

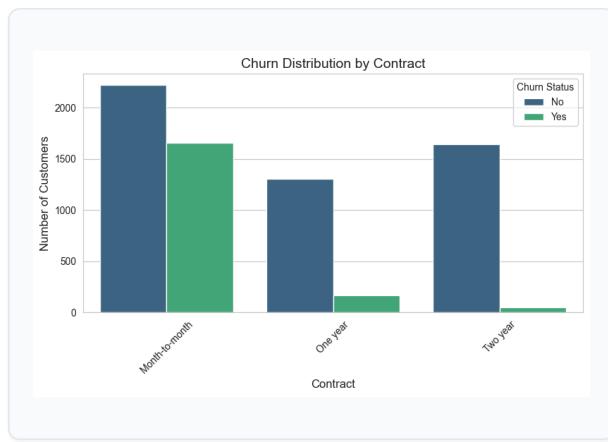
MACHINE LEARNING PROJECT

# Customer Churn Retention Strategy

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

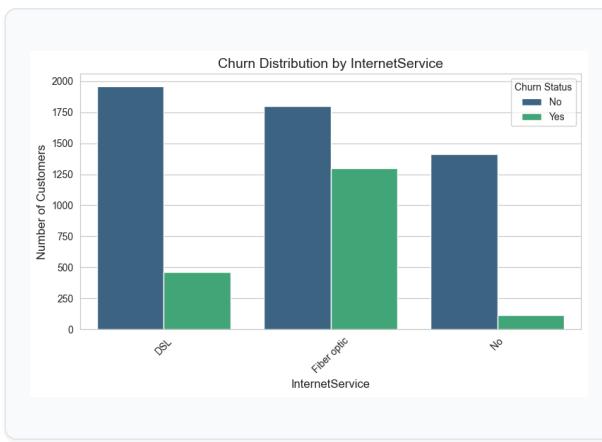
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# 1. Key Drivers & Data Exploration



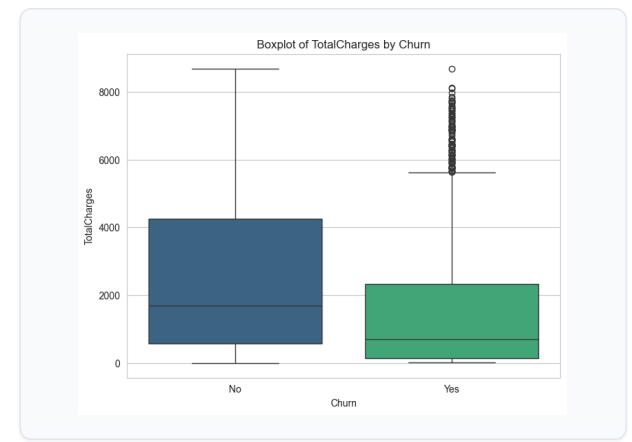
## Contract Type

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.

