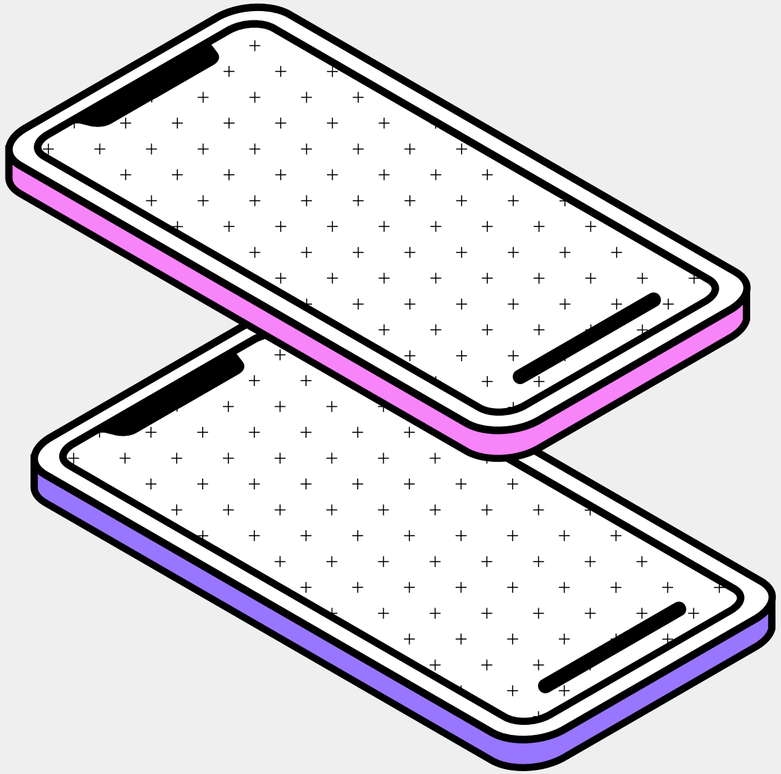
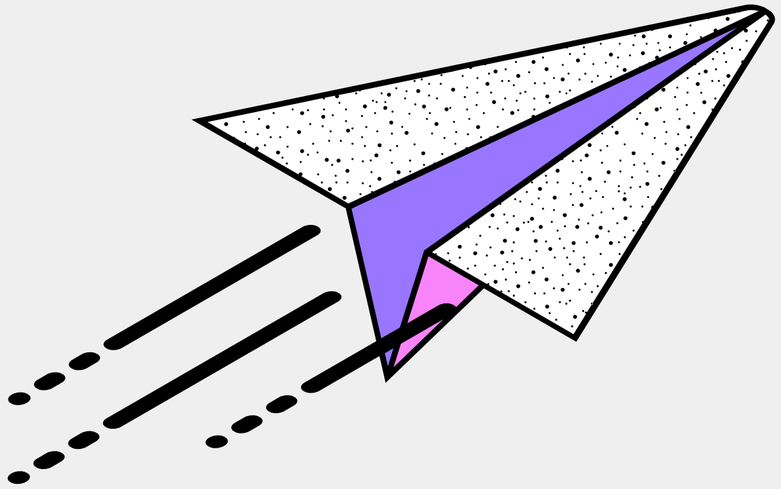
TO CHURN OR NOT TO CHURN

