feedback to improve services iteratively.

NEXT STEPS



Action 1

Integrate churn prediction model into customer management systems for seamless application to new data with IT collaboration.



Action 2

Implement targeted pricing and service strategies to manage total day charges and enhance customer service quality, reducing churn risk.



Action 3

Optimize international plans and voicemail services to align with customer needs, enhancing value and engagement.

THANK'S FOR
WATCHING

