

# Predicting and Understanding Customer Churn

SyriaTel Telecommunications

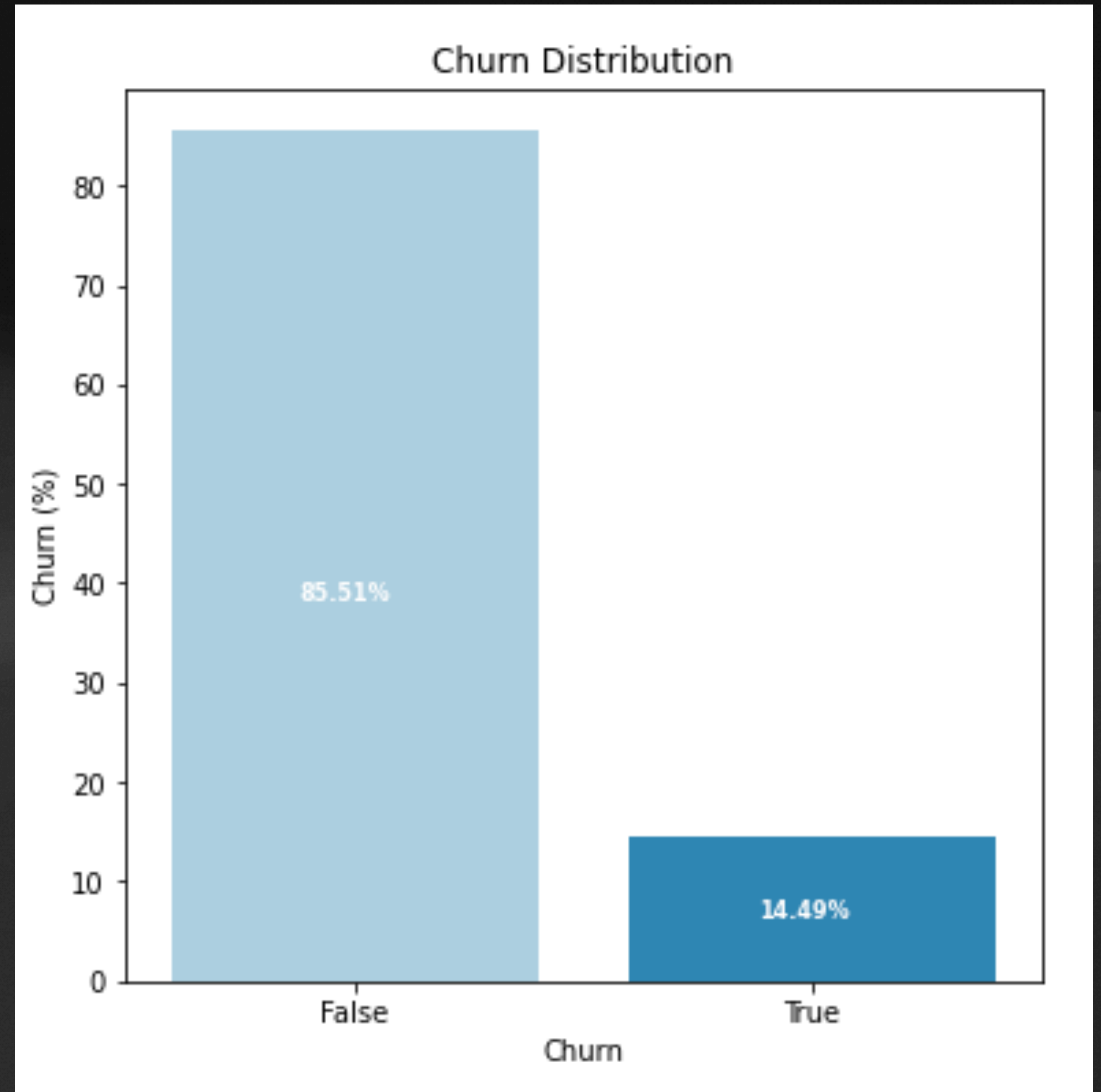
By Kai Cansler



# Data Understanding

## Key Points

- Contains 21 Features
- 3,333 rows
- 14.49% of observations churn





# Performance Metric

## Recall

- Minimizes missing clients that will churn
- More cost efficient
- Model Selection
- Ratio of True Positive Predictions and All Positive Elements



# Outline

1



## Customer Service Calls

Is this an indicator of churn?

2



## Location and Churn

How does location effect churn?

3



## Client Usage of Plans

What services are being used?

