

HOME CREDIT

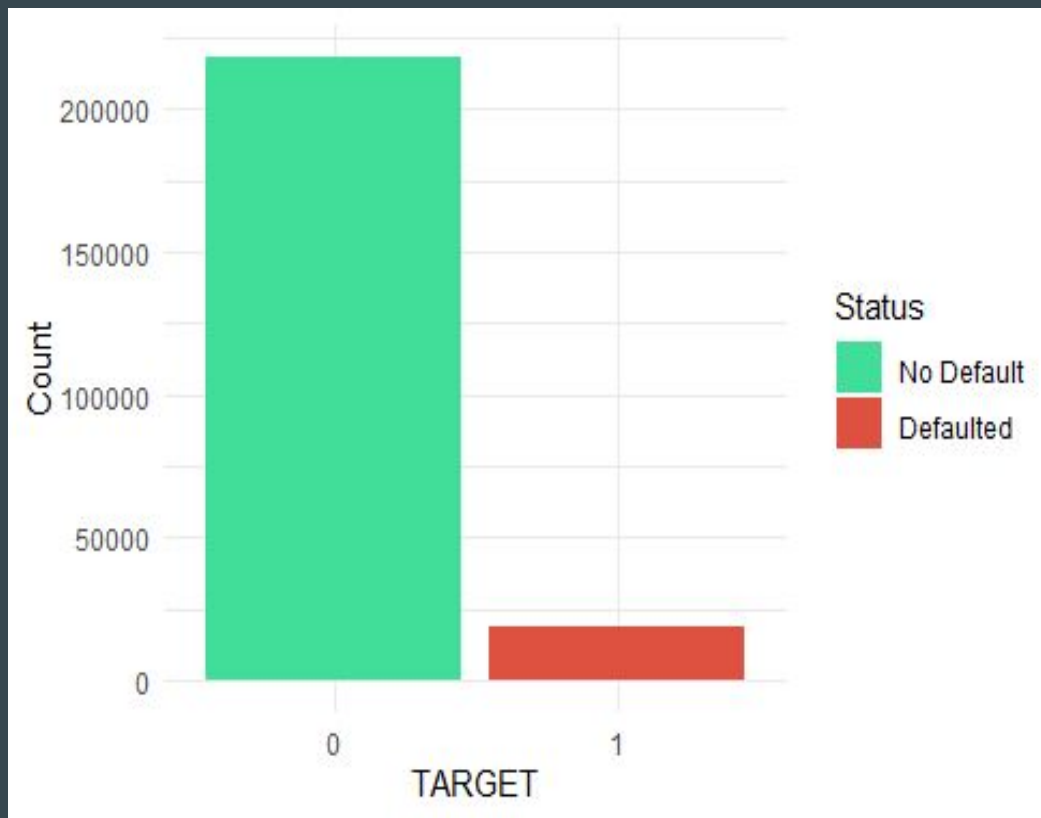
Loan Default Analysis

Business Problem Statement

- Serves Underserved Clients with unconventional financial histories.
- Collected data on client unique characteristics
- **Median Loss from Default: \$24,412**
- **Median Revenue Loss from Incorrect Rejection: \$23,800**

Imbalanced Dataset

- Successfully Pay Back: 92%
- Failed to Pay Back: 8%



Benefits of a Solution

- Financial Inclusion
- Customer Trust
- Operational Efficiency

- Minimized Losses
- Risk Management
- Pricing Strategies

Models

- Logistic Regression
- Penalized L1 Regression
- Decision Tree
- Naive Bayes
- SVM
- XGBoost
- KNN
- MLP
- Random Forest

Logistic Regression (Penalized Lasso)

