

Telecom Churn Prediction

Capstone Project

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Project Objective

1

Predict churn

Predict customer churn in the telecom industry

2

Identify indicators

Key indicators that drive churn

3

Improve retention

Actionable recommendations to improve retention





Business Problem



Revenue loss

Customer churn leads to revenue loss



Costlier

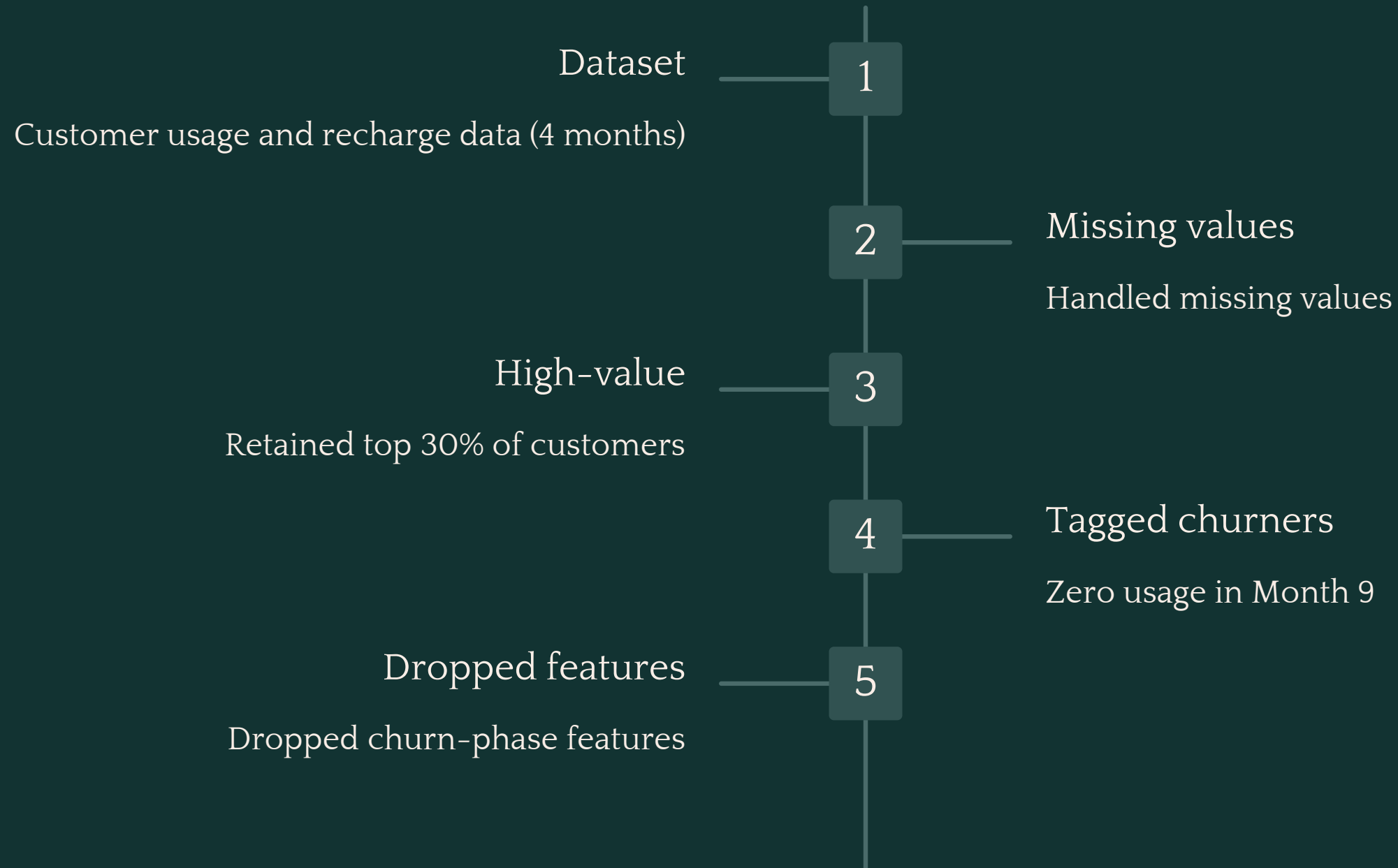
Acquiring a new customer is 5x costlier



Proactively prevent

Data-driven insights help proactively prevent churn

Data Collection & Preparation



Exploratory Data Analysis (EDA)

