



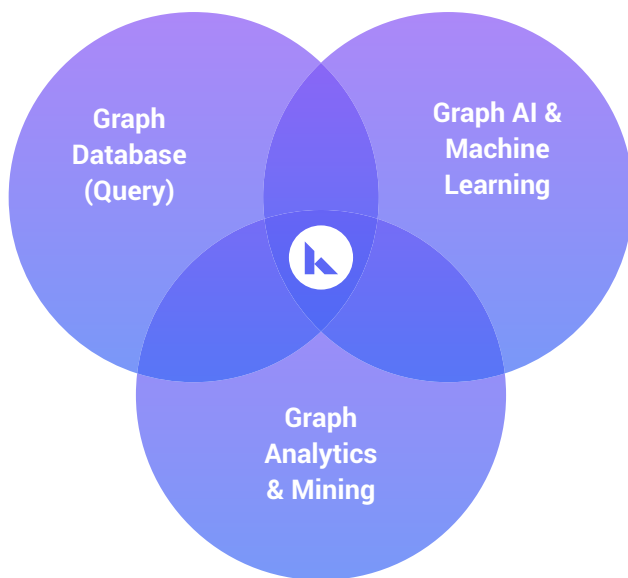
Fighting fraud is a never-ending battle for the financial services industry.

LexisNexis recently estimated that for every dollar lost by U.S. financial services firms due to fraud in 2020, companies incurred \$3.78 in total costs, including legal fees, investigation and recovery expenses, fines and other costs, in addition to the lost transaction value.¹

Rules-based systems and traditional machine learning (ML) for fraud detection can no longer keep up with the increasingly sophisticated and ever-changing tactics of today's bad actors seeking to commit fraud.

Graph technology has been shown to dramatically improve fraud detection efforts; however, due to the massive scale and complex computing required for real-time fraud detection, implementing graph systems has been historically difficult... until now.

Katana Graph™ has developed a next generation graph intelligence platform that provides breakthrough processing essential for today's real-time anti-fraud applications. Katana Graph efficiently handles highly complex graph queries, algorithms and deep learning models, at massive scale and speed that other graph solutions simply cannot match.



Katana Graph dramatically enhances and expands the effectiveness of real-time fraud detection, all in a single high-performance platform:

- **Improved fraud detection accuracy** using graph-based feature engineering
- **Deep artificial intelligence (AI) learning** of fraud patterns using graph neural networks (GNN)
- **10-100x performance improvement** in terms of scalability and speed over alternative graph solutions, whether on a single machine or a distributed environment

Rules-based systems for fraud detection are no longer adequate on their own, owing to their dependence on transaction threshold levels, excessive false positive results, and constant manual rule review work. While traditional machine learning systems have improved fraud detection, fast-evolving behavioral fraud tactics are increasingly outpacing the capacity of legacy machine learning to learn new fraud patterns.

[1] Source: LexisNexis Risk Solutions press release (13 Oct 2020).

Katana Graph effectively overcomes these challenges with its all-in-one graph computing platform, integrating graph query, analytics, mining; and deep learning graph AI, at breakthrough levels of performance and scale.

Katana Graph core functionality for fraud detection is provided by:



Graph Database Essential, diverse sources of data - real-time and historical, structured and unstructured - exist in many silos across your organization. Katana Graph integrates and synthesizes your sources of information, using natively supported advanced entity resolution algorithms, into a single view with its labeled property graph data model.



Graph Analytics Community detection algorithms such as Louvain and Connected Components identify communities and transactions that deviate from those communities, indicating a high probability of fraud, as well as reducing the number of “false positive” reviews raised to investigators.



Graph AI goes beyond traditional machine learning to leverage deep learning models such as graph neural networks (GNN) to more readily identify evolving, sophisticated patterns of fraud with greater accuracy than rules-based and traditional machine learning approaches.

Real-time fraud detection

AML Transaction Screening & Monitoring

Deep learning on large graphs including Graph Neural Networks (GNN) Graph algorithms can significantly reduce false positives raised to investigators

Fraud Detection in Payment

Community detection algorithms and GNN architectures can better identify fraudulent transactions vs. rules-based/ML approaches

Operations & Analysis

Programmable interface for integration with existing applications; e.g., alerts, workflow, data viz, dashboards

Massively scalable graph development

Source Data

Advanced graph database engine accesses disparate data sources; unlimited size



Data Integration

Labeled Property Graph model synthesizes huge volumes and varieties of data into one view



Entity Resolution

Native support for advanced entity resolution approaches



Model Development & Training

Scalable graph neural network algorithms



Model Development & Inferencing

Programmable interface to deploy models

Contact Katana Graph today! info@katanagraph.com