Predicting Customer Churn for a Telecom Company

This presentation discusses the development of a predictive model to identify customers at risk of churn in an Iranian telecom company, with a focus on achieving high ROC-AUC and F1 scores.

Introduction

01 **Problem Statement:** customer churn presents a significant challenge to seeking sustained growth and profitability.

02 **Criteria for Success:**

- High ROC-AUC and F1 scores
- Effective handling of imbalanced data
- Actionable insights
- Stakeholder satisfaction

Data

- **Randomly collected data from an Iranian telecom company's database over 12 months.**

- **14 columns**

Data Wrangling and Cleaning

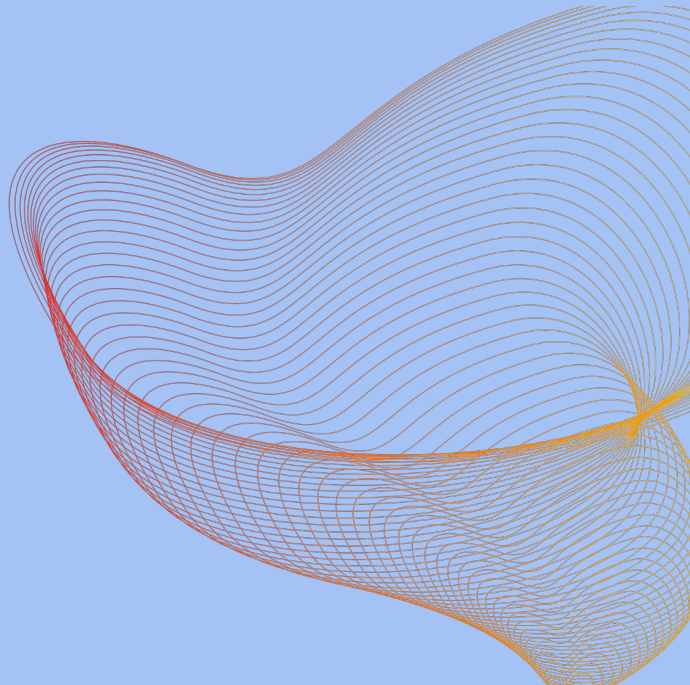
01

Biggest takeaways:

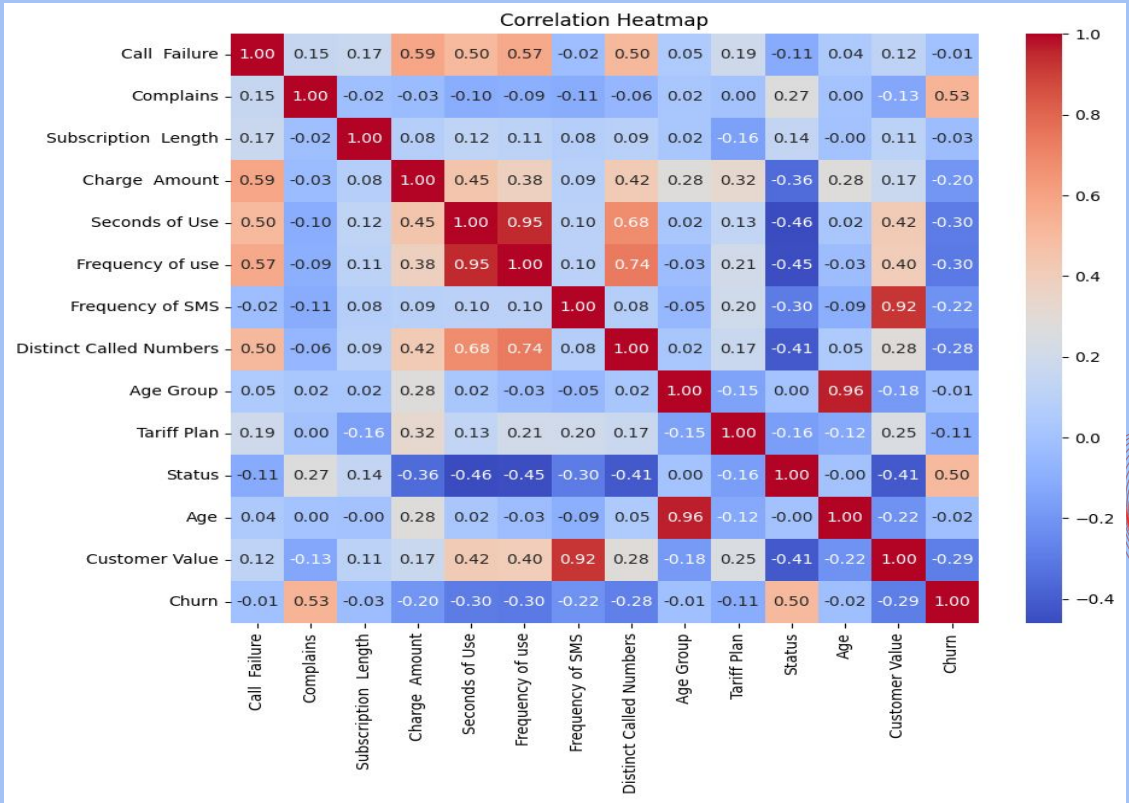
- **Wide range of call failures**
- **More no complaints than complaints**
- **Average age of customers was 30.99**