Churn Rate Observed

Declining recharge and data usage
correlate with churn

Roaming minutes

Strong churn indicators

Recharge amount

Strong churn indicators

Addressing Class Imbalance

1

Issue

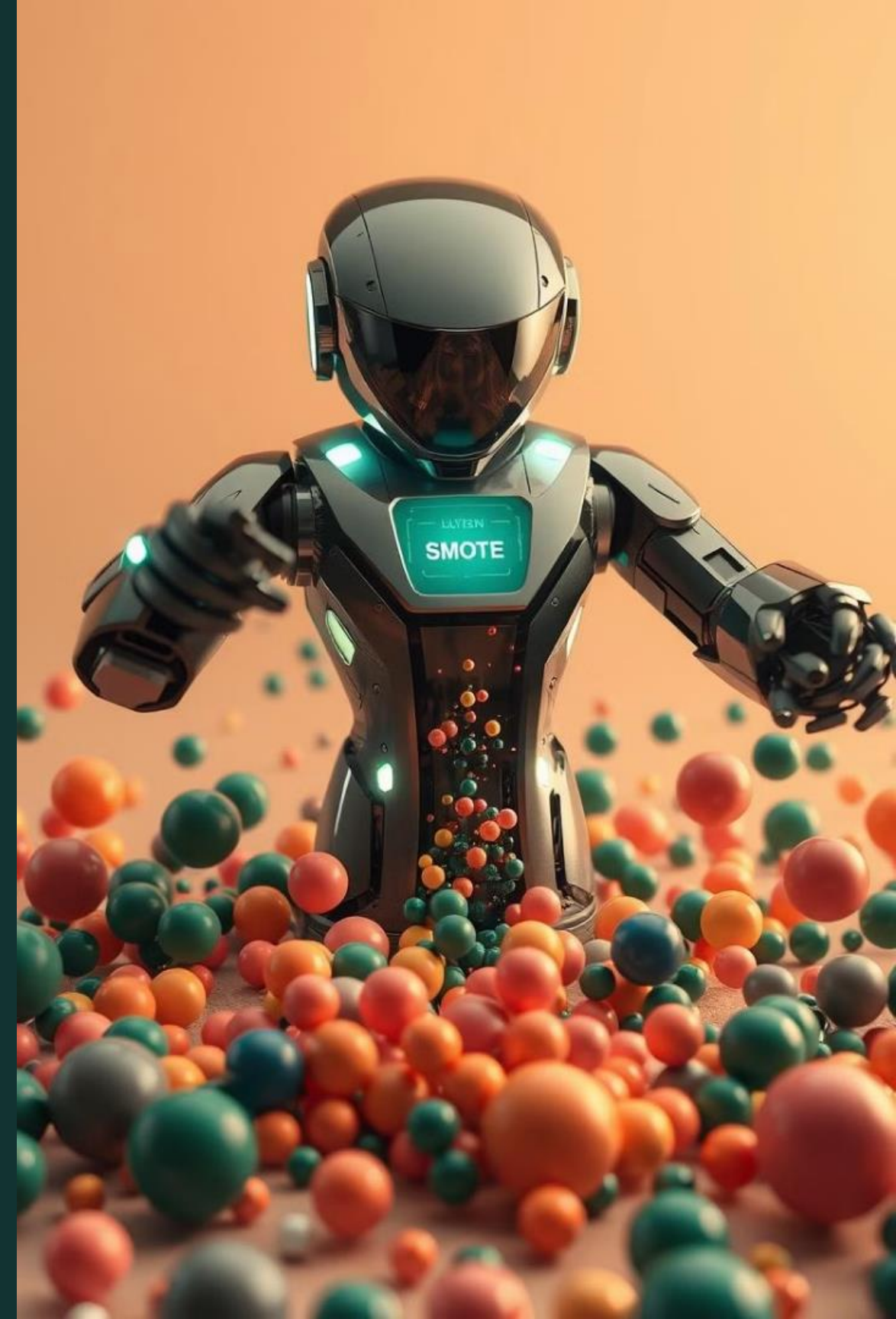
Churners were significantly fewer than non-churners