4



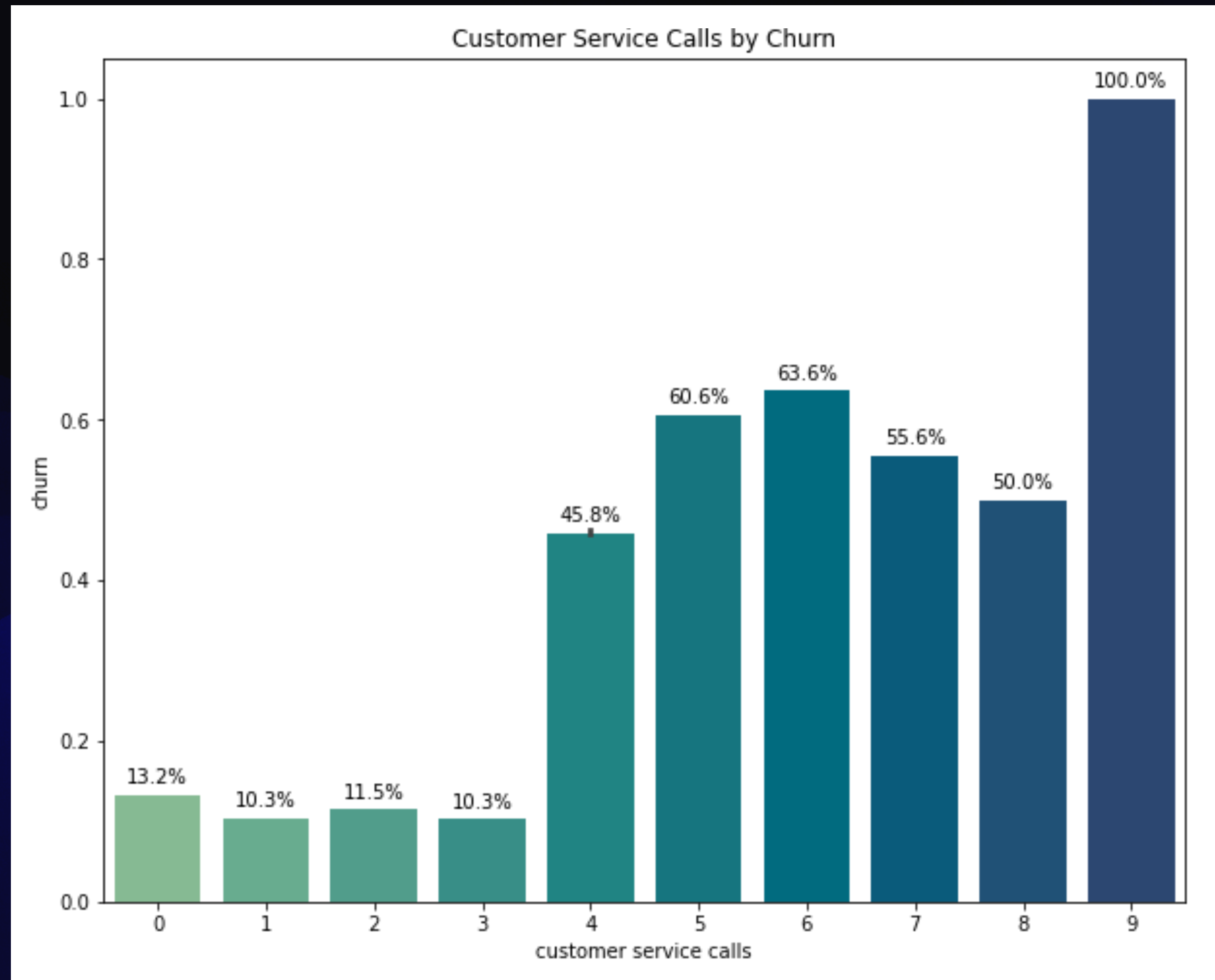
## Prediction Model

Confusion Matrix and Performance



# Customer Service Calls

- Rate of churn increases significantly after 3 calls.
- 10.3% to 45.8%









# International Plan against Churn Rate

- Increases Customer Churn
- Why does it increase?
- 





**\$0.27 / min**

**With International Plan**

**\$0.27 / min**

**Without International Plan**



# Recommendation

1. Reassess Customer service experience
2. Compare with competitors in high churn states
3. Improve International Plan by adjusting rate



