

BNPL Case Study - Raising the Bar for Customer Experience and Reducing Fraud with Machine Learning



CLIENT An innovative American financial technology company that pioneered the point of sale finance industry by providing a fast, transparent, and more inclusive loans to consumers.

CHALLENGE Fraudsters were using synthetic identities to mass register fraudulent new accounts and then requesting loans that were never paid back.

Solving the well-known industry trade-off between customer experience and fraud prevention.

High rates of account takeovers and promotion/benefit abuse indicated that the client had outgrown its insourced fraud model.

- SOLUTIONS**
- ▶ Processed vast amounts of proprietary data with Feature Platform and transformed it into insightful intelligence for fraud detection.
 - ▶ Leveraged the Rules Engine tool to create and manage commands with heightened efficiency and accuracy.
 - ▶ Gained a 360° view of fraud data and its connections using DataVisor's Knowledge Graph.
 - ▶ Leveraged the Case Management toolset to take fast, efficient, and informed decisions in real-time.

RESULTS

41%

reduction in hurt ratio, a measure of false positives.

320+

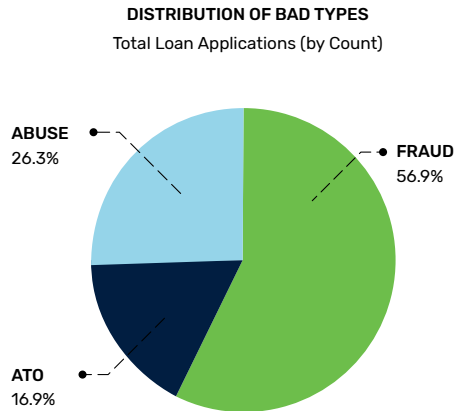
fraud rings detected, some of them related to over \$80k in losses per attack.

5x

estimated review efficiency improvement.

CLIENT CHALLENGES

The client was experiencing three different types of fraud, distributed as follows:



In this context it approached DataVisor with the following top-of-mind goals:

► Reducing Friction for Good Borrowers

Reducing the hurt ratio was determined as a top priority because the client expressed that a high-quality customer experience was paramount to success in a highly competitive market.

The hurt ratio measures false positives by indicating how many non-fraudulent events (i.e. credit applications) are flagged for review for every fraudulent one. The client experienced a hurt ratio of five (5/1), which means that its fraud detection system was flagging five good credit applications for review for every fraudulent one. A low hurt ratio means a smoother customer experience where good borrowers are not subject to unnecessary identification measures.

► Increasing the Percent of Fraudulent Applications Detected

A low rate of fraud detection ultimately resulted in first payment defaults, which reduced the client's profits.

► Uncovering Coordinated Fraud Attacks

Since it operates in a highly dynamic environment where thousands of consumers request small to medium-sized loans every day, the client needed a solution that could handle and make sense of vast amounts of data to stop organized cybercriminals.

► Improving Review Efficiency

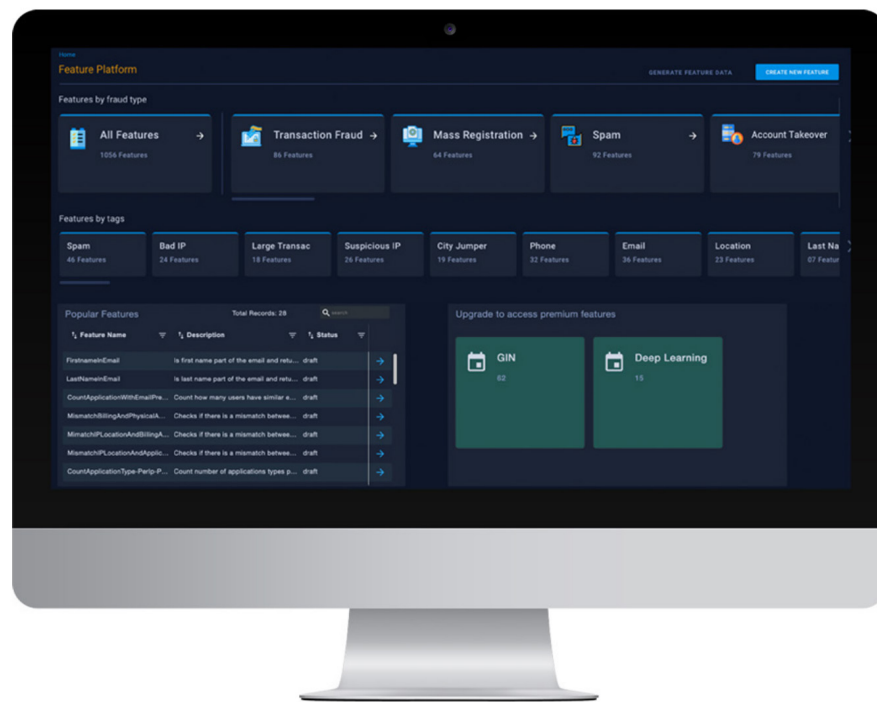
A high review time per application resulted in an increase in operational costs for the client because it had to hire more employees, which reduced the scalability of its business model.

