# SyriaTel Consumer Retention

Carlos Govea

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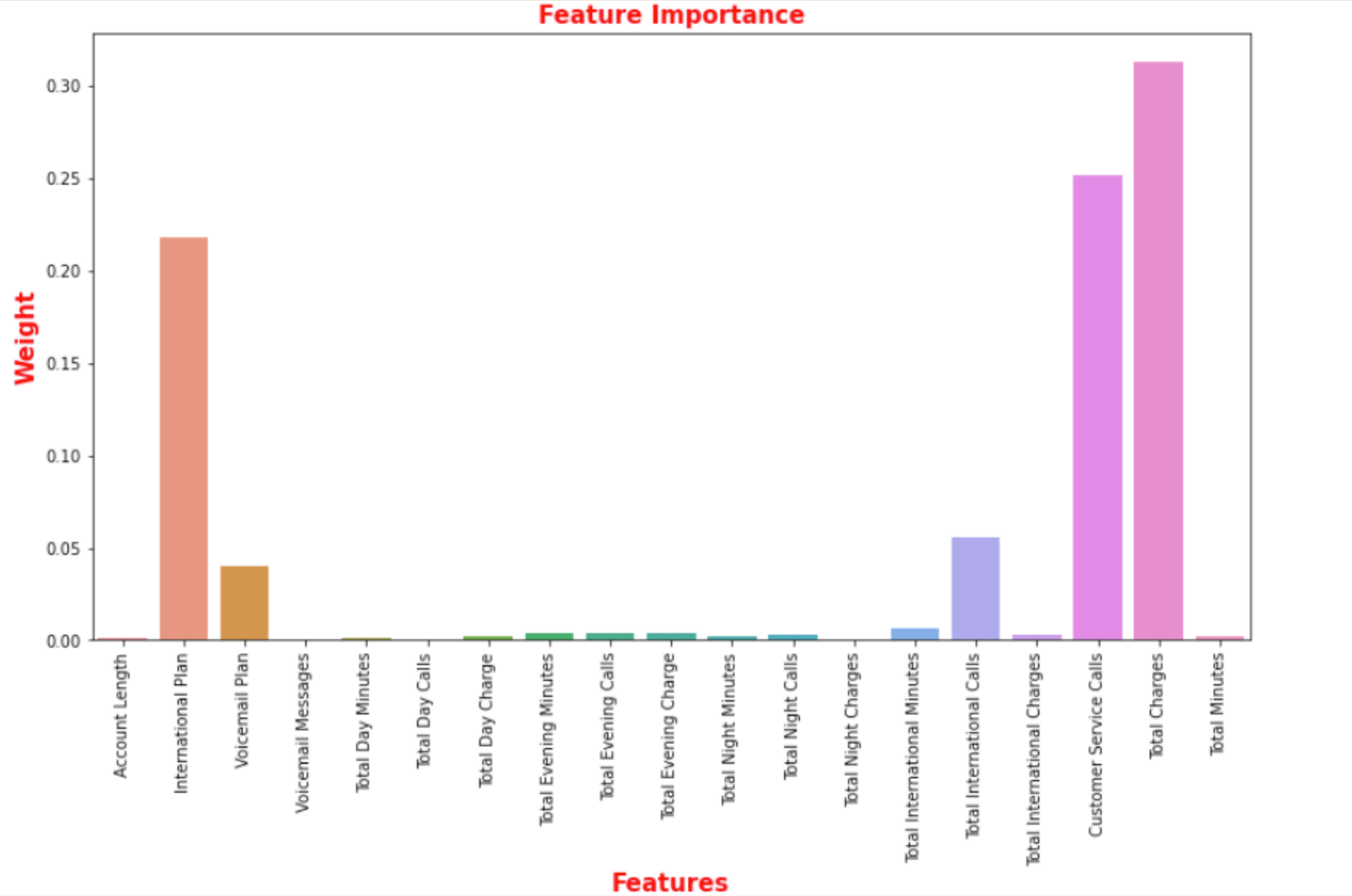
# Business Background

- Telecommunication company currently with 15% churn rate(customers who end subscription)
- Overall very clean dataset(No Nans or weird values)
- Dataset contains 3,333 records
- Identify feature importance to reduce that number by half

