Credit Union Reduces False Positives in the Account Takeover Fraud Detection (ATO) using AI

*How a $10B US Credit Union Increased its Account Takeover Fraud True Positives
by 56% and Efficiency by 53%*

TAZI's Account Takeover (ATO) Detection Solution has significantly improved the accuracy of fraud detection, fraud team's efficiency, and the overall data quality.

Problem

A leading Credit Union has been in a constant battle with the Account Takeover Fraud (ATO). They were already utilizing a machine learning (ML) model to select transactions to review. This model was written in Python by a data scientist who was no longer at the Credit Union. The true positives rate of the existing model was only 50%, so the Fraud team spent too much time reviewing unnecessary transactions (false positives). The Credit Union was also not sure how much this impacted their member experience, complaints, and the Credit Union's overall reputation.

Challenge

Although the Credit Union has experienced fraud domain experts and fraud analysts, the existing AI model has become a black box for the Fraud team: they could not understand how it worked, could not add additional data points to improve the accuracy, and could not choose adaptive operating points to update the model as fraudsters' behavior evolves.

With a high volume of transactions to process, the Credit Union faced challenges in reducing false positives and preventing false negatives. As their constant battle against fraud continued and they utilized AI to fight it, they were seeking a more scalable and transparent AI solution that can more accurately flag suspectful transactions with the highest fraud potential. The solution also needed to handle the following:

- easily integrate with existing enterprise systems,
- identify and update constantly changing trends in fraudster behavior,
- use enhanced data sources,
- explain fraud patterns in ways the Fraud team can understand and act on,
- accept Fraud team' feedback to keep improving under dynamic fraud and business conditions,
- enable the Fraud team to maintain and update the solution to alleviate the burden on the data science team, and
- comply with AI governance and regulations.

Approach

The Credit Union's Head of Data Science team and one (1) data scientist initially engaged with TAZI. After understanding the TAZI's ATO Solution, they brought in a Fraud Data Analyst and the Fraud Manager to review results and provide feedback. The Fraud Data Analyst and Fraud Manager were actively involved in the solution's configuration and validation, and the Fraud Data Analyst confirmed that he could monitor the solution on his own.

In only two (2) weeks the TAZI ATO Solution was configured with Credit Union's data achieving tremendous uplift to their existing machine learning model. Their Fraud team was also able to select the desired decision point, something they didn't have with their existing solution, so they can control and align their team's capacity with the case load. Additionally, they got access to detailed documentation, audit logs, and reports for compliance and client reporting.

Solution

The TAZI ATO Solution analyzes data from various data sources and considers multiple factors to generate probability scores for fraud including machine learning, Graph Neural Networks (GNN), and AI Agents. AI Agents added additional insights by:

1. evaluating fraud flags from machine learning and graph neural networks to determine suspect transactions and further decrease false positives,
2. explaining fraud patterns in more detail, in plain "English"
3. providing recommended actions to the Fraud team for reducing ATO fraud, and
4. creating SAR reports.

Outcome

+56% true positives in ATO detection   **+53%** investigation efficiency

~$2M additional fraud caught in 2 months

- Improved Adaptability: Fraud Team controls the data used in the solution, operating decision scores, and segments.
- Business Ownership: Fraud Data Analysts can monitor and update the AI solution alleviating the burden on the data science team.

Testimonial

Senior Fraud Analyst *"Spending only 2 hours per month I can easily monitor and update the new Account Take Over AI solution."*