ACI UNIVERSAL PAYMENTS

ACI DATA SCIENCE

PRM AND RED SHIELD

Model Performance Use Cases

US PROCESSOR

Attacking Signature & PIN Debit Fraud

Model performance use case

ABOUT

- Large US Processor
- Processing billions of transactions annually across thousands of card portfolios
- ACI customer since 2004

CHALLENGE

- Collective portfolio debit fraud losses reached nearly US $30M over a 6 month period
- Signature and PIN debit fraud
- Desire to lower debit fraud rates without impacting good customer transactions

SOLUTION

- A single fraud model which spans a variety of transaction types including card present and card not present purchases with foreign and domestic activity while also targeting specific high risk merchant (MCC) codes to meet portfolio needs
- Model maintenance program focus on current and emerging fraud trends

RESULTS

- Average fraud loss per account decreased by 40%
- Annual fraud savings estimated $30M
- Model caught fraud faster resulting in loss decreases and higher fraud savings
- Trust in ACI modeling resulted in moving from near to real-time monitoring
- The model scales as the processor adds new card portfolios

TIER 1 BANK

Driving Down PIN Fraud at ATM & POS

Model performance use case

ABOUT

- Large US Bank with more than $350B in assets
- Debit card portfolio
- ACI customer since 2007

CHALLENGE

- Debit fraud losses had grown from ~$1M to nearly $20M over a multi-year period
- While harder to detect, PIN fraud averaged a higher loss per transaction at $275 compared to average $50 loss per signature debit transaction
- Desire to lower debit fraud rates without impacting good customer transactions

SOLUTION

- Initial focus on targeting general debit fraud at ATM and point-of-sale (POS) with subsequent model focus targeting higher value PIN debit transactions
- Segment model approach to focus on specific high cost transactions

RESULTS

- Average fraud loss per account decreased by over 41%
- Average fraud loss per transaction decreased 33%
- Faster fraud detection reducing number of fraud transactions per account

REGIONAL BANK

Targeting Fraud in Multiple Card Portfolios

Model performance use case

ABOUT

- Regional US Bank
- Credit and debit card portfolios including consumer and business accounts
- ACI customer since 2003

CHALLENGE

- Existing fraud models were over 7 years old and fraud types had evolved
- Annual fraud losses above $45M
- Average loss per transaction > $150 and average loss per account ~$475

SOLUTION

- Leverage machine learning techniques to train existing models with ongoing fraud data so it can learn and detect new fraud signals
- Custom credit and debit models from ACI to supplement rules strategy
- Focus on real-time and near real-time transactions

RESULTS

- Transaction false positive ratio = 4.1
- Focused on the high value fraud: alerted on and saved nearly half of the value of attempted fraudulent transactions

CANADIAN BANK

Multiple Models Addressing Card and Deposit Fraud

Model performance use case

ABOUT

- Multi-national bank based in Canada with over 17 million customers globally
- Over 3 billion card transactions annually
- ACI customer since late 1990s

CHALLENGE

- More than $150M in fraud over an 11 month timeframe
- Deposit fraud tied to debit accounts made up more than 50% of fraud losses

SOLUTION

- Credit, debit and deposit models developed
- Deposit fraud models leveraged financial (deposits, withdrawals, etc.) and non-financial (balance inquiry, PIN change, etc.) transactional data
- Debit and deposit models from ACI designed to work in tandem

RESULTS

- Transaction false positive ratio of 5:1
- Percent opposable amount saved = 40%
- 33% transaction fraud detection rate and 39% fraud account detection rate

RETAILER

Segment Models Use Consortium Data

Model performance use case

ABOUT

- Leverage collective positive (good) data and fraud data across multiple retailer portfolios
- Including more than 100 million cards over 250 million transactions

CHALLENGE

- Online fraud is pervasive among retailers in today's increasingly digital world
- Fraud losses in excess of $200M
- Average fraud loss per transaction > $250

SOLUTION

- ACI segment model designed to achieve higher fraud detection rates with lower false positive rates.
- The model uses the history from all consumer transactions across ACI's retailer consortium data set

RESULTS

- Greater than $100M in fraud detected by ACI segment model
- Model detects approximately 50% of all potential fraud transactions
- Model false positive ratio less than 7:1

GAMING

Detecting Fraud in the Gaming Sector

Model performance use case

ABOUT

- Leverage gaming client data across various global geographies
- Supporting immediate purchase of digital downloads
- Real-time accept or deny decisions focused on extremely low false positive rates

CHALLENGE

- High volumes of low value transactions across various channels (e.g. console, online, and mobile) make it harder to distinguish fraud
- High season (e.g. Christmas) and gaming release schedules provide an increased opportunity for fraudsters
- BOT attacks and account takeovers driving the majority of fraud for this sector

SOLUTION

- Sector models developed using ACI gaming data with geographic factors
- Focus on chargebacks to alleviate customer refund requests
- Identify “dormant” fraudsters who may wait to attack (e.g. not always a “new player” problem)

RESULTS

- Sector models identified up to 43% of chargeback fraud loss
- Sector models detected up to 28% of chargeback fraud
- Nearly $10M in fraud loss saved annually

TRAVEL

Consortium Approach to Travel

Model performance use case

ABOUT

- Leverage collective fraud data across multiple travel clients from the airline, train, hotel, and online travel agents (OTA) verticals
- Evaluating approximately 25 million accounts, more than 50 million transactions and over 120,000 fraudulent transactions

CHALLENGE

- Travel purchases tend to have higher average transaction values (e.g. plane tickets, train tickets, hotels stays, travel/vacation packages, etc.) with lower frequency
- Average fraud loss is $500 per transaction

SOLUTION

- Sector model designed to identify high value transaction types
- Pooling of travel data facilitates a stronger detection system across this sector

RESULTS

- Travel Sector model false positive rate is 12 : 1
- Model detected **more than 45%** of fraudulent transactions
- Fraud amount alerted **60%** total fraud loss
- More than US $35M fraud losses detected