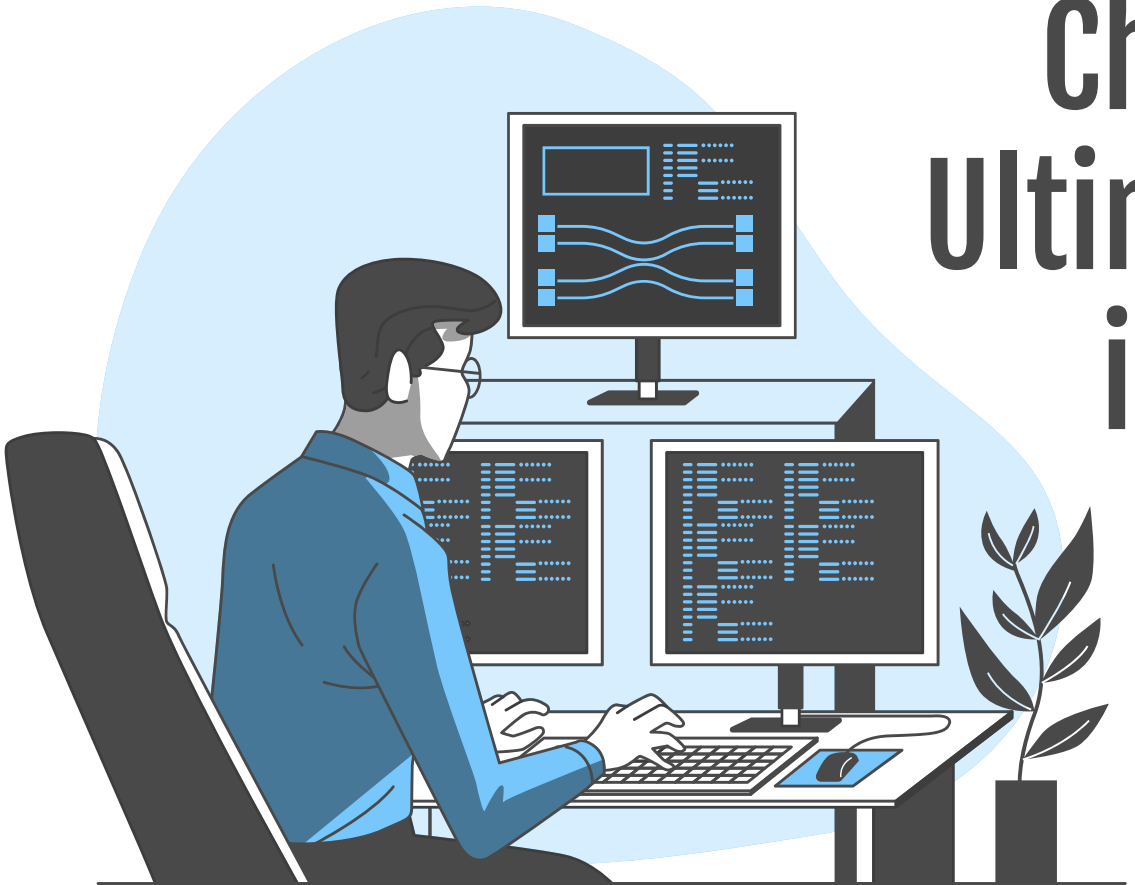
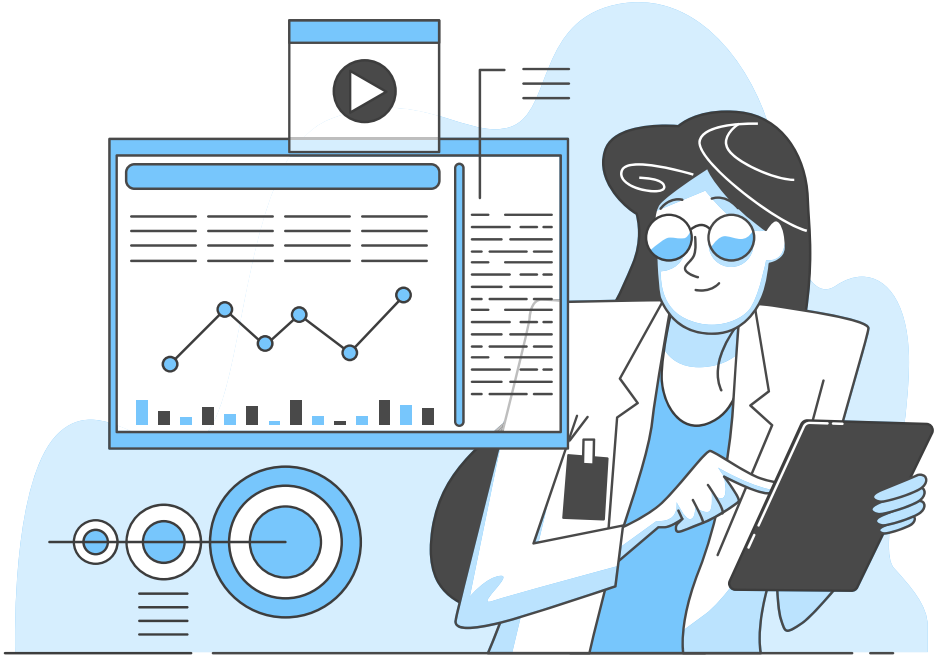