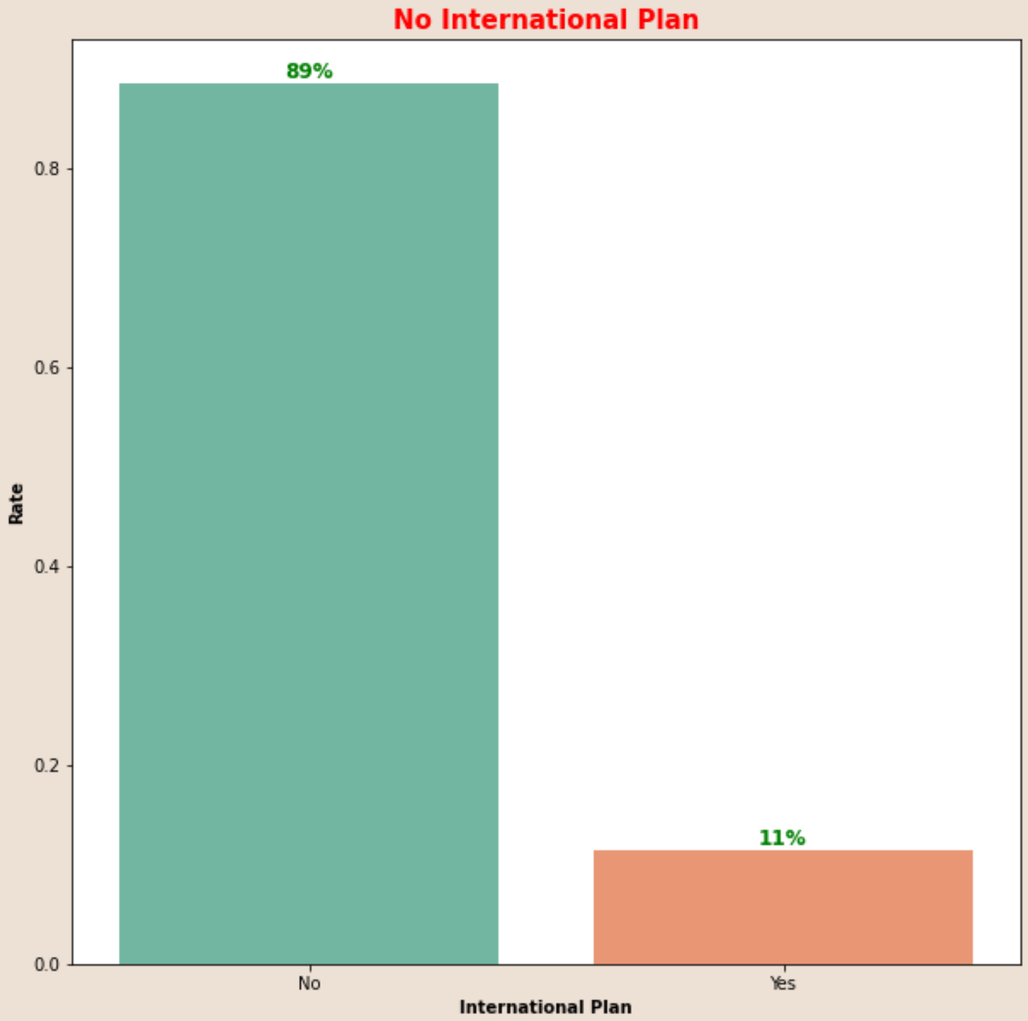
# Feature Importance

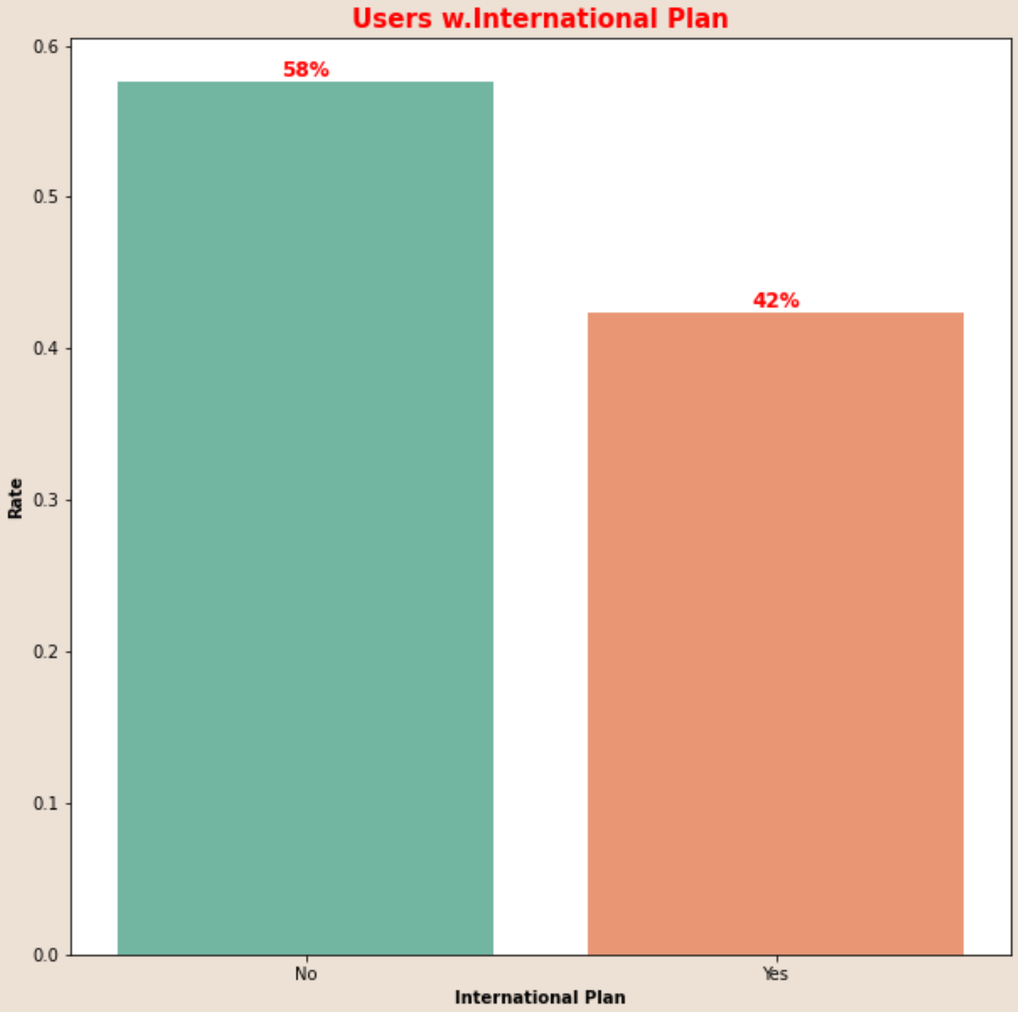



- Feature set by importance the same before and after EDA
- **International Plan**
- **Customer Service Calls**
- **Total Charges**(Day Calls, Evening Calls, Night Calls)

