Bank Churn Prediction

A Data-Driven Approach to Improve Customer Retention

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Introduction

- Customer churn refers to the rate at which customers leave a company.
- It is a major problem for banks, leading to lost revenue and increased customer acquisition costs.
- Churn prediction models can help banks improve customer retention, reduce costs, and increase revenue, providing a competitive advantage in the industry.

Business Question

How can the banks solve this problem of customer churn and maintain a sustainable business model?

- Develop a predictive model that can identify customers who are at risk of churning.
- Understand the factors that contribute to customer churn.

Data (Exploratory Data Analysis)

Understanding the data

- Data source: Kaggle
- Visualize the data
- Check for outliers
- Correlation between different variables

Preparing the data

- Scaling/Normalization
- Feature Extraction/Selection
- Create dummy variables if required
- Treat missing values

Test/Train split

- Split the data into Training and Validation set (70:30)

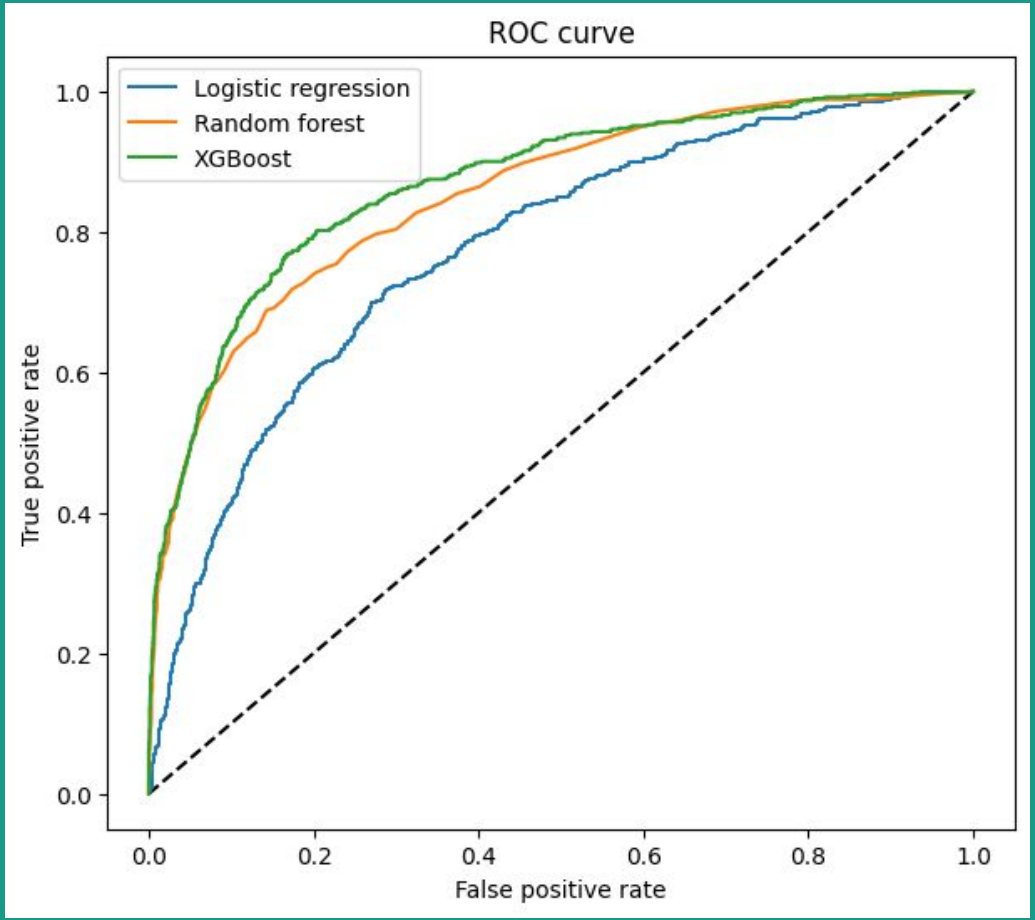
Insights (Predictive Analytics)

XGBoost	
AUC	0.86
Accuracy	86.6%
Recall	42.3%
F1	0.544

Random Forest	
AUC	0.85
Accuracy	86.4%
Recall	41%
F1	0.547

Logistic Regression	
AUC	0.77
Accuracy	80.5%
Recall	21%
F1	0.33

XGBoost out performs Random Forest and Logistic Regression



Business Action

- Use the **XGBoost model to identify potential churners** and take proactive measures to retain them.
- Develop **targeted retention** strategies for customers identified as high risk of churning.
- **Segment customers** based on their likelihood of churning and tailor marketing and retention efforts accordingly.
- Use insights from the XGBoost model to make **improvements to products and services**, reducing the likelihood of churn.

Business Outcome

Increased customer retention resulting in higher revenue and profitability.

Reduced customer acquisition and onboarding cost resulting in better ROI.

Improved customer satisfaction leading to increased brand loyalty and recommendations.

Conclusion

- The use of advanced machine learning techniques like XGBoost (or Random Forest) can help banks predict customer churn with a high degree of accuracy, leading to increased customer loyalty and reduced costs.
- By establishing themselves as customer-centric organizations through the power of machine learning and data analytics, banks can gain a competitive advantage in the industry, improve customer satisfaction, and achieve greater success.