TELECOM CUSTOMER RETENTION





November 17, 2023

TEAM

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Github / Presentation Lead

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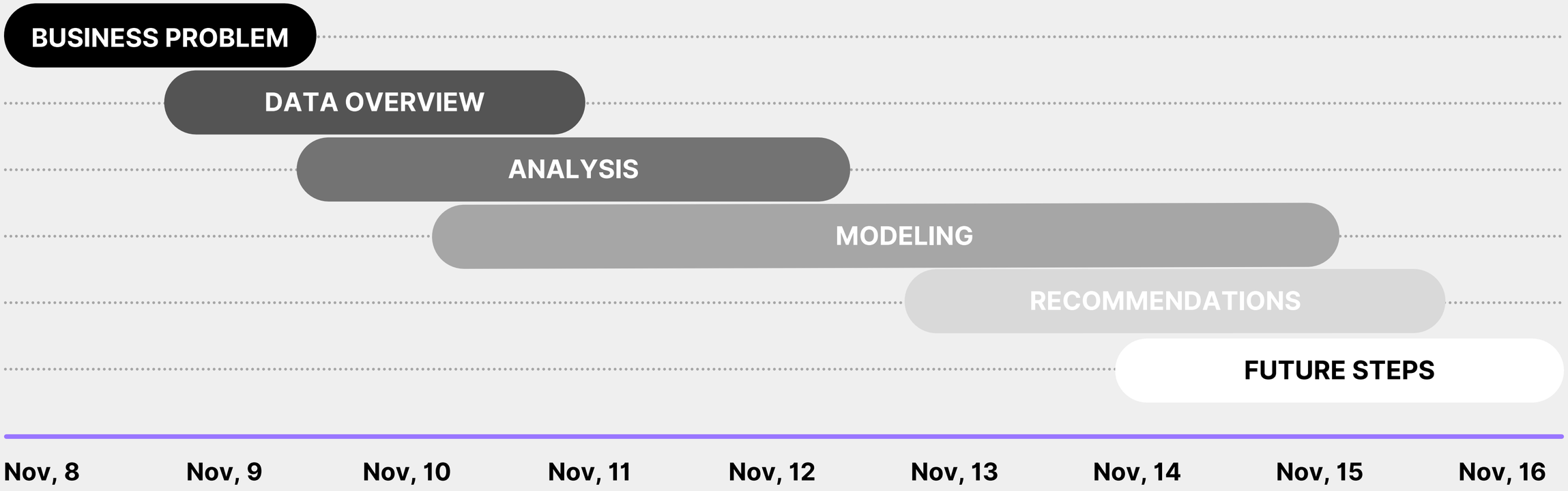
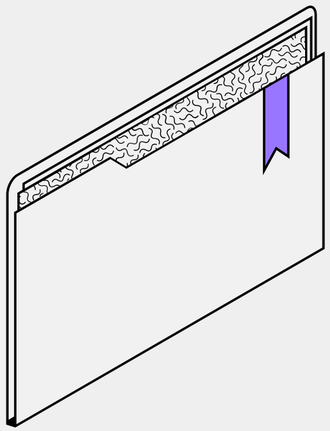
Tech Lead

PROJECT AGENDA



NOTE: No Subject to revision.

BUSINESS PROBLEM



Our client is SyriaTel, a telecommunications company, hoping to improve client retention.

The business problem is to predict patterns in churn, and recommend strategies to curb churn.

FINDINGS

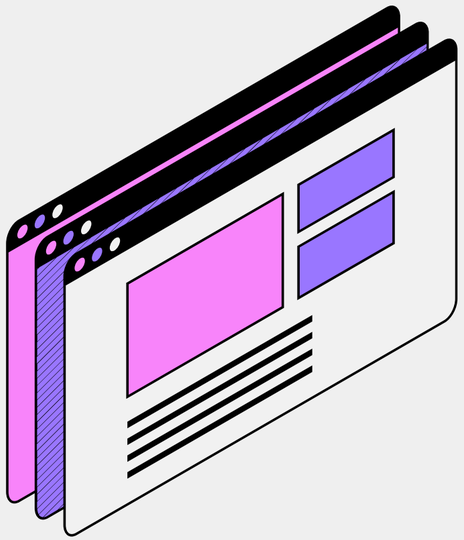
Three features explain over half of churn:

1. **customer service calls**
2. **total day minutes**
3. **international plan**

The strongest model is LightGBM predicting the best F1 score

Every additional call to customer service lowers a client's probability of staying by 48%