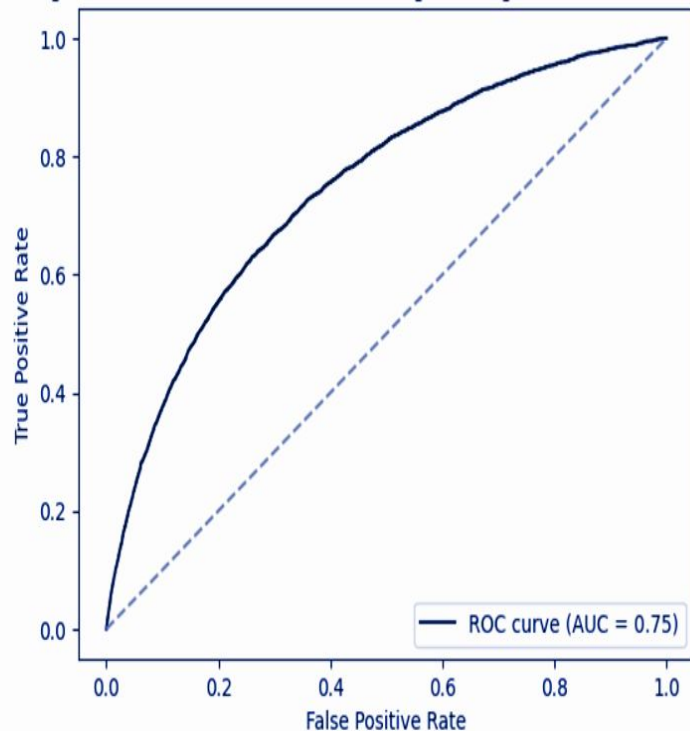
Runtime: 55 Seconds

AUC Score: 0.75

Kaggle Score: 0.728

Log Loss: 0.24

Accuracy: 92%



Predictor Influence and Probabilities

Unemployed: 0.93

Maternity Leave: 0.90

Relative Region Population: 0.75

Realtor Occupation: 0.70

Occupation Type: 0.12

Registered Phone: 0.45

Credit Amount: 0.47

Email Presence: 0.3

Client Building Information
(LIVINGAREA_MEDI) : 0.17

XGB Boost - Recommended Industry Model

Runtime: 18 Seconds

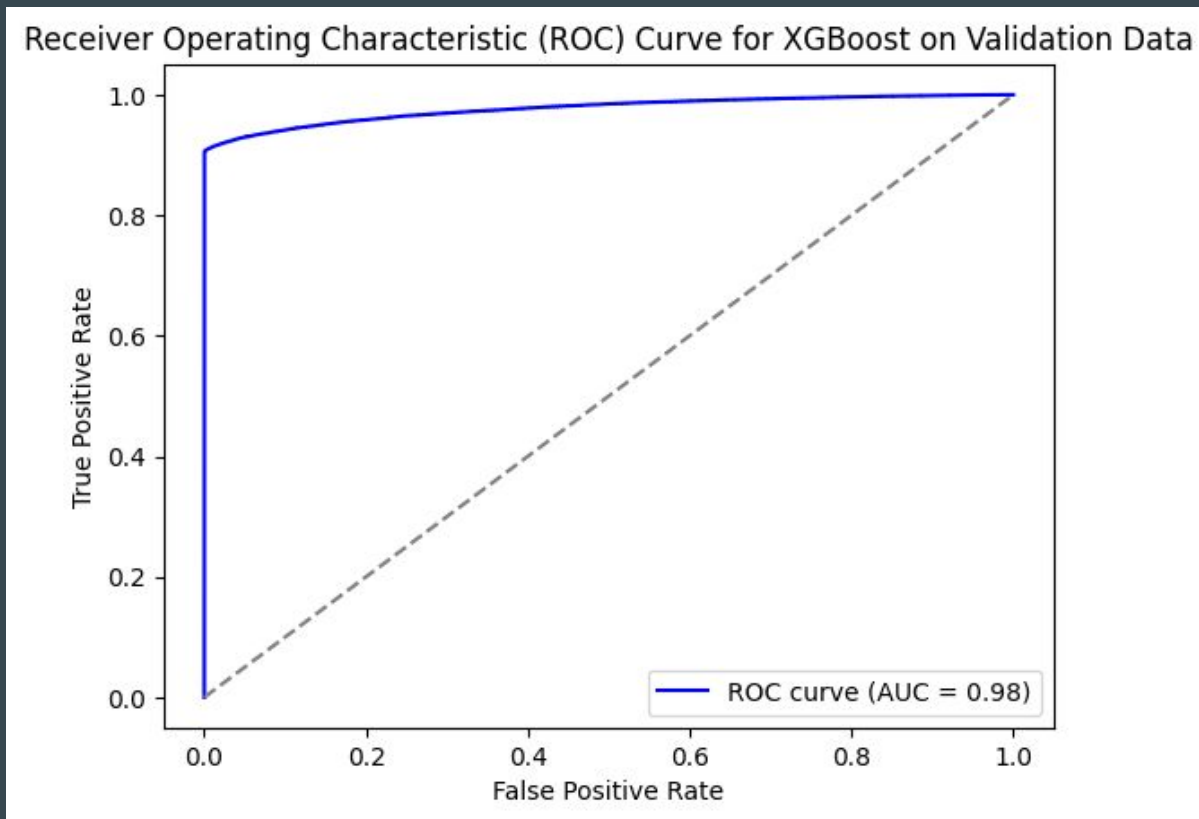
