

The Xelera Analytics software accelerates machine learning-based analytics queries. It enables enterprises to analyze massive data sets and data streams within milliseconds response times, turning business processes into true real-time processes. For a certain class of workloads – decision tree-based machine learning algorithms, such as Random Forest and XGBoost – Xelera Analytics is the world’s fastest analytics engine. Under the hood, Xelera Analytics leverages the enormous computing capabilities of modern enterprise-grade FPGA and GPU accelerators.

## Risk Management

The value at risk assessment and the credit risk assessment of contract counterparties are two statistical techniques to manage the risk in financial transactions. Both techniques shift more and more frequently towards real-time processes. On the other hand, both techniques often rely on data- and compute-intensive Monte Carlo methods. Xelera Analytics makes these methods real-time capable.

## Fraud Detection

Handling robust credit card fraud detection in a transparent way is important for customer satisfaction. Real-time capable fraud detection is an important building block to achieve both robustness and transparency. With the computational speed of Xelera Analytics, fraud detection algorithms can analyze massive data sets correlated from different sources in real-time.

## Cybersecurity

The robustness of cybersecurity systems often relies on the application of anomaly detection algorithms on data streams and the correlation of these analyses with massive data sources such as system logs. With Xelera Analytics, customers can detect risks in real-time and without slowing down the overall system performance. In high-performance cases, Xelera Analytics functions can run right behind the network cable connector, keeping the host system free of computationally intensive security algorithms.

## Algorithmic Trading

Algorithmic trading usually relies on time series analyses using Markov-like model such as autoregressive or moving average models, while Deep Learning-based techniques are under investigation. The more complex these models are, the more compute delay they cause. Xelera Analytics help keep this compute delay at a minimum, which is particularly important in high-frequency trading.

## Customer Experience

Companies make more and more use of customer data to automatically steer targeted marketing for financial services and products. This often requires the analysis of large data sets from different sources. Being able to run such analyses within a minimal time delay is often beneficial. Xelera Analytics helps minimize this time delay.

## Recommendation Engines

Individual recommendations of a specific product, service or action are often based on classical machine learning models that are fed with user data. Such engines may need to process tens of thousands of requests per second while keeping the recommendation delay within a tight time window. Xelera Analytics allows recommendation engine operators to guarantee such delays while reducing server cluster sizes significantly, hence saving operational costs.