Churn Ultimatum inc.

On a mission to uncover hidden truths about customer retention

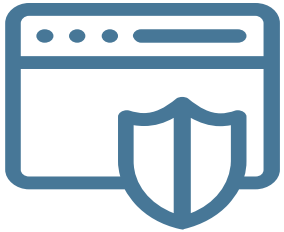
Table of Contents



Understanding Churn

Identify Precisely

Focus on customers who will most likely churn



Wasted Resources

Ensure effective allocation of resources

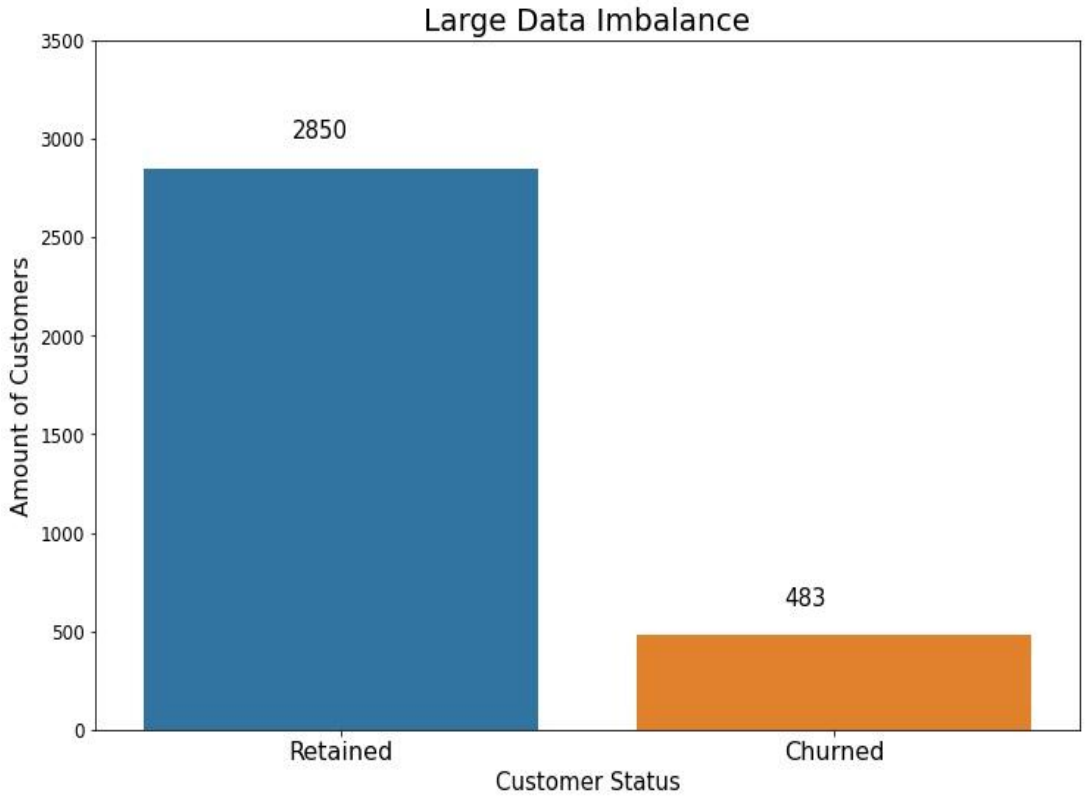
Model Performance

	Predicted: No-Churn	Predicted: Will Churn
