

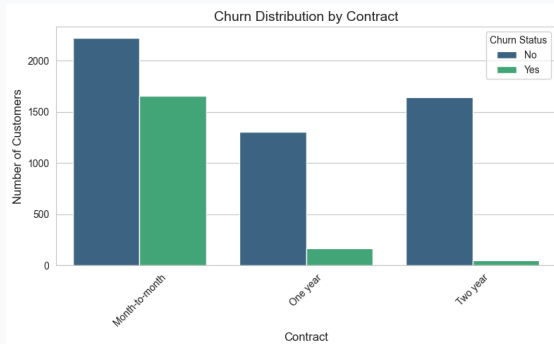
MACHINE LEARNING PROJECT

Customer Churn Retention Strategy

A machine learning approach to identifying at-risk customers and optimizing financial intervention.

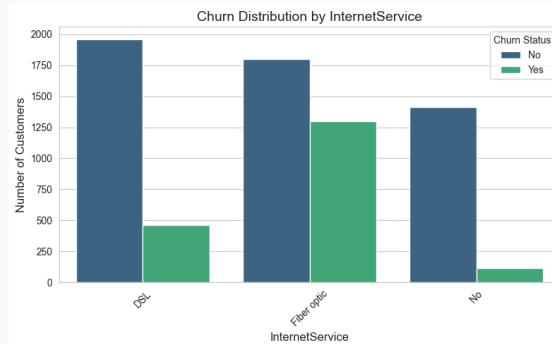
PROCESSING • EDA • MODELING • PROFIT

1. Key Drivers & Data Exploration



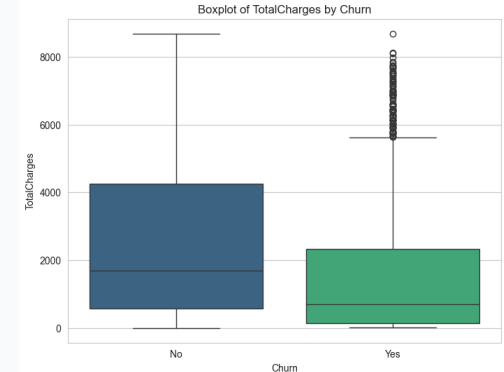
Contract Type

Month-to-month contracts are the single biggest risk factor.



Fiber Optic

Fiber users churn significantly more than DSL users.



The "VIP" Outliers

We **kept outliers**. High spenders are critical to revenue.

