A decorative graphic on the left side of the slide consists of white lines and circles on a blue gradient background, resembling a circuit board or a network diagram. The lines are vertical and horizontal, with small circles at the ends, creating a stylized, abstract representation of a telecommunications network.

TELECOM CUSTOMER CHURN PREDICTION ANALYSIS

AUTHOR: ISAIAH

DATE: 2025

INTRODUCTION

- This analysis aims to predict customer churn for SyriaTel by identifying customers likely to discontinue service and providing actionable insights for retention.

BUSINESS PROBLEM

- SyriaTel is experiencing revenue losses as customers discontinue services.
- - Identifies churn patterns
- - Provides visual evidence
- - Suggests retention strategies

OBJECTIVES

- Predict Customer Churn using machine learning
- Identify key drivers of churn
- Provide data-driven insights
- Recommend actionable retention strategies



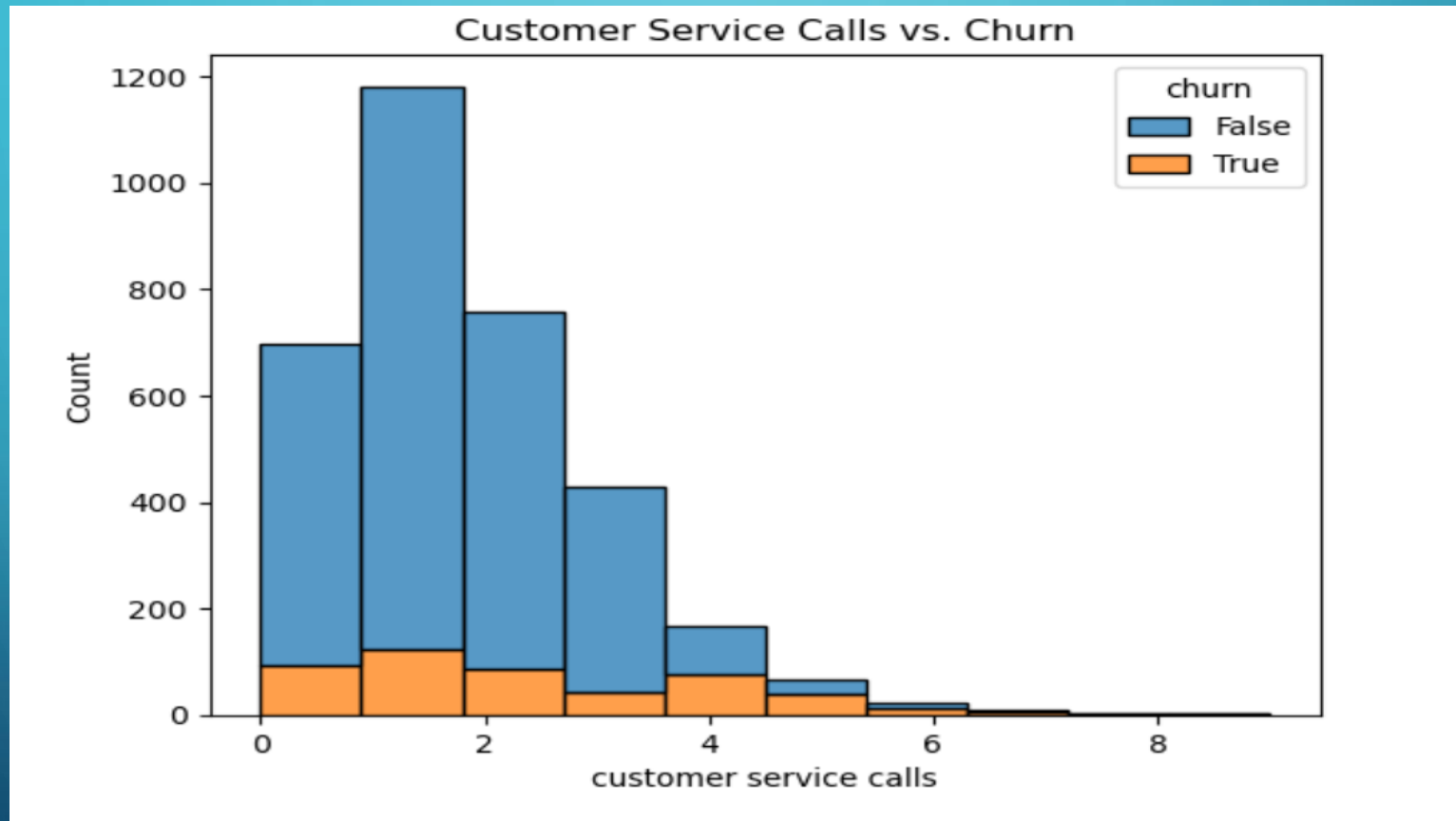
METHODOLOGY

1. Data Exploration & Cleaning
 2. Exploratory Data Analysis (EDA)
 3. Predictive Modeling
 4. Evaluation and Interpretation
- 
- 