2

Solution

Applied SMOTE to balance data

Synthetic Minority Over-sampling Technique



Machine Learning Model

Algorithm

Random Forest Classifier

Tuning

Optimized via RandomizedSearchCV

Accuracy

95%

ROC-AUC

Score: 0.989



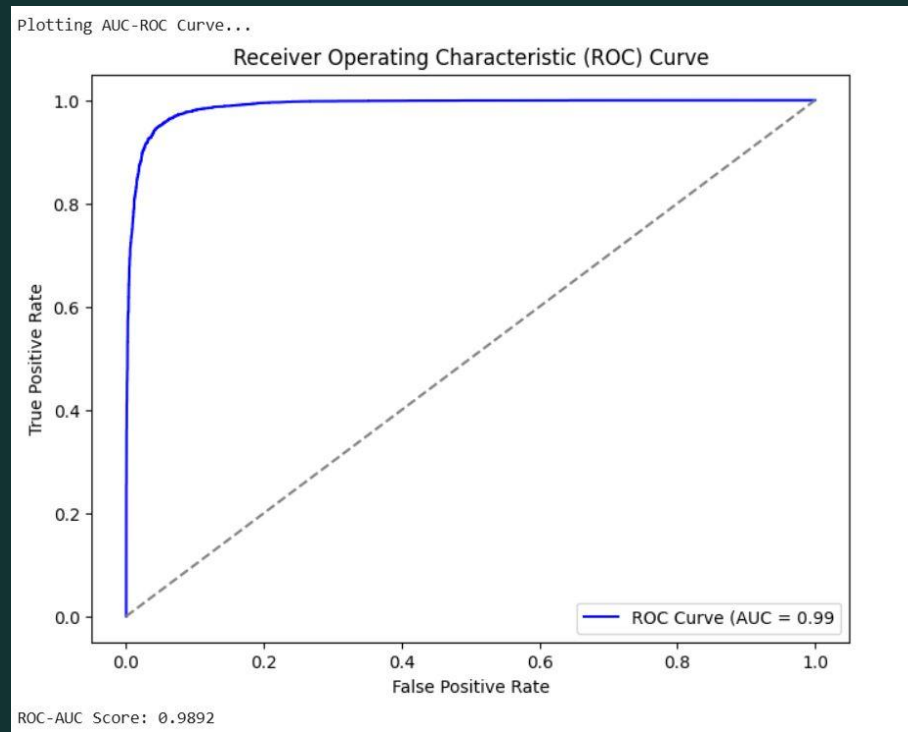
Key Feature Importance

1. Roaming calls and minutes
2. Total recharge and max recharge
3. Total call duration
4. Average revenue per user