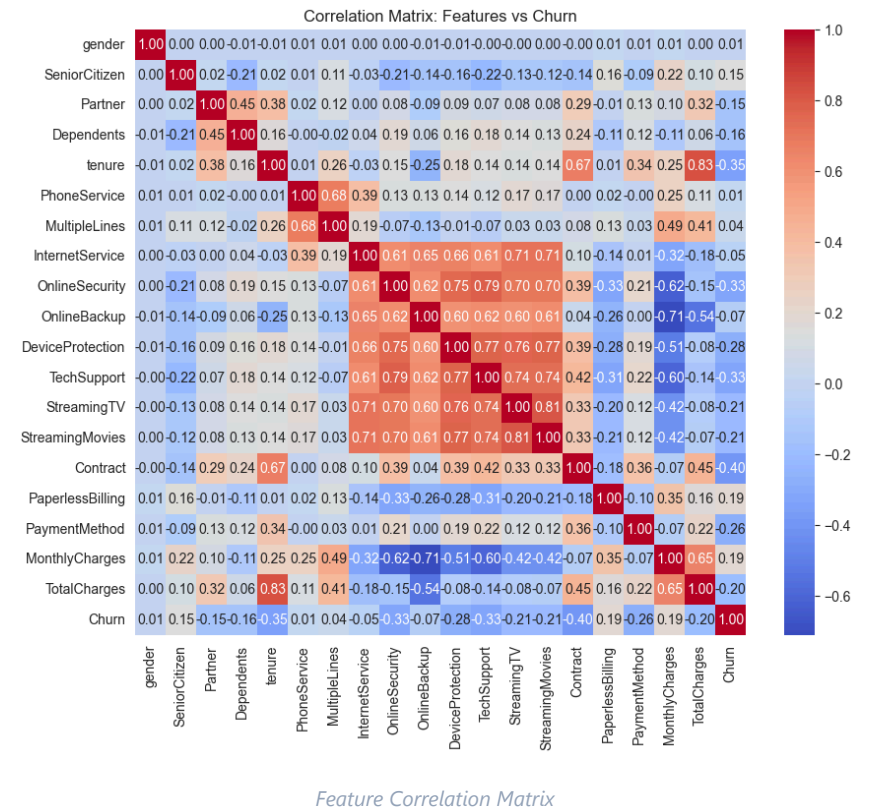
2. Modeling Strategy

Logistic Regression

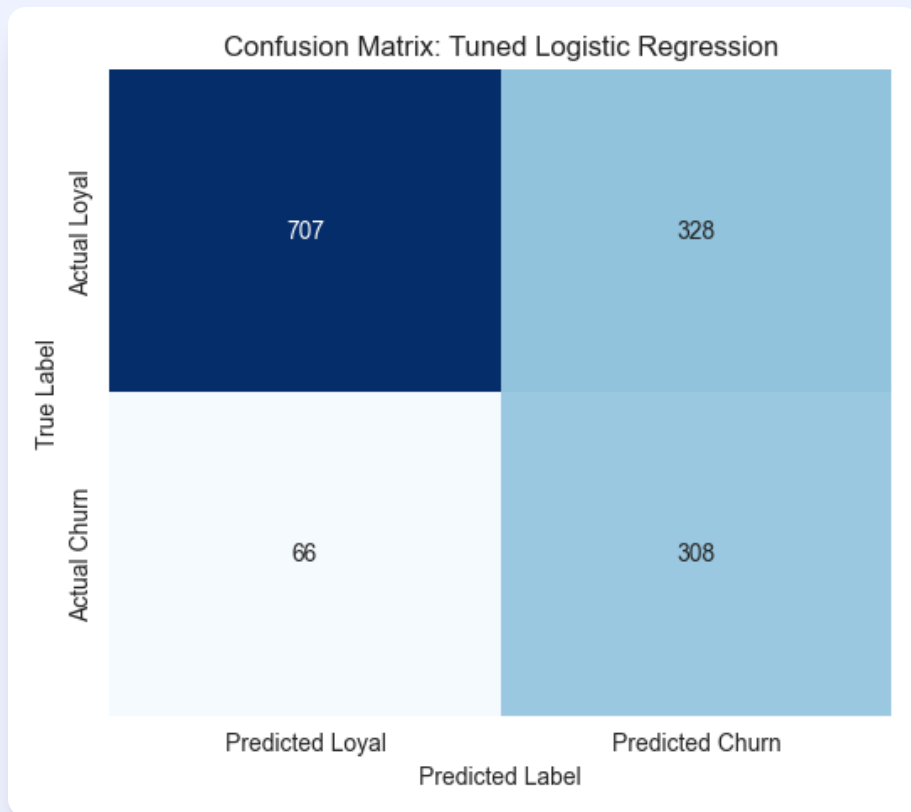
Selected for transparency. We need to explain *why* someone is churning to the marketing team.

Class Weights (1:3)

The model is penalized 3x more for missing a churner than for a false alarm. This forces high Recall.



3. Model Evaluation



TARGET METRIC

82% Recall

We successfully catch 8 out of 10 churners. The safety net is tight.

TRADE-OFF

48% Precision

We accept a ~50% "False Alarm" rate. The cost of a discount is low, but the cost of losing a customer is high.

4. Financial Strategy

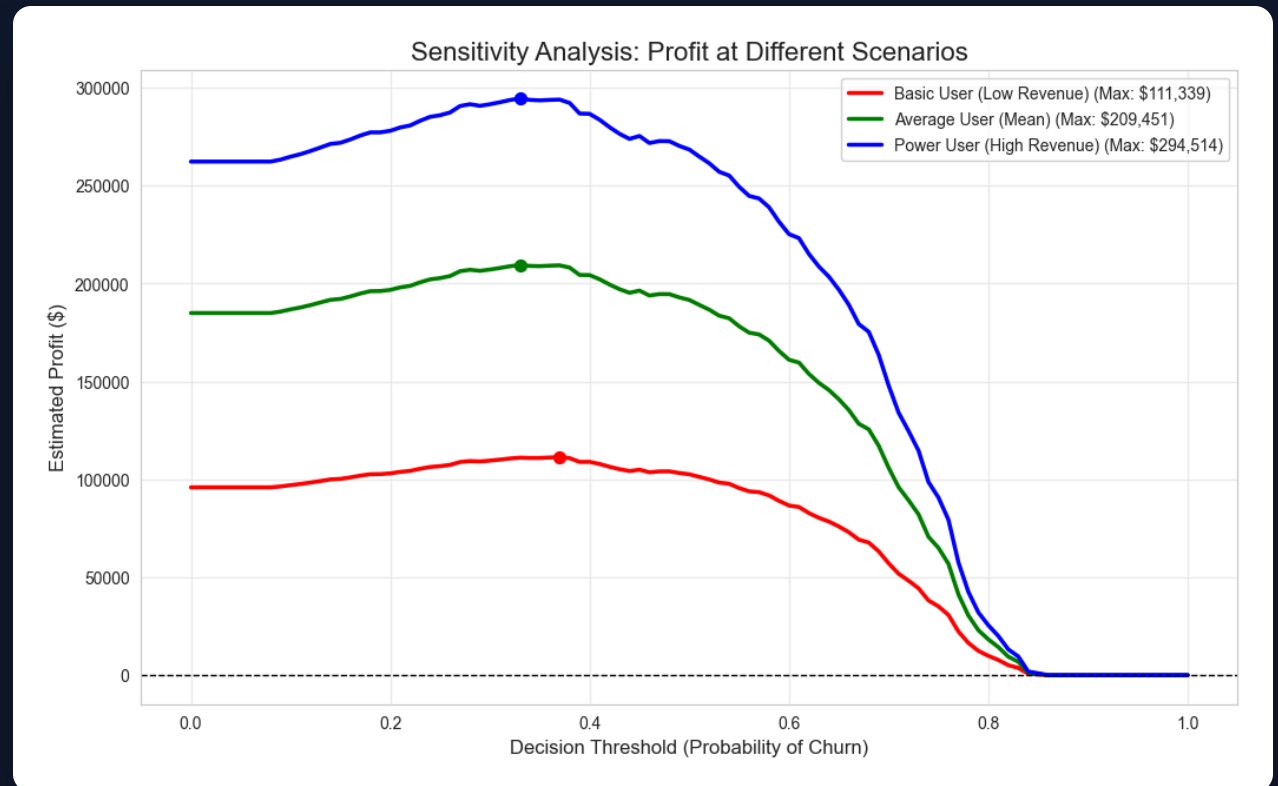
PROJECTED QUARTERLY PROFIT

\$294k

via Targeted Retention

The "Tiered" Strategy:

- **Power Users:** Target Aggressively
- **Avg Users:** Standard Threshold
- **Basic Users:** Low Priority



Ready for Deployment

We have transformed raw data into a quantifiable business strategy. The next step is A/B testing the high-risk "Power User" segment.

✓ 7,043 Customers Analyzed

✓ 82% Churn Detection

✓ \$294k Potential Value

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