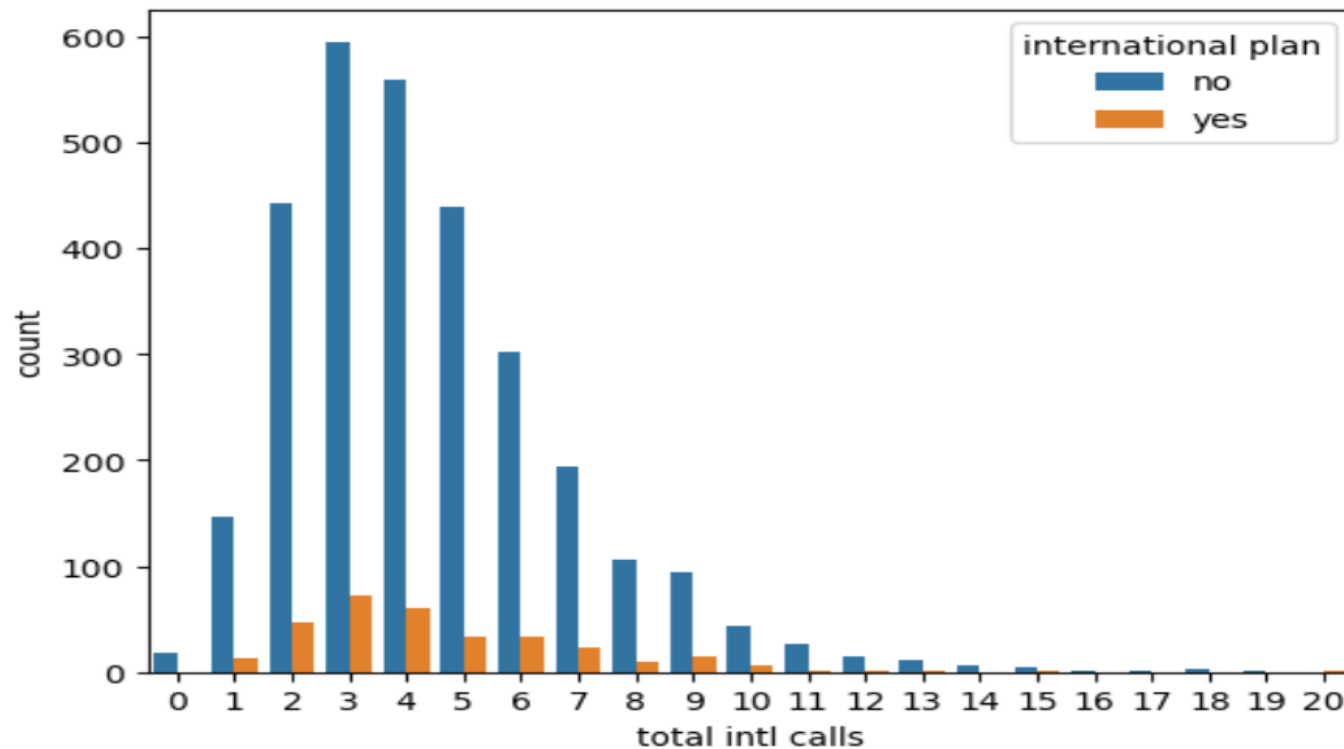
KEY VISUALIZATIONS

- - Churn vs. Total Minutes
- - Model Performance: Logistic Regression, Decision Tree, Random Forest, SVM, KNN, Naive Bayes