DATA OVERVIEW



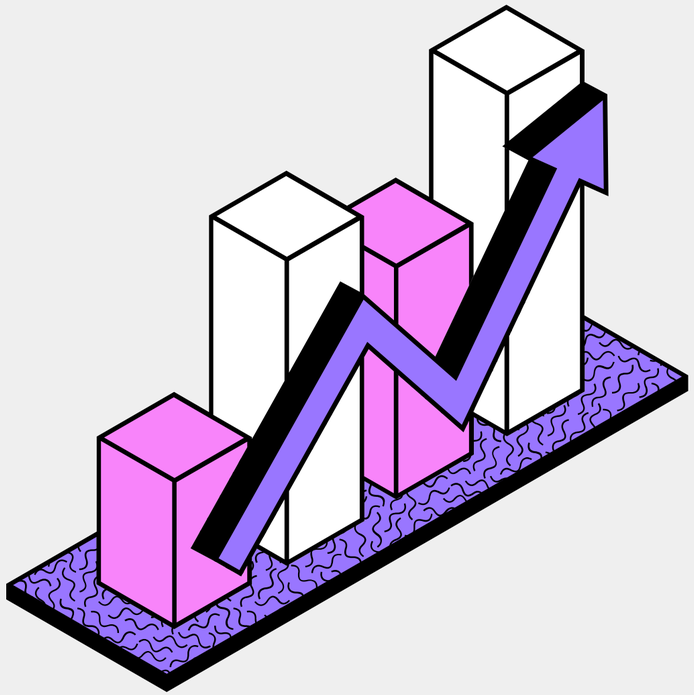
The data source is SyriaTel customer churn dataset

Limitations:

- No information on timeline
- Dataset last updated 6 years ago

Imbalanced target class

ANALYSIS



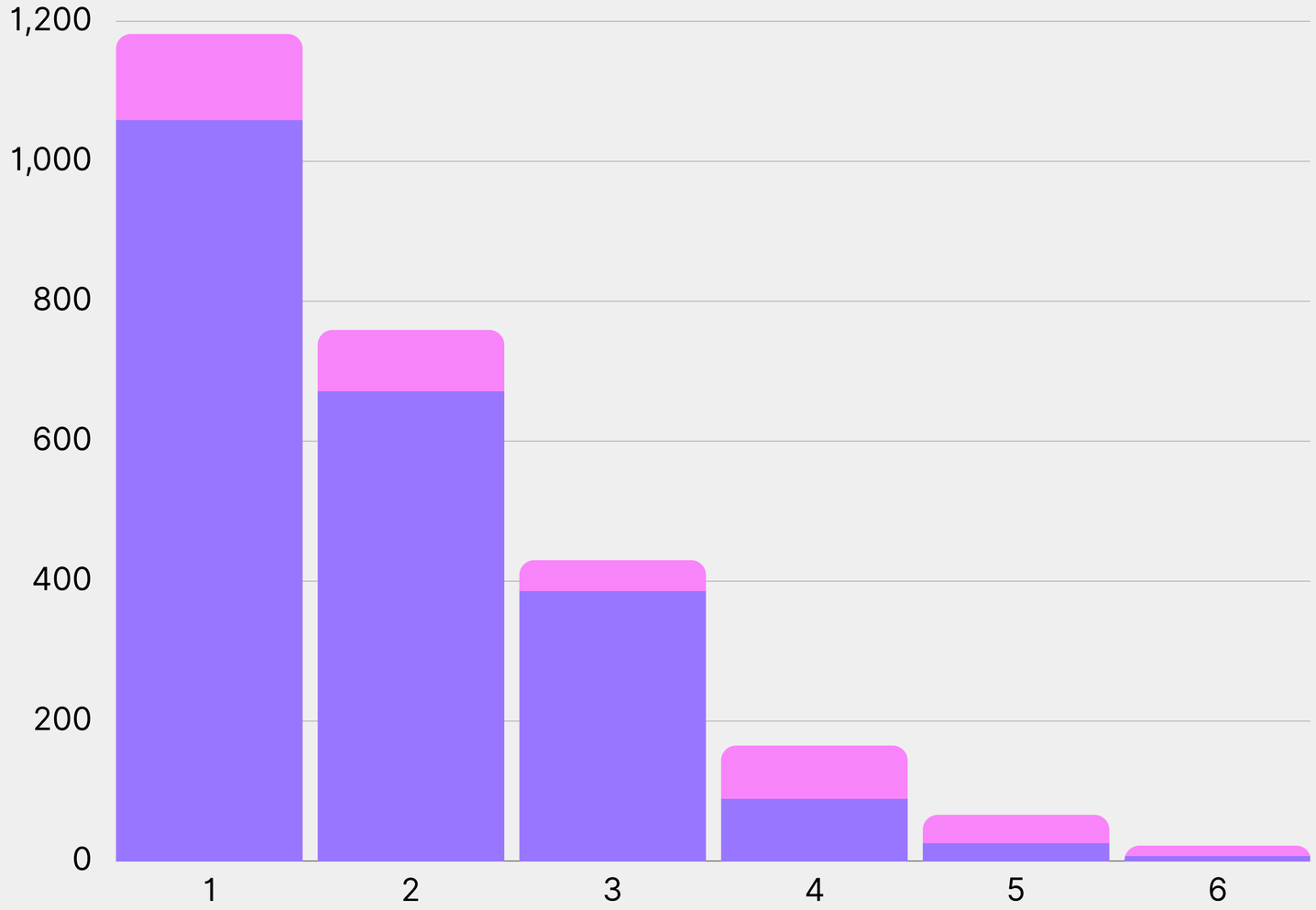
Three features explain over 56% of churn