02

Imbalanced target variable: 2655 customers did not churn, 495 customers churned.



Exploratory Data Analysis



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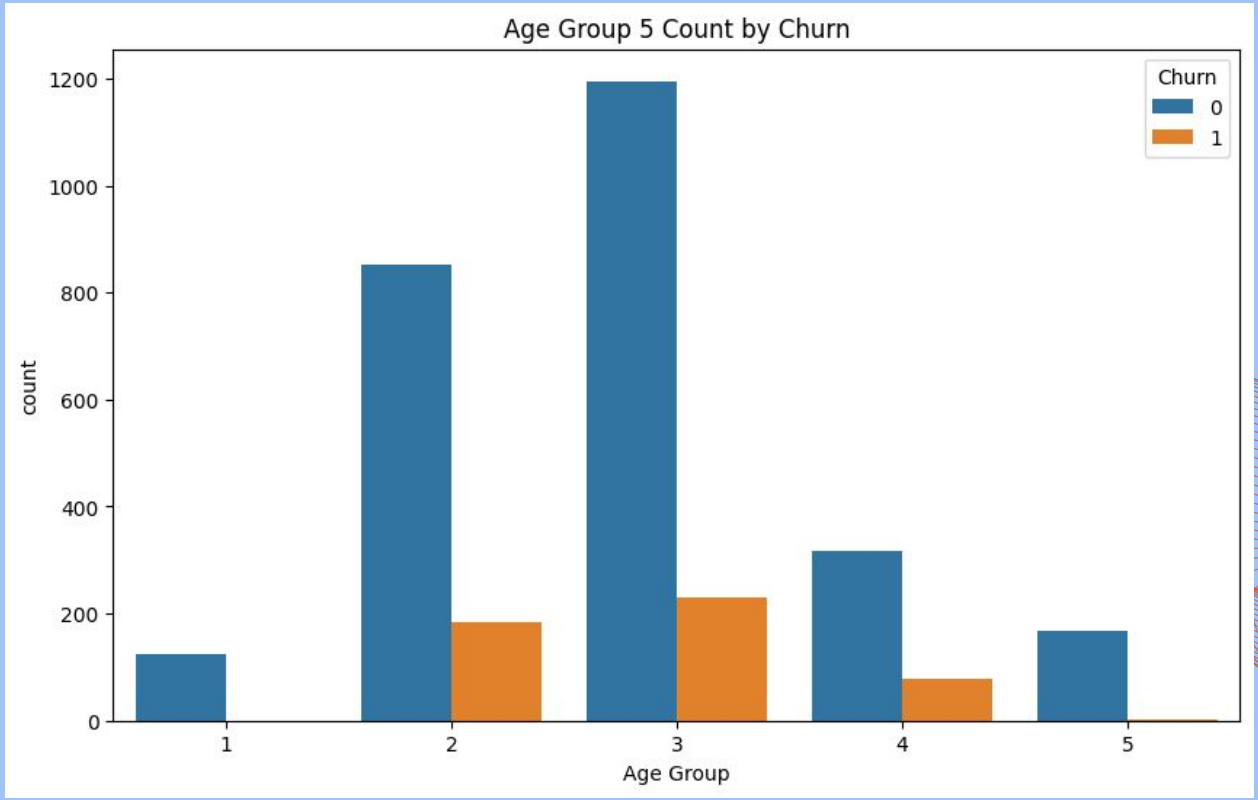