AUC Score: 0.98

Kaggle Score: 0.724

Accuracy: 95%

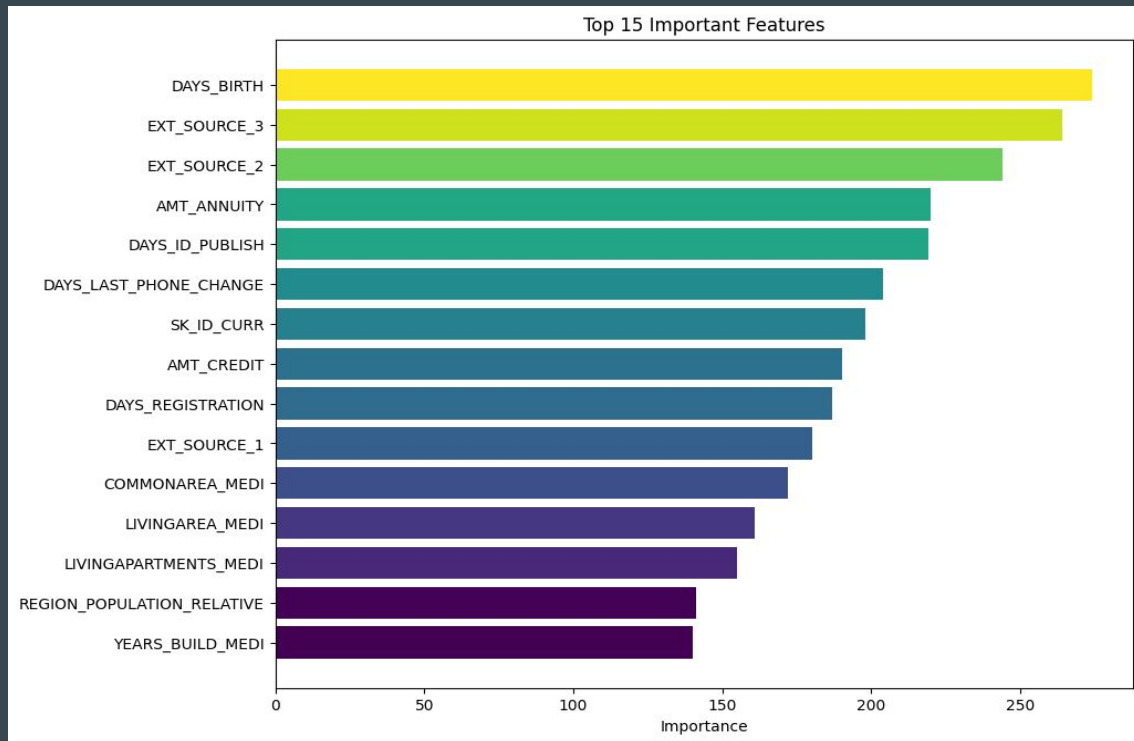
Quick and reliable predictions across 200,000+ customers !

Exceptional Performance and Accuracy!



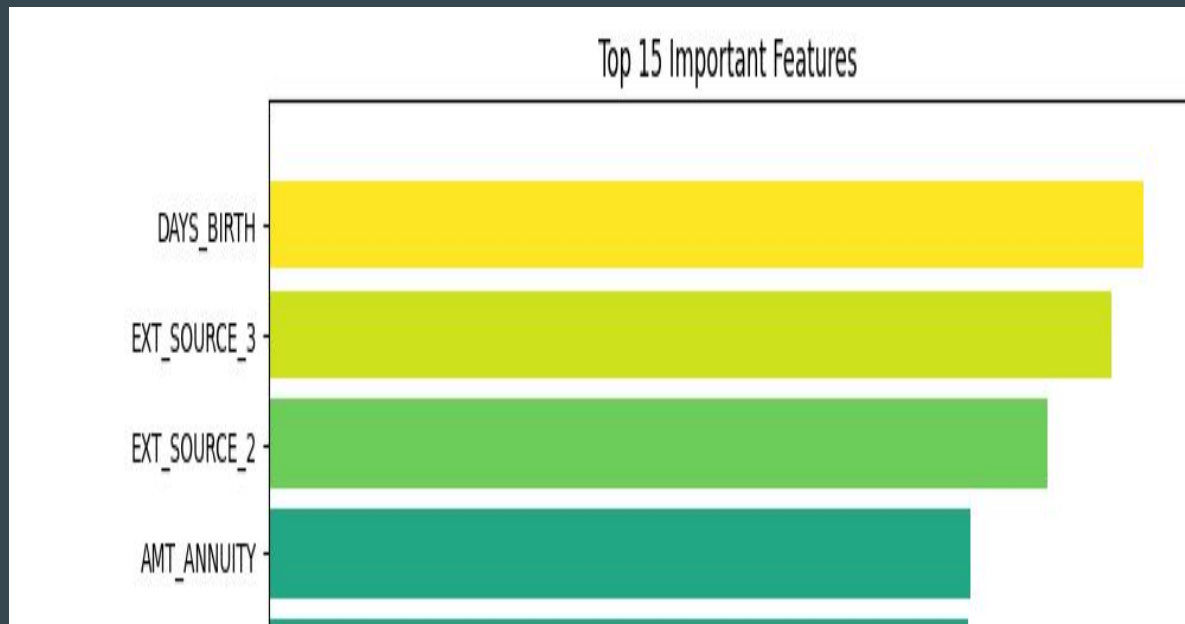
Feature Importance of Top Loan Default Predictors

This bar chart below shows the top 15 most important features in predicting loan defaults, helping us focus on the factors that most influence borrower behavior and repayment capabilities.