customer service calls: 19.58%

total day minutes: 19.01%

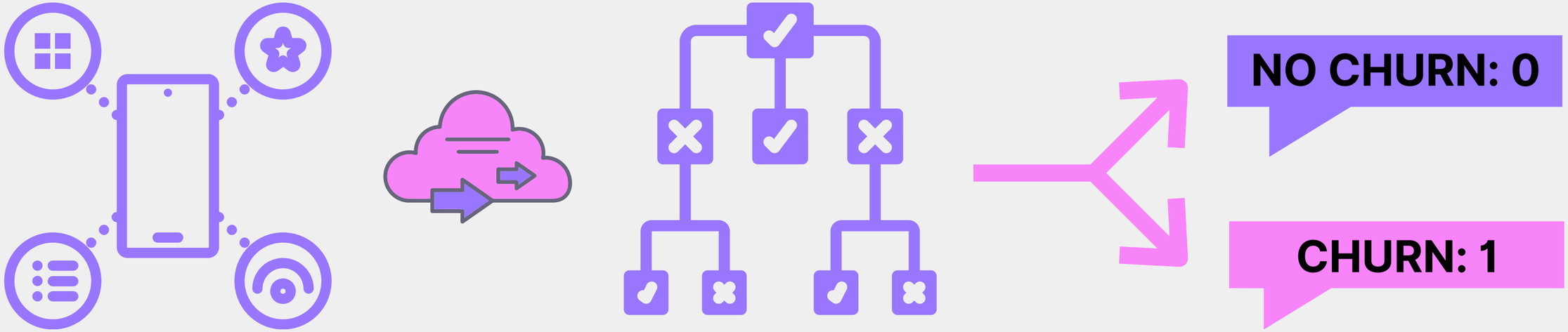
international plan: 17.74%

Every additional call to customer service lowers a clients probability of staying by 48%*