Actual: No-Churn	Predicted not to churn correctly	**Predicted to churn but actually not going to churn**
Actual: Will Churn	**Customer will churn and model did not predict it.**	Predicted to churn correctly

Large Data Imbalance

Much **fewer churned** data points

Can be **difficult to predict** a minority class



Dummy Model

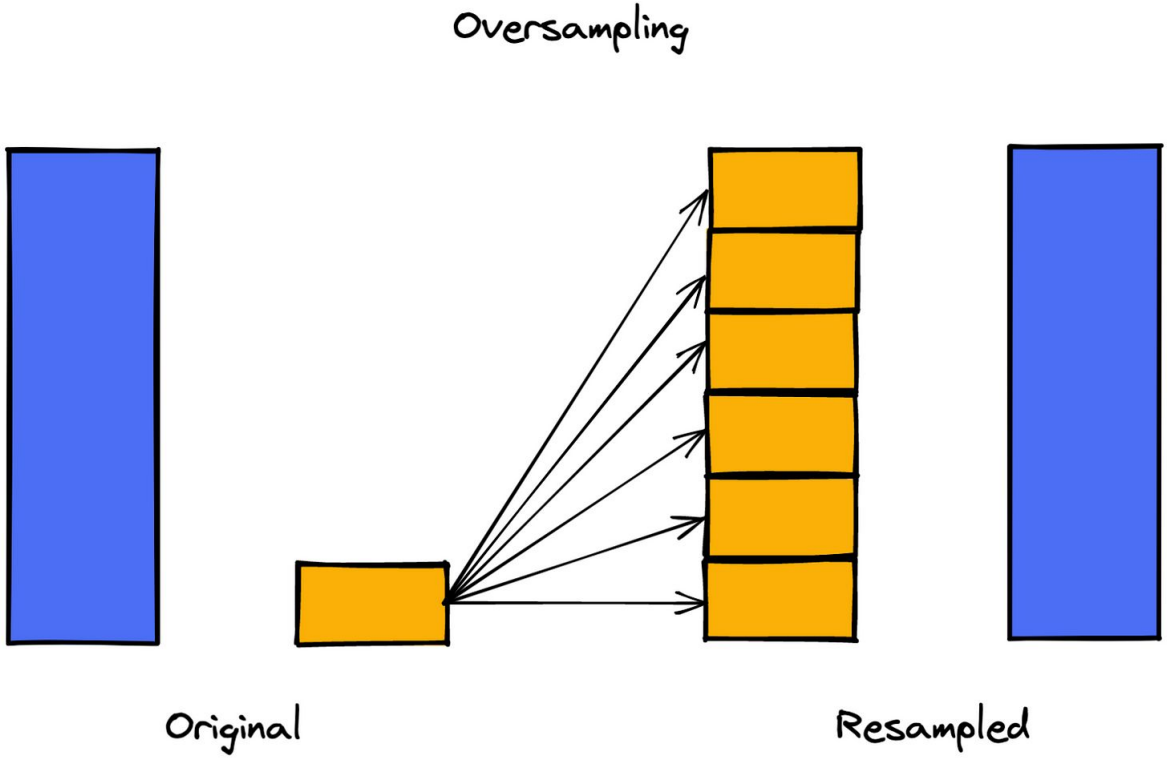
128 times predicted customer would churn but did not.....