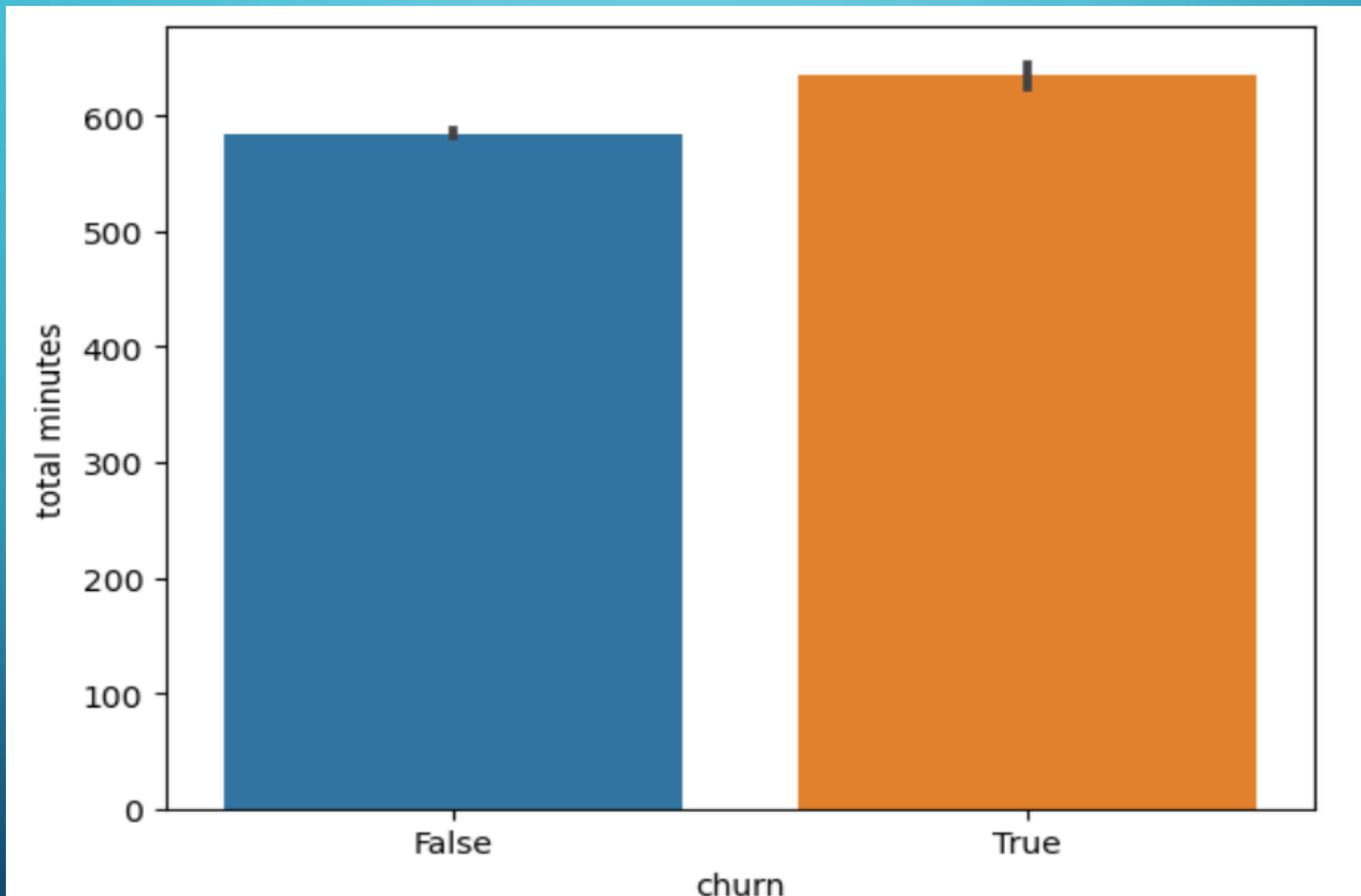
CUSTOMER SERVICE CALLS VS. CHURN



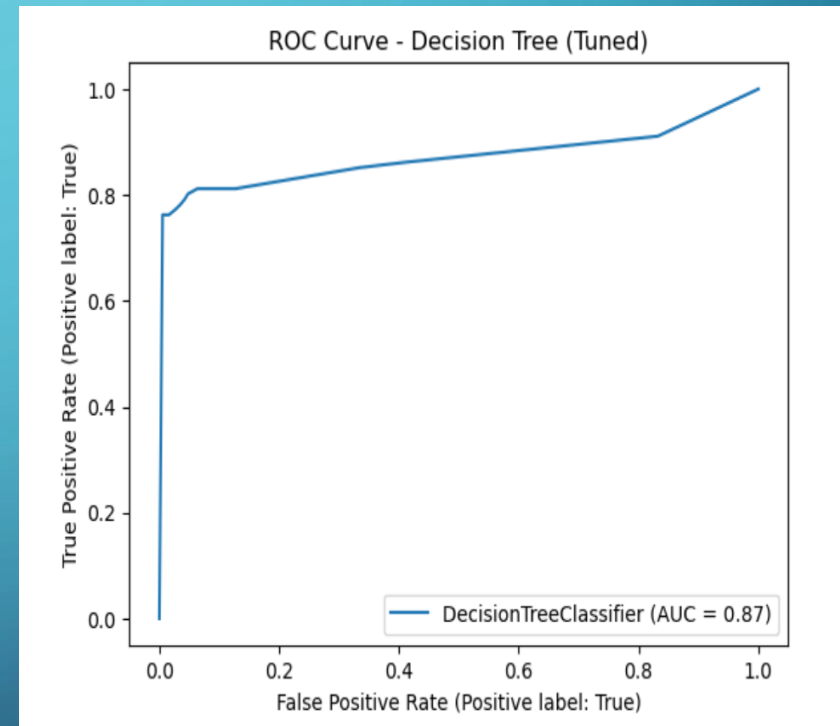