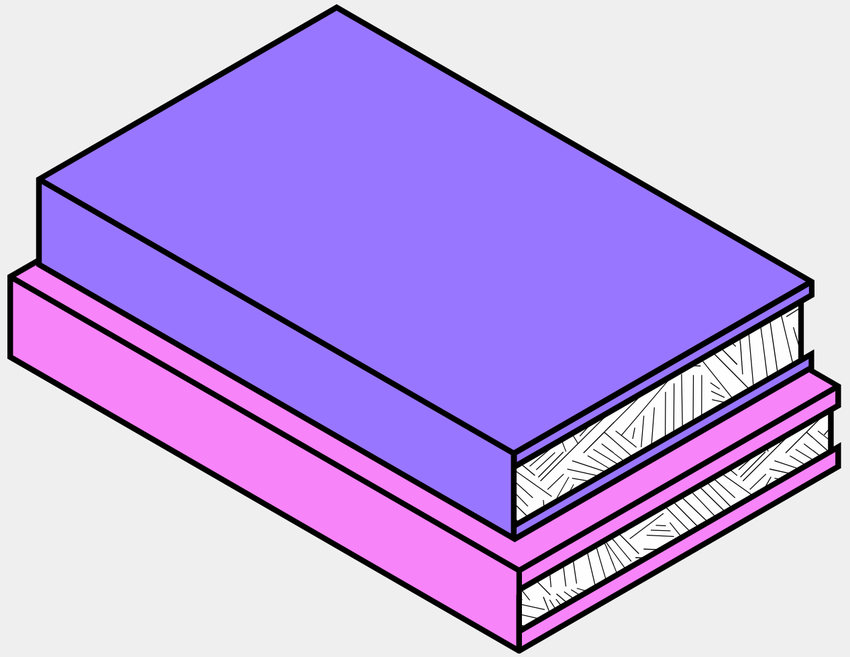
*holding everything else in the model constant.

LIGHT GBM MODEL



ACCURACY SCORE: 84.9

Conclusion



FINDINGS

Three features explain over half of churn:

1. **customer service calls**
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3. **international plan**

The strongest model is LightGBM,
predicting an accuracy score of 84.9%

Every additional call to customer service lowers a client's probability of staying by 48%

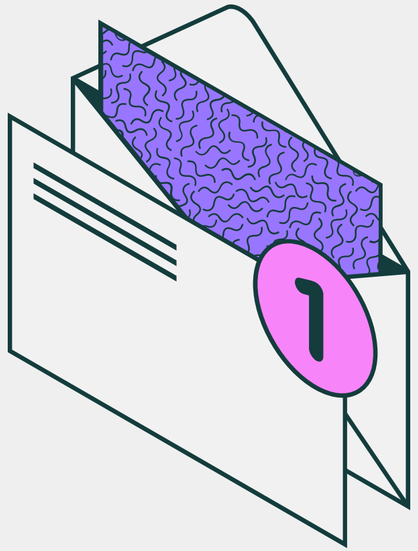
RECOMMENDATIONS

- **Incentivize phone calls and engagement with the plan.**
  Happy WiFi, happy life!
- **Improve customer experience with the international plan.**
- **Address client needs.**
  Less customer service calls is better.