... or **128** times resources wasted

0.13 Precision score

	Predicted: No-Churn	Predicted: Will Churn
Actual: No-Churn	Predicted not to churn correctly **727**	**Predicted to churn incorrectly** **128**
Actual: Will Churn	**Predicted to not churn incorrectly** **123**	Predicted to churn correctly **22**

SMOTE



Final Model: test results

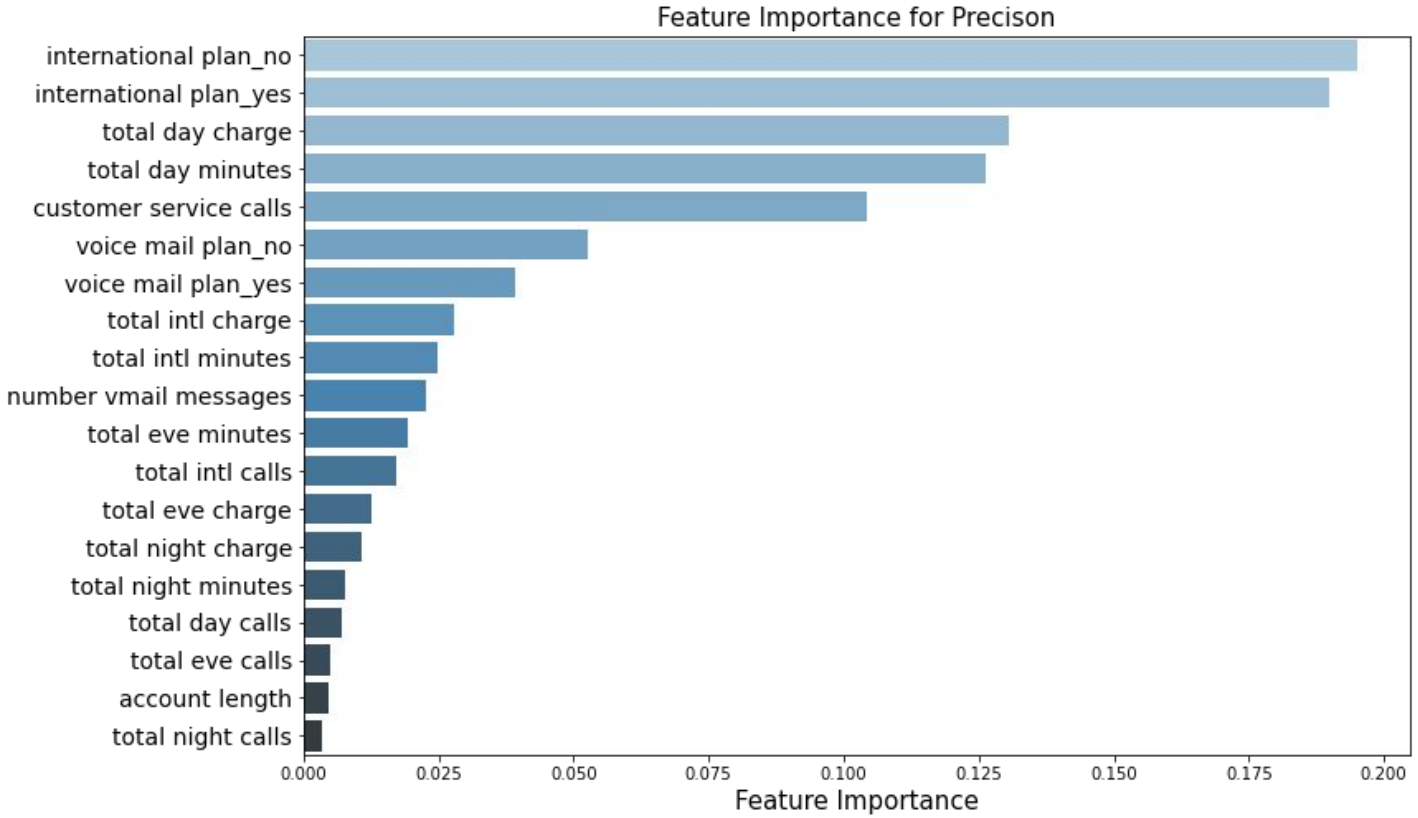
0 times predicted customer would churn... Model may be **overfit**