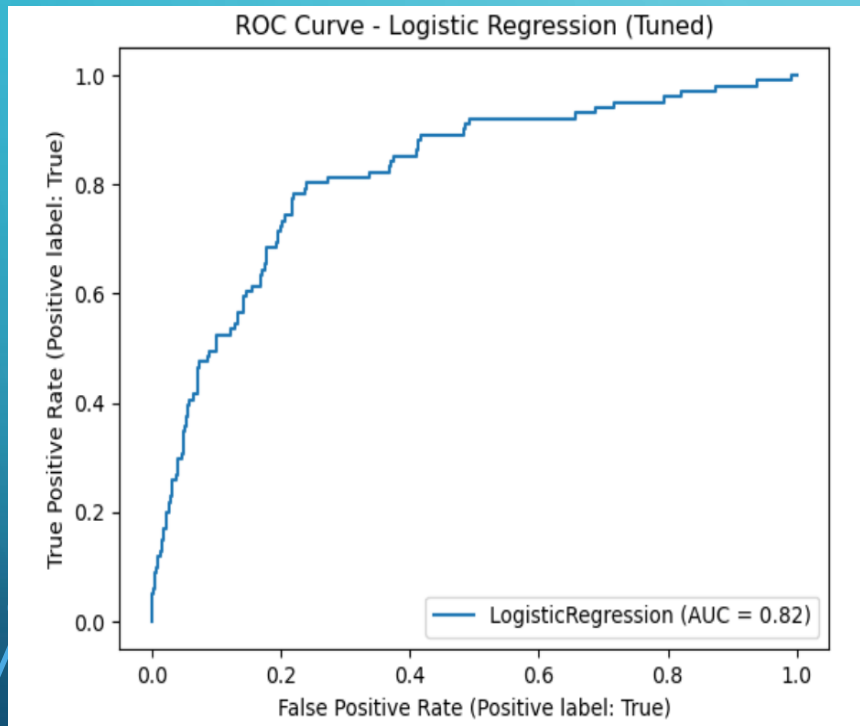
INTERNATIONAL CALL VS. INTERNATIONAL PLAN