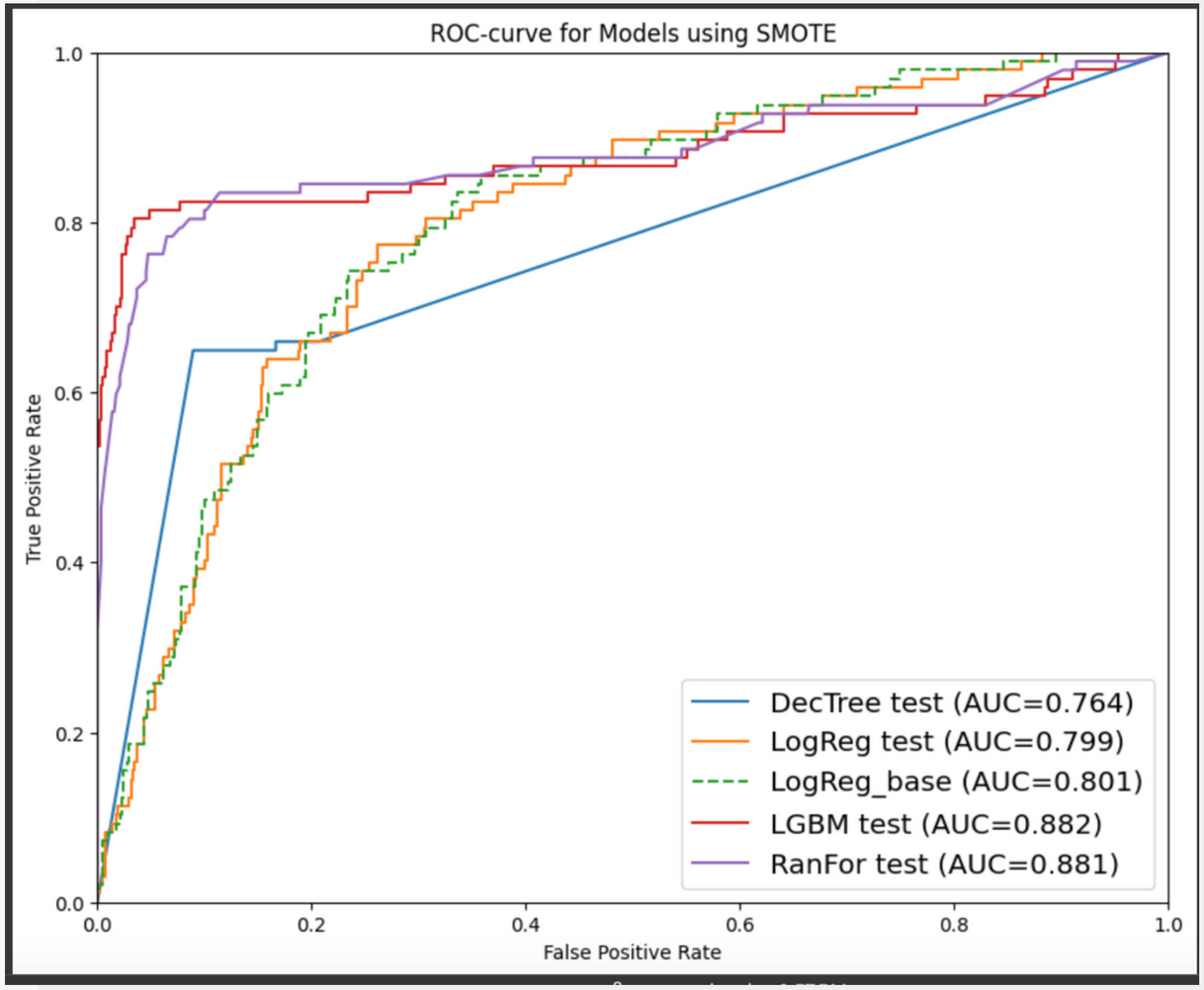
NEXT STEPS

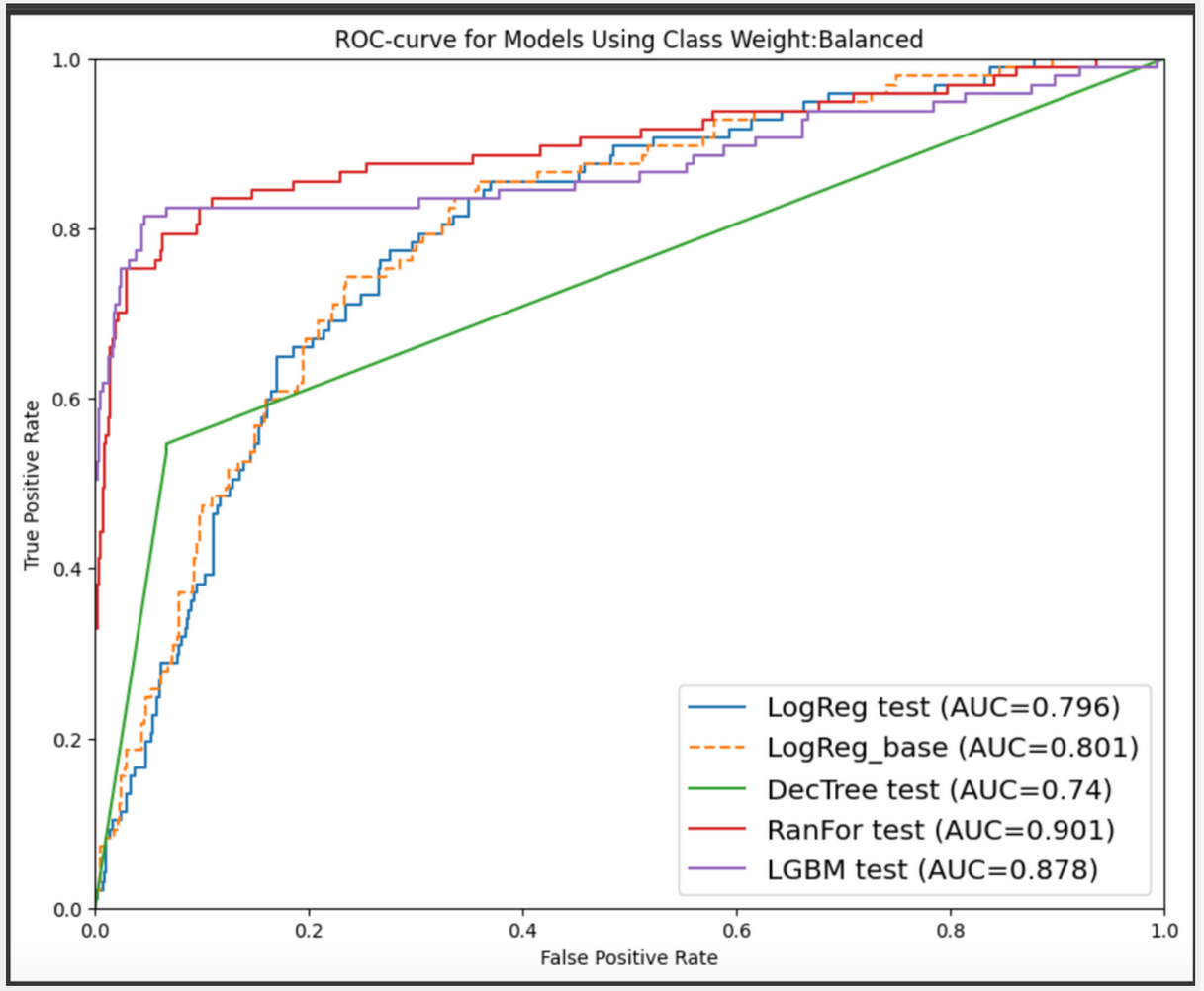
- Compare to other telecommunications companies.
- Pair with an NLP model to better understand client feedback.
- Add information such as start and stop of membership to confirm relevancy of all user data.

Do you have any questions?



Appendix I


ROC-curve for Models using SMOTE
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
DecTree test (AUC=0.764)
LogReg test (AUC=0.799)
LogReg_base (AUC=0.801)
LGBM test (AUC=0.882)
RanFor test (AUC=0.881)


ROC-curve for Models Using Class Weight:Balanced
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
LogReg test (AUC=0.796)
LogReg_base (AUC=0.801)
DecTree test (AUC=0.74)
RanFor test (AUC=0.901)
LGBM test (AUC=0.878)