Final model **does not predict all** churn

1.0 precision (.91 cross-val)

	Predicted: No-Churn	**Predicted:** Will Churn
Actual: No-Churn	Predicted not to churn correctly **855**	**Predicted to churn incorrectly** **0**
Actual: Will Churn	**Predicted not to churn incorrectly** **123**	Predicted to churn correctly **21**

Final Features

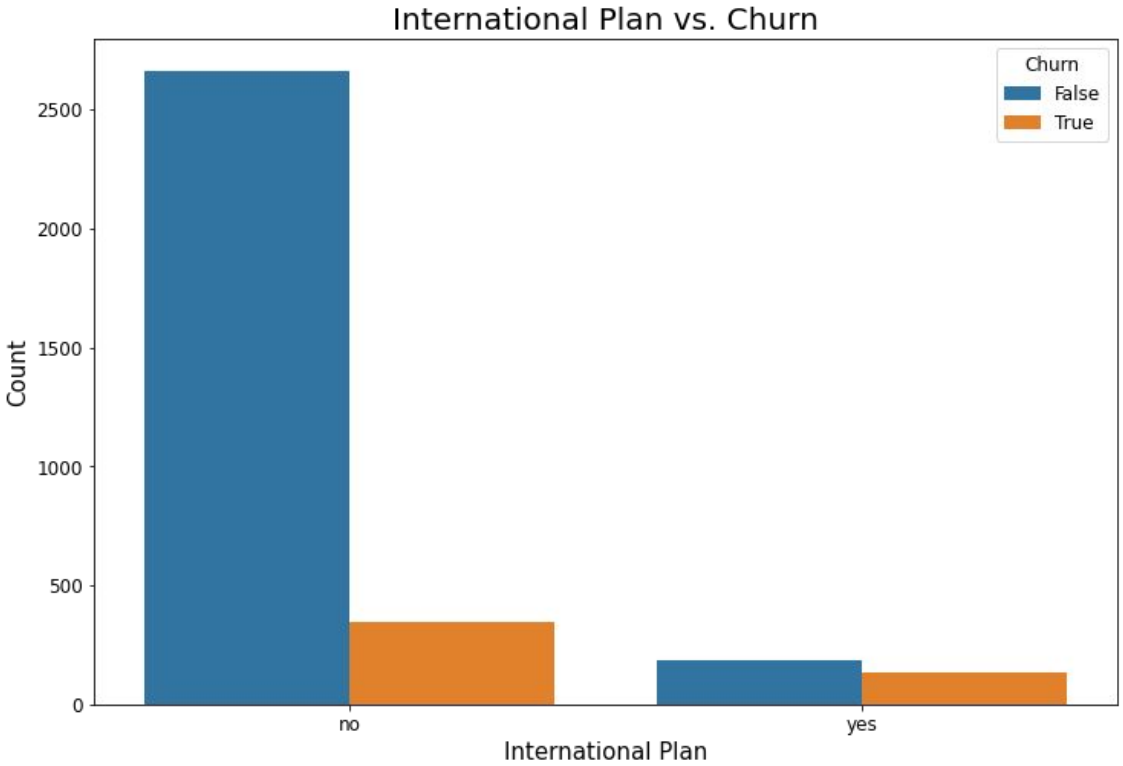


Final Features

Model shows highest importance for your **international plan**

Likely an area you will want to focus on

May want to consider an **indirect approach**



Conclusions

- **Precision** allows you to be confident with resource allocation

- Model is **precise** in targeting ACTUAL churn and not targeting FALSE churn. But still misses a lot of churn

- Model is more **precise** when it comes to international plan indicating this could be an area of concern.

Next Steps

Feature Engineering

Experiment by adding, removing, merging or transforming features

Adjusting Model for recall

Tweak the model to miss less positive cases by trying different algorithms and parameters

Analyze location features

Certain locations could be more competitive or provide worse coverage

Thanks!

Do you have any questions?

For additional info, contact Max Ross on GitHub
(https://github.com/ImMaxRoss)