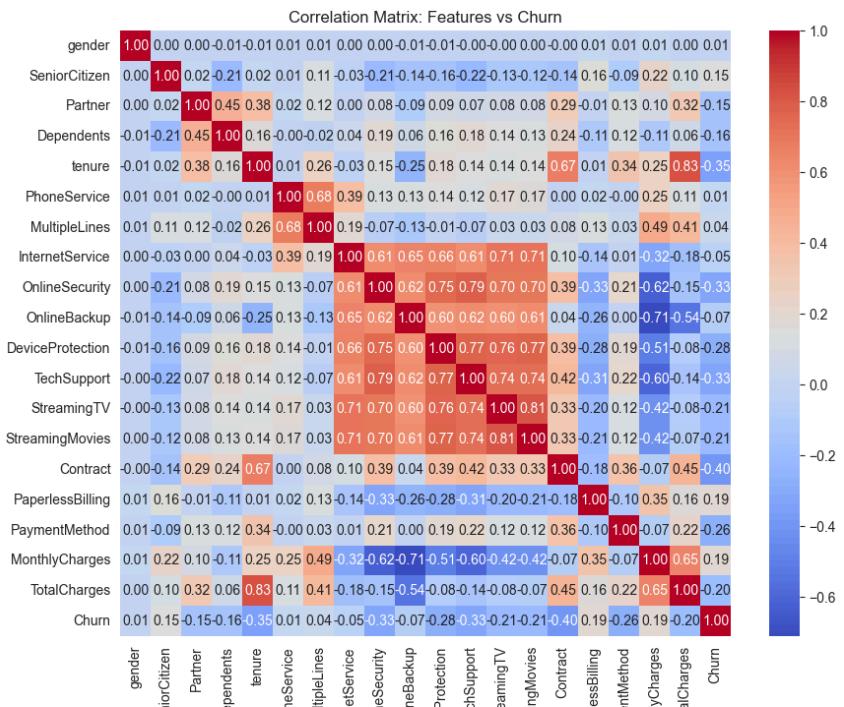
## 2. Modeling Strategy

### 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.



Feature Correlation Matrix

## 3. Model Evaluation

Confusion Matrix: Tuned Logistic Regression

		Predicted Label
True Label	Actual Loyal	707
	Predicted Churn	328
Actual Churn	66	308

### TARGET METRIC

**82%** Recall

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

### TRADE-OFF

**48%** Precision

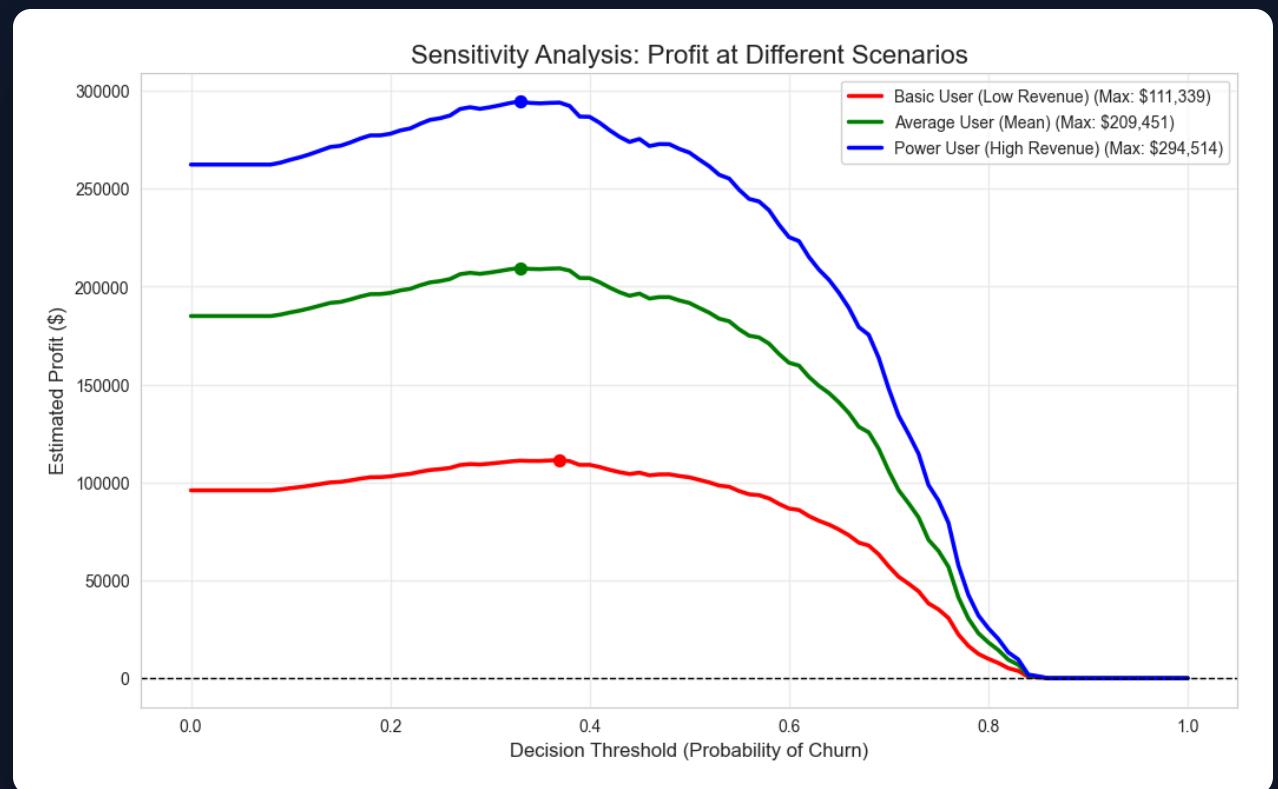
We accept a ~50% "False Alarm" rate. The cost of a discount is low, but the cost of losing a customer is high.

## 4. Financial Strategy



### 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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