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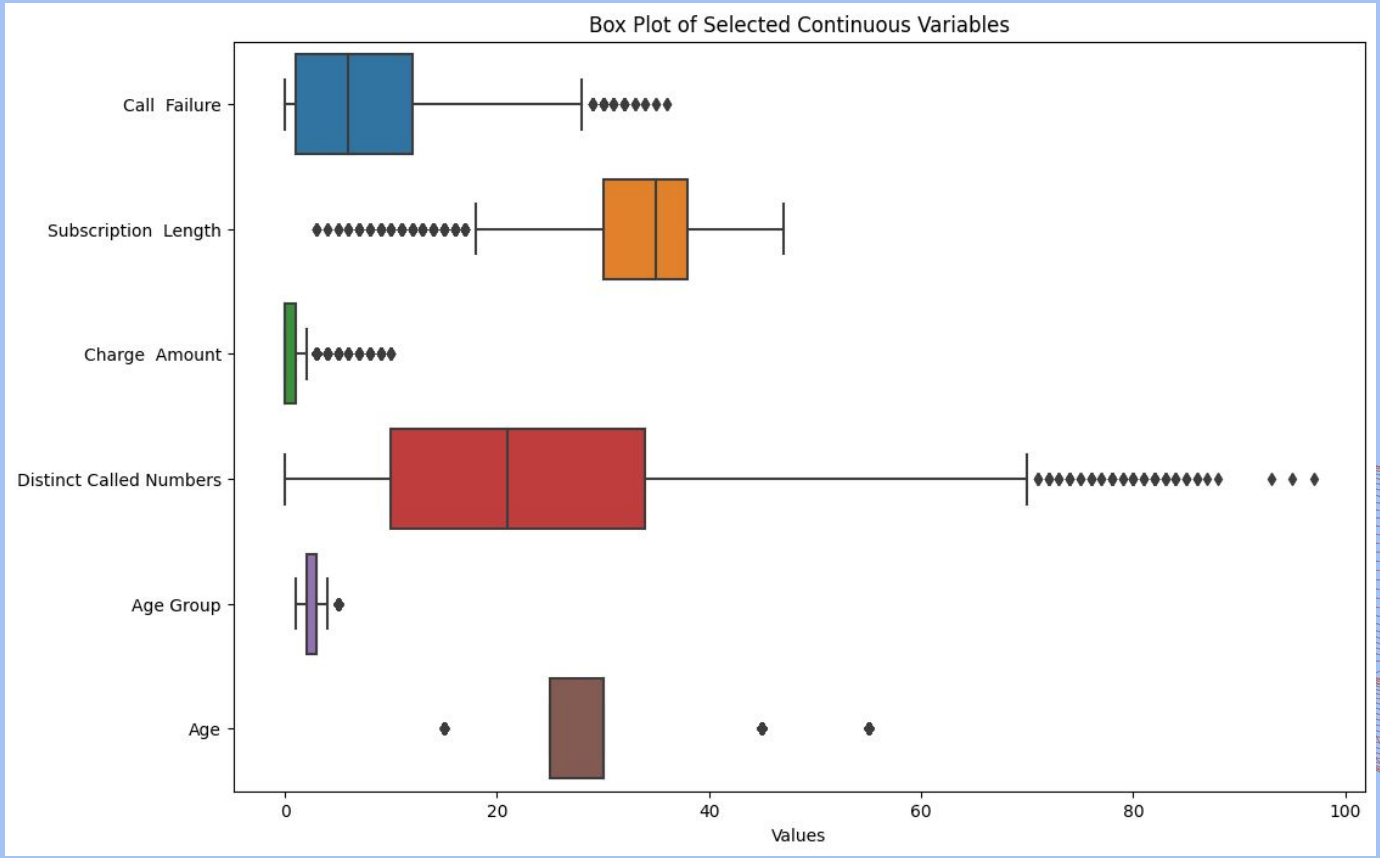

Modeling Phase

- Logistic regression
- Random Forest
- Support Vector Machine
- Gradient Boosting

Gradient Boosting demonstrated superior performance in ROC-AUC and F1 scores.

Balanced trade-off between precision and recall on the imbalanced churn dataset.

Recommendations

- Tailored Retention Strategies
- Proactive Customer Engagement
- Segmented Marketing Campaigns
- Enhanced Customer Experience
- Churn Prediction Monitoring
- Data Enrichment and Feature Engineering
- Employee Training and Support
- Long term Customer Value

Thank you for your time. Feel free to ask any questions 😊