CHURN VS. TOTAL MINUTES

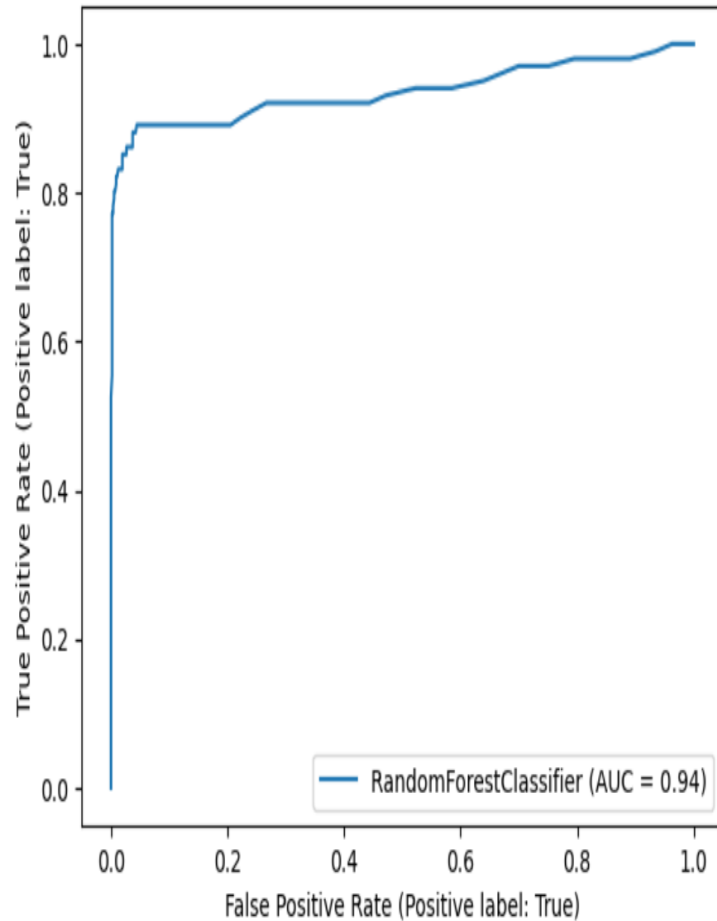


MODEL PERFORMANCE: LOGISTIC REGRESSION, DECISION TREE, RANDOM FOREST, SVM, KNN, NAIVE BAYES

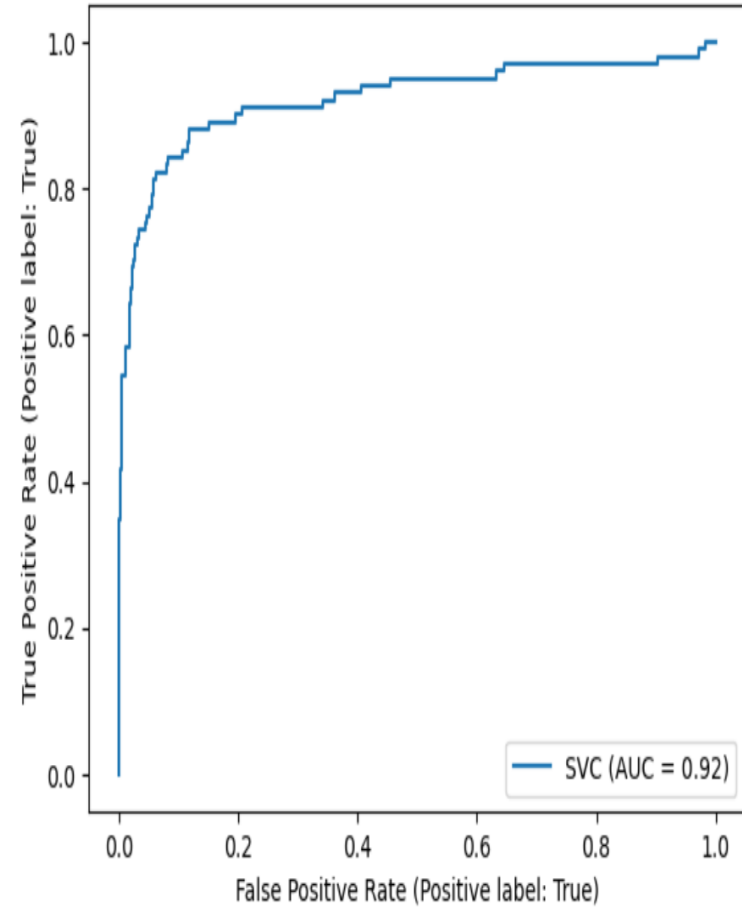


CONT..

ROC Curve - Random Forest (Tuned)