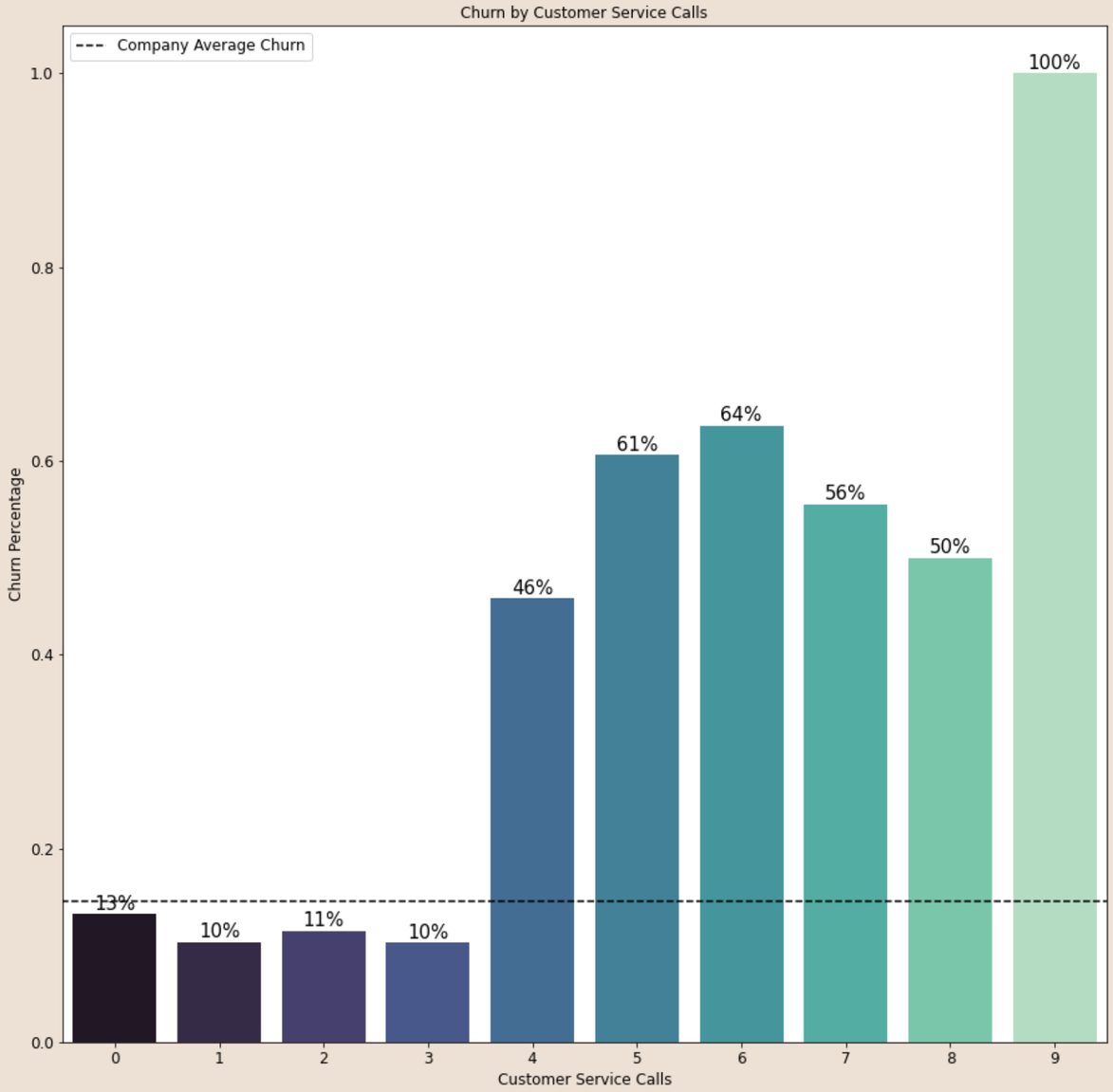
# International Plan

- Of all users that did have an International plan 42% of them Churn



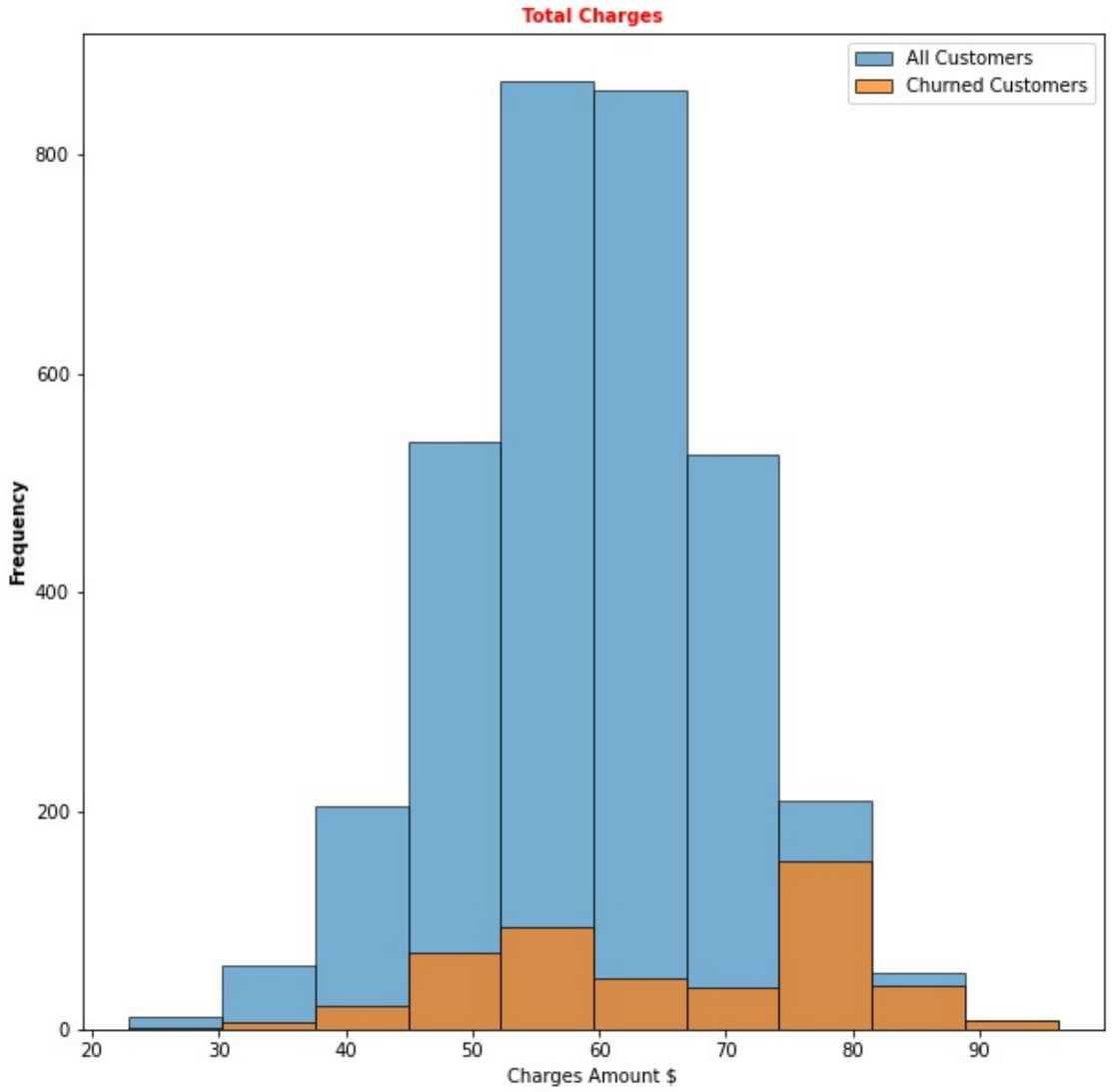



# Customer Service Calls




- Customers who made more than 4 calls increase their likeliness of churning by 4x
- If 9 calls are made they are 100% likely to leave
- Through EDA I was able to see that 80% of call customers have made at least 1 phone call to customer service

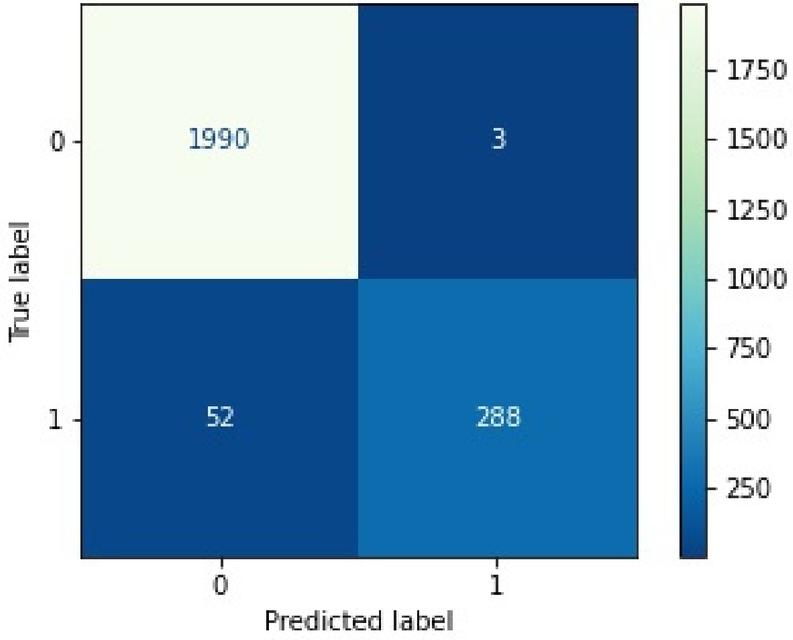
# Total Charges




- 75% of customers charged more than $70 are 80% likely to leave

# Model

| | Base Model(Train) | Base Model(Test) | Gradient Boosting(Train) | Gradient Boosting(Test) |
|---|---|---|---|---|
| **Accuracy** | 0.78 | 0.77 | 0.97 | 0.98 |
| **Precision** | 0.38 | 0.35 | 0.98 | 0.98 |
| **Recall** | 0.76 | 0.74 | 0.84 | 0.88 |
| **F1 Score** | 0.5 | 0.48 | 0.91 | 0.92 |




- Gradient boosting model performed the best with extremely well precision and solid **Recall** but not ideal accuracy
- Recall metric importance, misidentifying someone as churned more costly than missing someone who churned

# Recommendations

- Begin monitoring customers with more than 3 calls to customer service
- Tiered pricing structure pricing for total charges for individual plans
- Cut down on International plan premium for a month as almost half of those churn

## Future Findings

- Would like to get dates to gauge metrics better
- Competitor presence
- Pricing structure for different plans

# Questions?

- https://github.com/CarlosGG18
- CarlosGovea18@gmail.com
- https://www.linkedin.com/in/carlos-govea-427a25147/