Top 4 predictors address Home Credit

- **Applicant age**
(Days_Birth)
- **External credit scores**
(Ext_Source_3 and Ext_Source_2)
- **Loan structure**
(Amt_Annuity)



Driving Better Lending Decisions with Predictors

By leveraging these predictors, Home Credit can:

- Reduce financial losses by accurately identifying high-risk clients.
- Increase revenue by approving loans for reliable clients previously overlooked.
- Develop tailored loan products and strategies to meet diverse client needs.

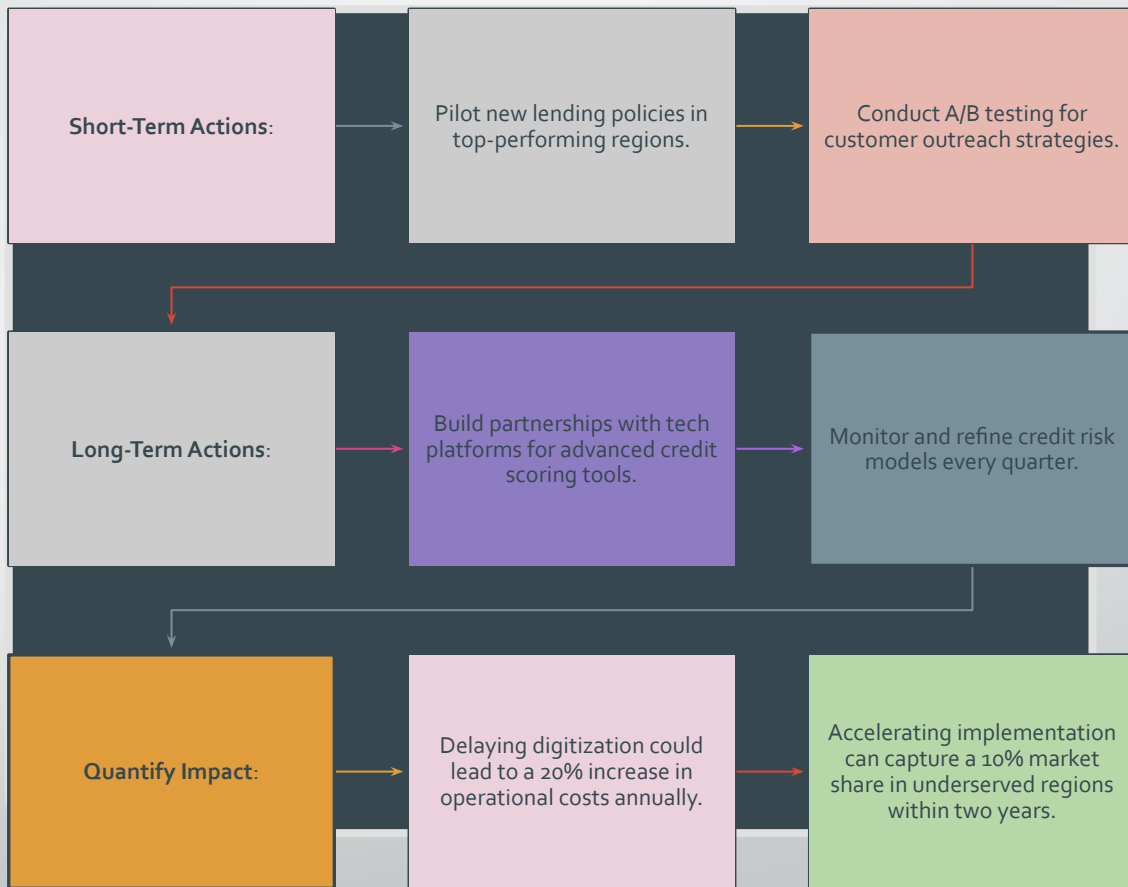
Solutions – Leveraging Analysis for Business Decisions

Prioritize Customer Segmentation: Focus on high-creditworthy and underbanked segments identified through analysis.

Optimize Lending Models: Use predictive analytics to refine risk assessment and tailor product offerings.

Enhance Digital Channels: Invest in digital onboarding to improve customer experience and reduce processing costs.

Next Steps – Actionable Insights



Thank you!