

PROBLEM

A fintech startup was struggling to continue operating due to 20% of its transactions being fraudulent.

PROJECT

Using the Darwin® product, the startup was able to build a machine learning model to detect fraud without any data science expertise.

RESULTS

The model detects fraud with 90% accuracy, saving the company \$457,214 each year.

THE PROBLEM: TRANSACTION FRAUD IN A FINTECH STARTUP

A fintech startup in Mexico that was trying to double in size was struggling with large amounts of fraud. The startup processes about 24,000 transactions per year, and of these, a full 20% were fraudulent. At an average cost of 2,000 pesos per fraudulent transaction, the cost and impact of so much fraud on the startup was untenable. The sheer amount of loss due to fraud was so great that the company estimated it had only two years to fix the problem or go out of business.

In urgent need of a solution, the startup turned to leading industrial artificial intelligence (AI) company SparkCognition and its Darwin product for automated machine learning, with the goal of building a machine learning model that could monitor transactions and flag any that were likely to be fraudulent.

THE SOLUTION: AUTOMATED MACHINE LEARNING FOR FRAUD DETECTION

The Darwin product is a collection of data science automation technologies that accelerate the creation of end-to-end AI solutions, automating the most time-consuming steps of the data science process so that users can focus instead on the data-driven decisions that generate value in their business.

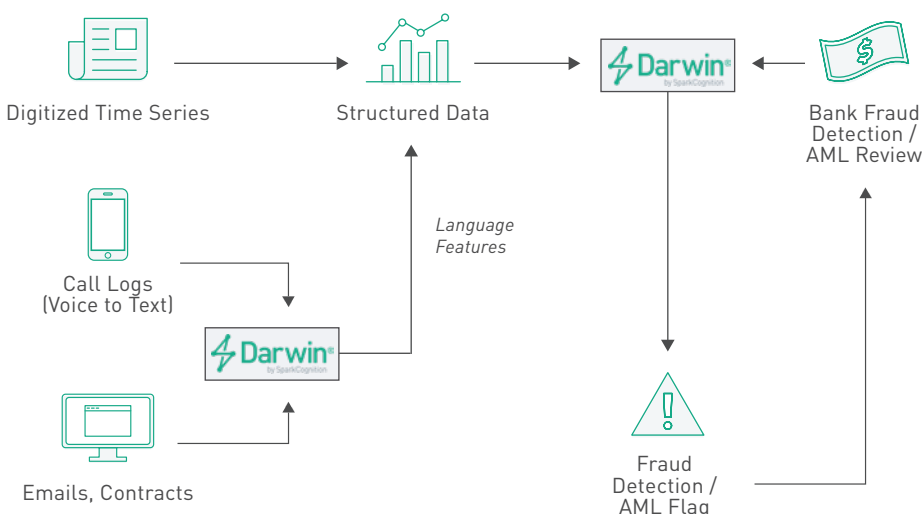
Using this platform, the startup was able to create a machine learning model to detect fraudulent transactions in less than an hour, despite having no data science team. This model was created using historical data on 24,000 transactions (including 20,000 normal transactions and 3,500 fraudulent transactions) and 27 client and transaction features.

THE RESULT: A NEW WAY OF OPERATING

The finished model was able to detect fraudulent transactions with 90% accuracy. This model flags likely cases of fraud and provides confidence levels for each flag. It can process 500 transactions in less than a second, and can be directly deployed, scaled, retrained, and operated in real time.

The model flags about 4,320 fraudulent transactions each year, which at an average value of 2,000 pesos per transaction means this model has saved the startup \$457,214 per year. The model also continues to learn and improve over time. In all, the startup saw an ROI on this investment of 4.5 times in the first year and 10 times in the second year, and by using this technology, was able to save itself from bankruptcy.

FIGURE ONE: How a solution incorporating autoML and NLP would work



The next step in the creation of models of this type is to incorporate natural language processing (NLP). By leveraging NLP software, such as SparkCognition's DeepNLP™ product, fraud detection models can understand, extract, and analyze features and information from natural language sources, such as call logs, emails, and contracts. This allows models to generate even more robust predictions by working off of a wider set of features, such as:

- Customers' previous transactions
- Customers' previous logins and bank interactions
- Previously flagged and reviewed transactions
- Reviewed audit transactions
- KYC documents
- Submitted customer contracts
- Bank's whitelists and blacklists
- Bank policies
- Central bank and foreign agencies' regulations

ABOUT SPARKCOGNITION

We catalyze sustainable growth for our clients throughout the world with proven artificial intelligence (AI) systems, award-winning machine learning technology, and a multinational team of AI thought leaders. Our clients partner with SparkCognition to understand their industry's most pressing challenges, analyze complex data, empower decision-making, and transform human and industrial productivity. To learn more about how SparkCognition's AI applications can unlock the power in your data, visit www.sparkcognition.com.