

Real-time, Actionable Insights for Trading Surveillance

Modern data architectures and new machine learning technologies enable financial services companies to utilize massive amounts of data to the fullest. By extracting previously unknown insights with minimal false positives, firms deliver enhanced profitability while responding in real-time to changing market conditions.

The iguazio Continuous Data Platform powers data-driven applications at the edge, on premises and in the cloud for real-time actionable insights. It leverages the latest AI tools as well as a variety of data services, eliminating data pipeline complexities and reducing time to insights from hours to seconds.

WHY IGUAZIO FOR FINANCIAL SERVICES?

- Accurate and real-time detection of previously unknown insights with minimal false positives
- An iterative agile approach that abandons complex data pipelines and provides substantial cost advantages due to greater scalability and flexibility in data analysis
- Rapid development and deployment of new machine learning models from training to production



Stock Exchange Case Study

A major stock exchange outgrew its market surveillance platform due to the increasing complexity of modern-day trading strategies. The exchange turned to iguazio for a platform that powers machine learning and continuous analytics to adjust in real-time to changing market behaviors.

THE CHALLENGE

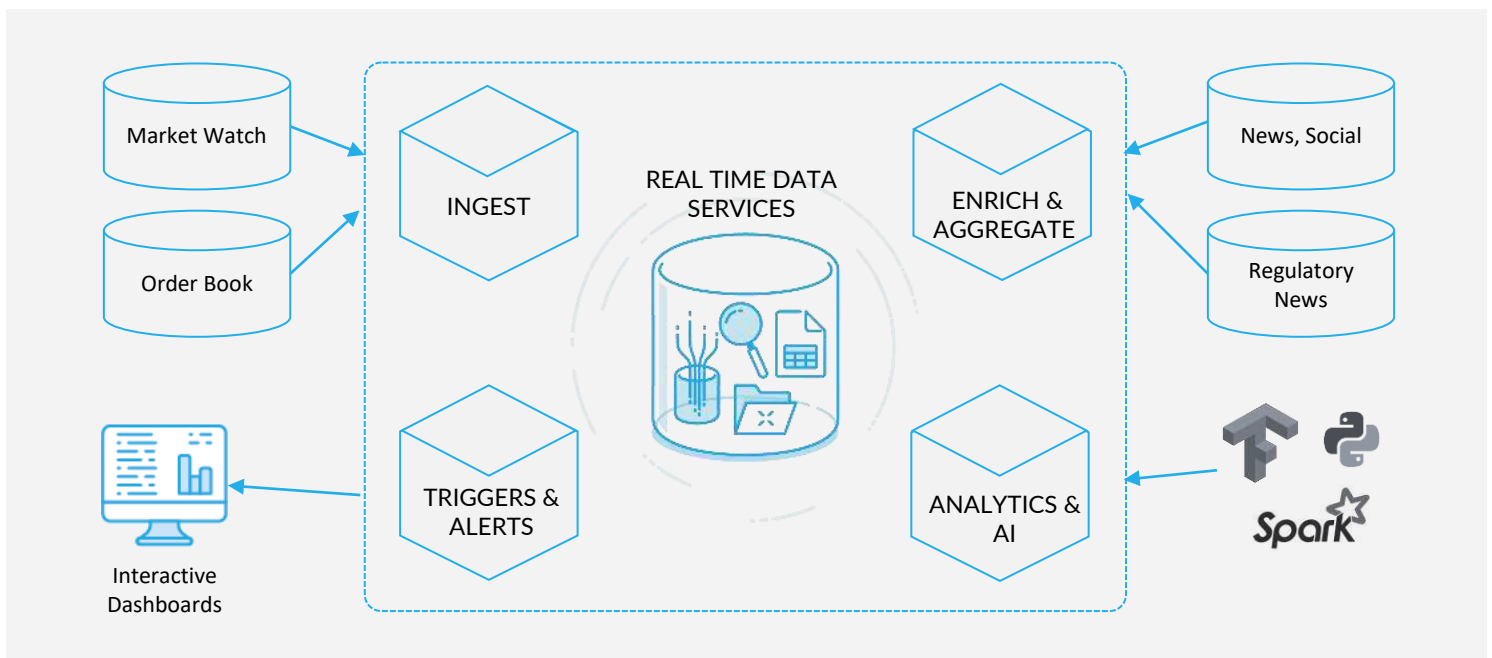
The stock exchange's original surveillance system was based on a rules engine, which was well adept at detecting known market manipulation schemes such as pump and dump. However, it wasn't able to detect attempts to manipulate the market using new, unfamiliar methods, which cannot be readily translated to algorithmic rules. These attempted manipulations resulted in many false positives and did not provide enough accuracy. A new system was necessary, one that is based on anomaly detection generated by machine learning and data science.

The exchange then tried to deploy a Hadoop-based data lake, so that its data scientists could research and develop machine learning models. But that presented a significant challenge in deploying those models into the operational detection system, as it required significant engineering efforts, which did not allow for agile, iterative refinement of new models.

THE SOLUTION

In order to identify new market manipulation schemes, the iguazio Continuous Data Platform ingested data from an orderbook and market watch and processed it in real-time with machine learning models. The exchange could monitor the behavior of traders and see how they influenced stock price inflations, as well as track actual transactions and stocks. When a stock price jumped or fell by 5%, the algorithm accessed historical and real-time data to find correlations and raise alerts when needed. For example, if correlation between a trader's previous sells and recent buys indicated an artificial price inflation or if a stock's price had dramatically changed.

iguazio handled not just data science functionality, but also the runtime detection environment, so that models were quickly deployed to production in an agile, effective manner. Deploying machine learning code to production and having it execute against streaming data without extensive re-coding was a unique value provided by the iguazio Continuous Data Platform, which supported both research and production. This was enabled by iguazio's unique multi-model, highly performant database, which handled different data access models and APIs, including streams, files, dataframes and objects. The support for streams and dataframes in particular facilitated a quick turnaround of machine learning models into operational, event-driven decisioning modules – effectively bringing the agile paradigm into the realm of data science and data engineering.



Using iguazio, the exchange was able to build a system that could detect previously unknown market manipulation schemes with minimal false positives. The iguazio Continuous Data Platform is used as a basis for data science R&D as well as for real time detection, in a way that enables quick iteration and deployment of new machine learning models, without requiring complex data pipelines or long data engineering cycles. Using this iterative agile approach allows the exchange to refine their models in reaction to changing market conditions, keeping them on top of market abuse and a step ahead of their competition.

ABOUT IGUAZIO

The iguazio Continuous Data Platform powers data-driven applications by extending the cloud experience at the edge and on premises. The platform enables customers to ingest, enrich and analyze streams, objects, files and database records - all in one simple, fast and secure platform, eliminating data pipeline complexities and reducing time to insights. iguazio's customers operate in a wide range of industries such as IoT, telco, manufacturing, transportation, financial services and cyber security. Backed by top VCs and strategic investors, the company is led by serial entrepreneurs and a diverse team of seasoned innovators in the USA, Singapore and Israel.