# Confusion Matrix

## Understanding the Matrix

TN

**True Negative**

Accurately predicted client does not churn

FP

**False Positive**

Incorrectly predicted client does churn

FN

**False Negative**

Incorrectly predicted client does not churn

TP

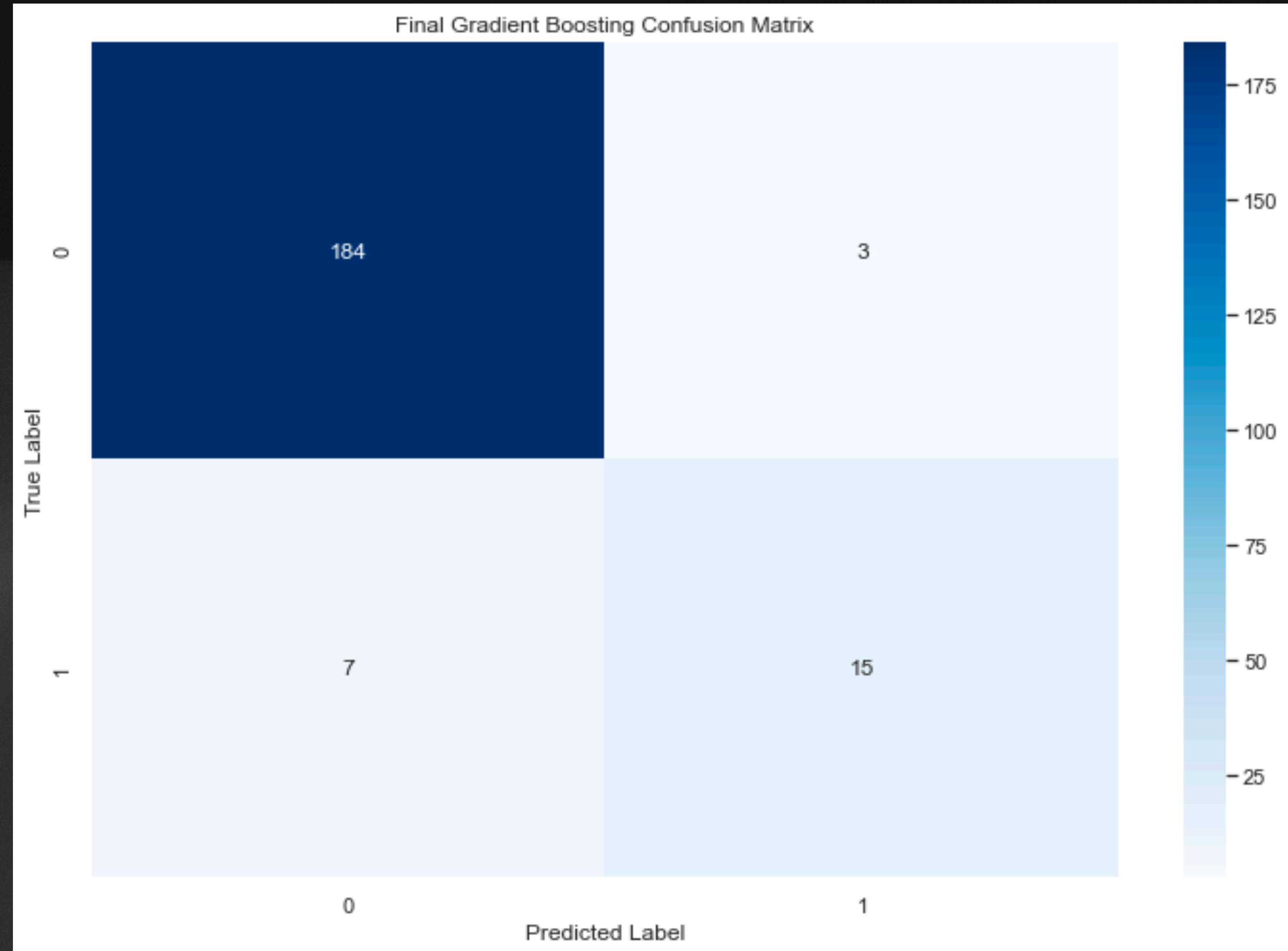
**True Positive**

Accurately predicted client does churn



# Confusion Matrix Predictions

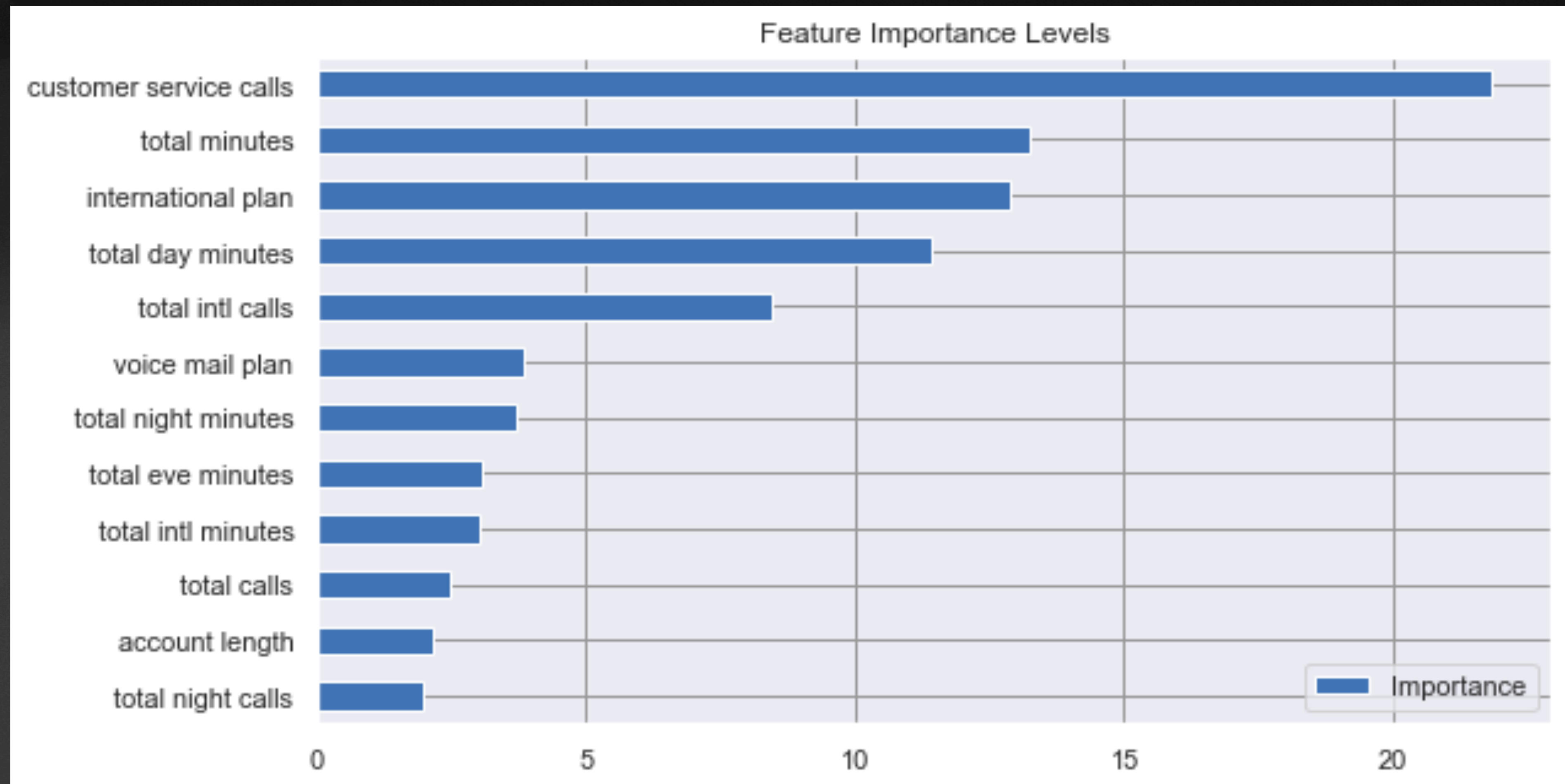
- 3 False Negative predictions
- 7 False Positive predictions





# Importance

## How it predicts.





# Conclusion & Next Steps

## Customer churn

### Focus:

- Customer Service Line
- International Plan
- Competitive Rates

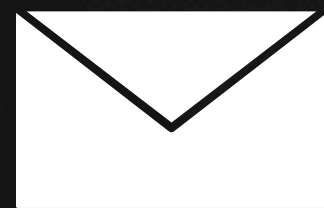
### Next Steps:

- Gather information on competitors offerings
- Collect more data to improve model



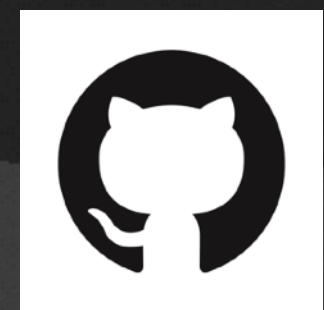
# Thank you.

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GitHub

<https://github.com/kai-cansler>