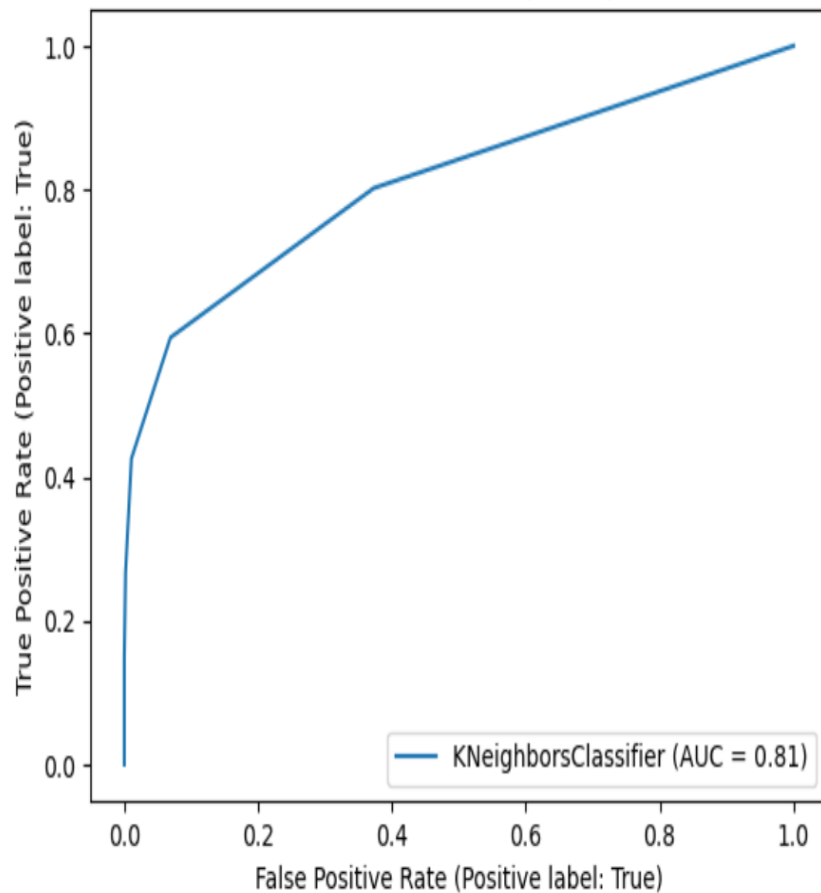


ROC Curve - SVM (Tuned)

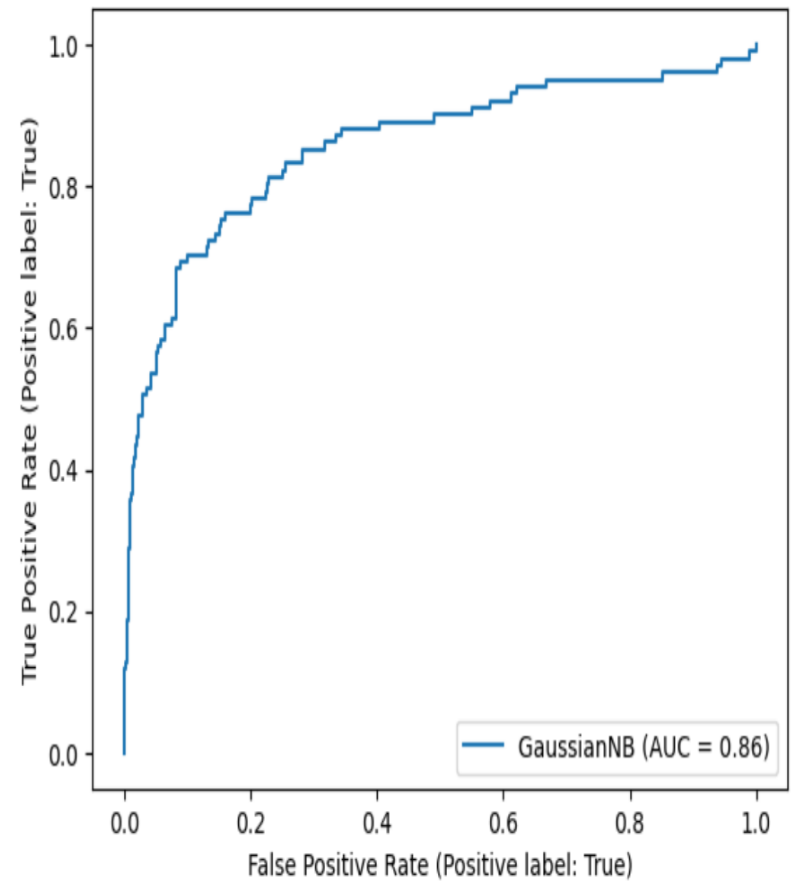


CONT..

ROC Curve - KNN (Tuned)



ROC Curve - Naive Bayes (Tuned)



KEY FINDINGS

- - Certain customer segments have higher churn rates
- - Service usage patterns and billing issues strongly correlate with churn
- - The predictive model effectively identifies customers at risk

RECOMMENDATIONS

- - Implement targeted retention strategies
- - Enhance customer engagement
- - Monitor key performance indicators (KPIs) regularly

CONCLUSION

- - The analysis provides a data-driven framework for understanding churn
- - Insights can help SyriaTel reduce churn and revenue loss
- - Continuous monitoring and improvement of strategies is recommended