Regional Online Bank leverages machine learning using Python to improve its understanding of account holder activity and loan default probability, while personalizing its Rewards Program service

A regional online bank applied Python-based machine learning to account holders in its Rewards Program, helping to identify accounts "gaming" the system, predict activity and high-probability loan defaults, and keep customers informed of their Rewards eligibility.

BUSINESS NEED

With the goal of better understanding their customer base to provide enhanced products and services, the bank decided to implement Python-based Machine Learning. They sought key insights into overall Account holder activity in the Rewards Program, specifically in relation to Loan Behaviors. Such insights would allow the bank to streamline and optimize the Rewards Program and Loan Journey experience for all Account holders and customers, as well as position the bank as a competitive option in their customer's choice for FinTechs.

TOOLS AND TECHNOLOGY

The bank partnered with ValueMomentum to use Anaconda Distribution and Python Machine Learning Libraries for the following four use cases: **predicting loan behavior, mining consumer insights, personalizing the user experience,** and **centralizing the outcome data**. The developed code, which was written in Python and SQL, is reusable and configurable, enabling flexibility and further applications in other areas of the business. Development not only involved gathering data insights through machine learning models, but also the delivery of a complete solution via web services consumed by the MuleSoft integration platform, front-end UI for customers and CSRs, dashboards generated using Tableau, and deployment pipeline with DataRobot.significantly reduced. For example, ALIP smoke testing (the initial test to validate a software build's readiness for comprehensive testing) dropped from 4 hours to 20 minutes, enabling subsequent testing to proceed or, if a build was unstable, immediately returning it to developers for remediation.

SUCCESS FACTORS

The bank attributed the project's success to smooth collaboration with the ValueMomentum team, as well as ValueMomentum's investment in ensuring the best quality outcomes. The company also cited ValueMomentum's domain knowledge, deployable assets, and accelerators as key factors in keeping the project on time and under budget.

IMPACT

Designing, implementing, testing, and deploying these components enabled the bank to understand the activity of Customer, Accounts, Transactions, Payments, and Cards. By leveraging machine learning and predictive analytics, the bank was able to significantly improve the customer relationship and experience. For the Rewards Program, the bank is now able to implement real-time notification of cash rewards, enable proactive provisioning of rewards, and identify accounts "gaming" the system. Furthermore, predictive insights allow the bank to reach out to customers with a high probability of defaulting earlier and offer them services that will help prevent such an event.

The bank is now looking to leverage machine learning for a range of use cases (e.g., loan preclosure), with the ultimate goal of developing a Predictive Analytics Ecosystem that can easily add and optimize new systems or processes.

SNAPSHOT

Industry & Region
Financial Services, USA

Technology Stack
- Developer Tools: Anaconda Distribution and Python Machine Learning Libraries
- Webservices: Flask framework
- Solution Documentation: Jupyter notebook
- Deployment: DataRobot
- Dashboard: Tableau

For more information, visit www.valuemomentum.com