CLIENT SUCCESS WITH DATAVISOR'S SOLUTIONS

FEATURE PLATFORM

The solution starts with data and DataVisor's Feature Platform. Here, the Client's data was ingested and processed by our cloud-based system and leveraged by the client to automate the feature engineering process and produce thousands of auto-derived multidimensional features. These features are then used to develop artificial intelligence models using DataVisor's unique unsupervised machine learning algorithm as well as open-source machine learning frameworks such as XGBoost.

Led to savings in the tens of thousands of dollars in in-house feature creation costs and machine learning model development and enabled the client to bypass the time-to-market cycle of developing its own features and model, which can last up to five years for comparable financial technology companies.



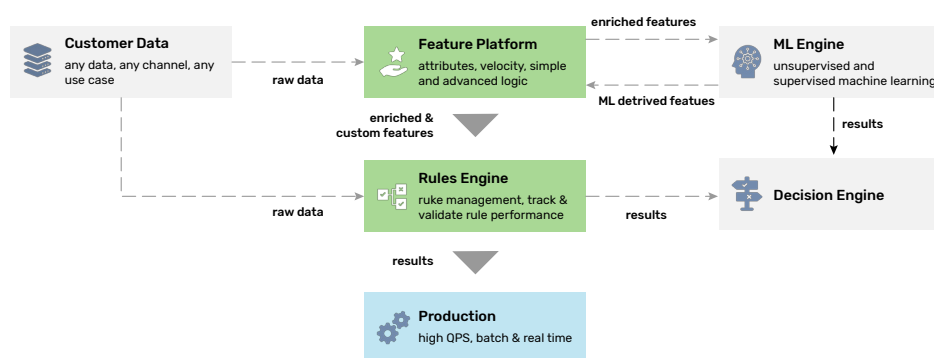
Improving the customer experience:

More and cleaner data means smarter decisions that thwart fraud but do not tag good users as bad.

RULES ENGINE

With the data in the right place, the Rules Engine was the next step taken to build a holistic fraud protection approach.

The client leveraged DataVisor's Rules Engine to create and manage command sets and to systematically organize rules and track and validate their performance with advanced capabilities such as backtesting and forward testing. The client also combined the results from the Rules Engine with the results from the machine learning model in a centralized decision-making process that promoted enhanced performance.



Improving the customer experience:

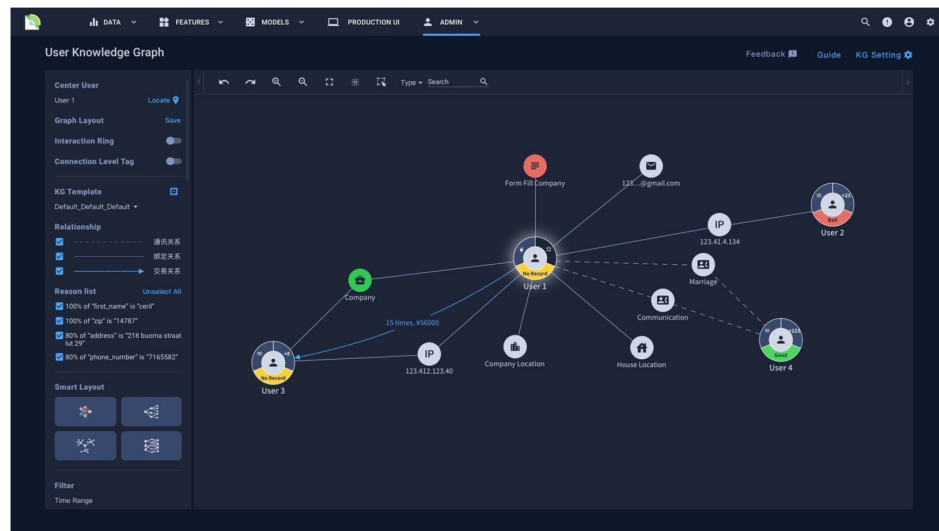
Not all rules are created equal. The client built an auditable and testable rules policy that is in constant self-improvement with the Rules Engine.