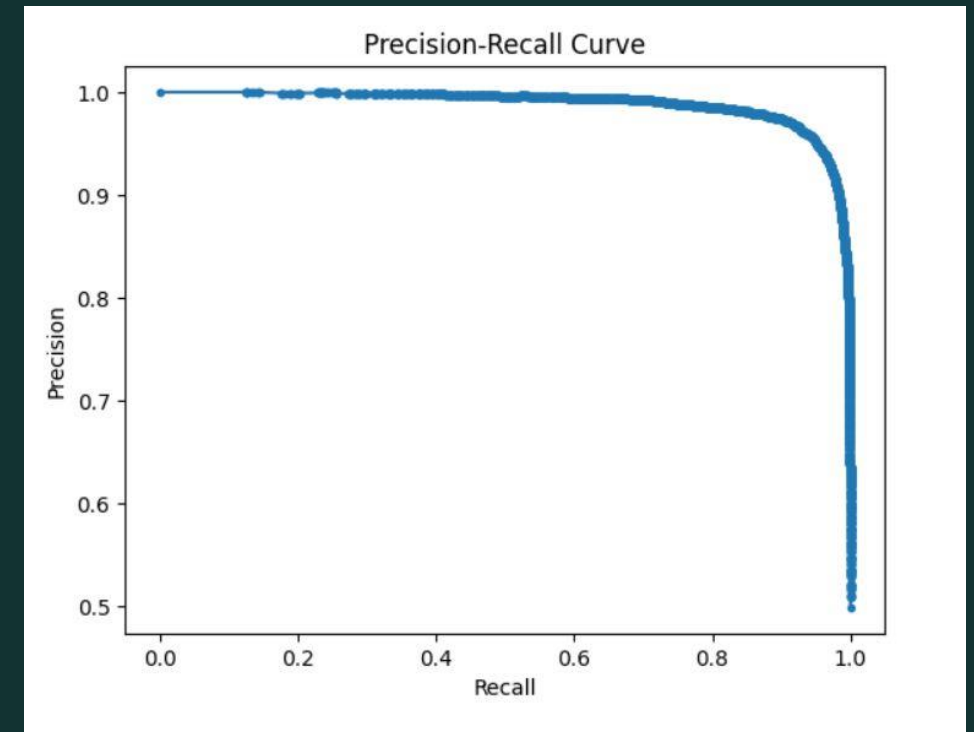
Top Churn Indicators

Model Performance Evaluation

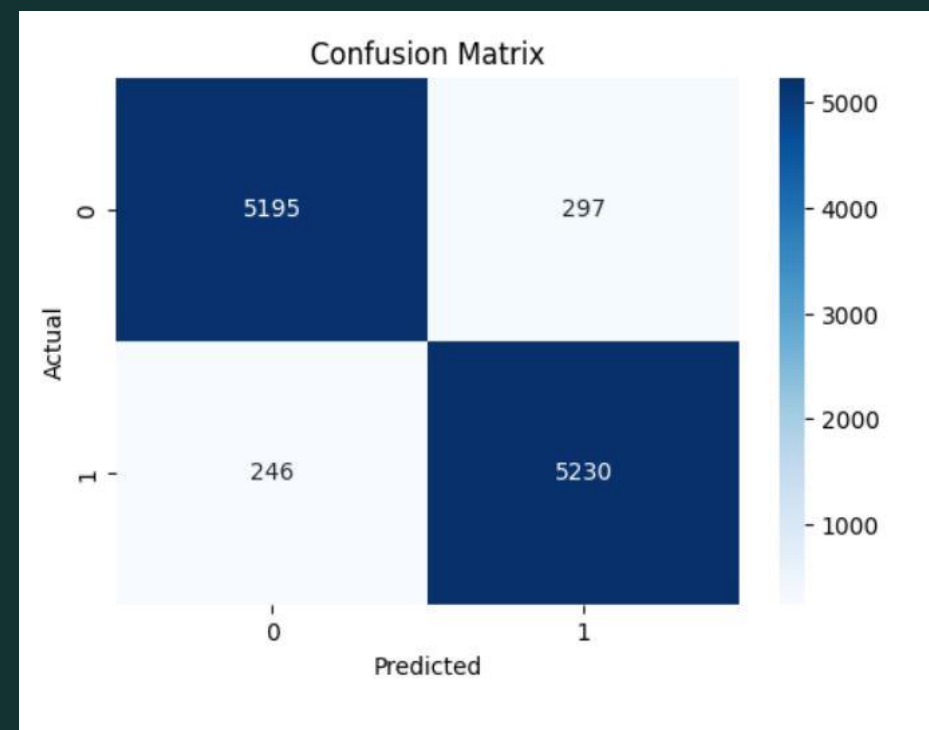




Confusion Matrix



ROC Curve



Precision Recall Curve

Business Recommendations

1

Personalized Discounts

Offer personalized discounts

2

Early Intervention

Identify declining recharge patterns

3

Marketing Focus

Target reduced data users

Thank You!

✉ Questions? Let's discuss. 🚀

