BFSI

Case Study

Advanced Analytics for a Digital Lending Business

Client Overview

- A US based Fintech company focused on innovative pay-day loan solutions
- Customer base of 0.5 million, with 7 million transactions being processed.
- Expectation is for high growth in the near future.
- The upload of work receipts was one of the key requirements.

Security

- Data access provided via VPN (OpenVPN)
- Two-level protection:
  - *Client updates VPN password by Zoho wallet*
  - *Google Authenticator*

Pain Points & Requirements

- Profiling of the Customers
- Effect of Interface change on interest amounts
- Probability of Recovery

Data

- Storage in SQL server
- Plan to migrate data to AWS Redshift
- Approximately 50 tables containing data pertaining to Customer, Transaction, Payroll, Bank, Time sheet etc.

Advanced Analytics for a Digital Lending Business

Business Need

- Client's revenue model includes customers offering an optional tip with each transaction
- Client app has premium/ smart features that help customers avoid overdrafts and maintain optimum bank balance
- Business in need of better understanding of their customers. They required:
  - Profiling of the Customers
  - Effectiveness of Campaigns
  - Churn Analysis
  - Probability of Recovery

Indium's Solution

- Multi-Level Customer Profiling
  - 1st Level – RFM analysis
  - 2nd Level – k-means Clustering
  - 3rd Level – Clusters on different dimensions
- Data Sets utilized- Transaction, Employer, Lead Source, Bank Data and Zendesk Tkts
- App users were segmented into Categories and the % of users from each category was derived.
- Employed Logistic Regression for Churn Prediction. Achieved an accuracy of 71.89%.
- For better accuracy, speed and performance used XGBoost algorithm. Achieved an accuracy of 73.24%.
- Loan Recovery - Logistic Regression for finding the probability
- Technology : Elasticsearch, R, Python

Business Outcome

- Client was able to segment the customers better with clear attributes and the spectrum of values defining these attributes
- Helped them perform effective marketing for acquiring new customers
- Recommended reward programs for users who have cashed out more and tipped high to induce a sense of exclusivity for targeted marketing.
- Deployed targeted messaging for customers with high recency but low frequency and low cash-out values.
- Increased Campaign Effectiveness with the jump in user acquisition rate by 10%.
- Client was able to arrest customer churn
- Reduced the churn by 20%
- Identified the top 20-30% high probability defaulters

Customer Profiling/Segmentation

Customers' profiling using calculated fields

- ✓ Used data such as their last transaction, the number of transactions and the amount transacted to create profiles.
- ✓ Created 5 segments based on the RFM surrogates
- ✓ Insight into different lead sources by these segments

Customer segmentation by clustering method

- ✓ Used data such as their last transaction, the number of transactions, amount transacted and interest amount
- ✓ Created 6 clusters using k-means clustering method

- Calculated fields – logical
- Surrogates for Recency, Frequency, Monetary

Fraud Detection Snapshot

Business Need

- Client's revenue model includes customers offering an optional tip with each transaction
- Client app has premium/ smart features that help customers avoid overdrafts and maintain optimum bank balance
- Business in need of better understanding of their customers and determine and detect potential:
  - **Abuse**
  - **Fraud**

Indium's Solution

- Customers Segmentation followed by Outlier Detection
  - ✓ Fraudulent transactions or customers – defection in conditions from the average conditions
  - ✓ Benford's Law, kNN
  - ✓ Mahalonobis Distance can be used to detect these defections
- Find the outliers and use rules to investigate them
- Data Sets utilized- Transaction, Employer, Lead Source, Bank Data and Zendesk Tkts
- **Technology : Elasticsearch, R, Python**

Business Outcome

- Client was able to segment the customers better with clear attributes and the spectrum of values defining these attributes
- Identified the potential list of customers who could be part of Fraud as well as abuse
- Client was able to create policies to filter out such customers in future
- Potential Fraud List reduced over time by 50%

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