KNOWLEDGE GRAPH AND CASE MANAGEMENT

With a firm base in data and a robust approach to rules in place, the Client began using DataVisor's Knowledge Graph and Case Management tools to visualize fraud insights and take swift actions based on them.

The Knowledge Graph analyzes vast amounts of data to uncover connections between seemingly independent events that are invisible to the naked eye. These connections come in the form of shared entities, groups, money flows, IPs, emails, and other attributes between transactions and are presented in an easy-to-use interface that powers data-driven decisions at the highest level.

Once a comprehensive and interactive view of the data was in place, DataVisor's Case Management tool enabled the client to take context-enriched decisions that stopped fraud with augmented accuracy and an estimated 5x review efficiency gain. Among other features, the client was able to take bulk decisions for groups of events and create custom blacklists and whitelists that simplified internal processes substantially.



A noteworthy feature of DataVisor's platform is the One-Click Investigation, which reduces the amount of friction throughout the customer experience to help operational teams investigate faster and smarter and avoid keeping the customer waiting. Once it builds a linkage, it can automatically connect the new entities or events with previously detected fraud rings; therefore, if the client finds that some new users are strongly connected with known bad actors, the client can immediately mark new users as bad without spending extra time for manual searches or investigations from scratch.

Improving the customer experience:

By allowing its team to whitelist good customers and investigate cases with a single click, the client ensured that good borrowers returned and that applications that need review are promptly cleared without keeping the customer waiting.

LAUNCH AND INTEGRATION

To ensure that the client's needs were addressed promptly and in full, DataVisor implemented its proven deployment strategy. First, a bespoke model that combined the best of supervised and unsupervised machine learning was developed for the client. Then, this model was trained using data from several months' worth of credit applications and their performance. Then, the model was fine-tuned by a consortium of DataVisor engineers and data scientists to enable it to hit the ground running and begin detecting fraud from day one.

DataVisor tested the model and its results were then compared to the observed performance of the loans. Before launch, the client received a presentation that highlighted all the benefits of the DataVisor approach with clear and actionable insights on its own data.

All in all, DataVisor's solution is designed for seamless integration, and its trained team of professionals delivered value to the client within 2 weeks of the start of the process. Adding to this, DataVisor's Knowledge Graph and Case Management tools connect to data from the client's internal systems and third-party vendors in real-time and DataVisor ensured that its solution worked seamlessly with the client's current data architecture, orchestration solutions, and technology stack.

The client only needed to provide its dataset and review the results of the model to get the implementation in motion. From there, the DataVisor team followed a process that has been thoroughly proven across the financial industry.

Results that Matter

\$15 Million+

Annual Savings

Reduce financial losses and manual review costs with accurate detection.

5x -20x

Efficiency Uplift

Boost review and decision with link analysis, smart investigations, auto decisions and bulk actions.

1-2 Weeks

Fast Integration

Provide rapid and flexible integration with your systems and support real time and batch processing.

ABOUT DATAVISOR

DataVisor is the world's leading fraud and risk management platform that enables organizations to respond to fast-evolving fraud attacks and mitigate risks as they happen in real time. Its comprehensive solution suite combines patented machine learning technology with native device intelligence and a powerful decision engine to provide protection for the entire customer lifecycle across industries and use cases. DataVisor is recognized as an industry leader and has been adopted by many Fortune 500 companies across the globe.

CONTACT US

If you are interested in learning how DataVisor can help bring your fraud detection to the next level or wish to start a trial to assess your current fraud exposure level, please contact us at: info@datavisor.com or visit us at www.datavisor.com

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