

Graph 101

Unlocking the value of connected data with Linkurious Enterprise

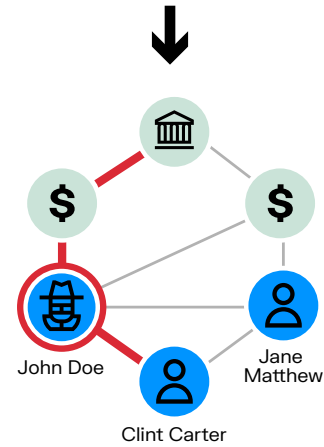
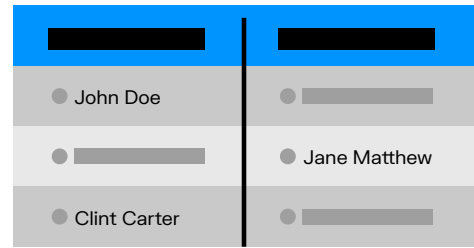
Combating money laundering, fraud or other crime **is now a data-driven job**. Gathering and analyzing data helps track down evidence of wrongdoing. But with large, inconsistent, and scattered data sources, gaining insights is a challenge for many organizations.

Today, new tools can help analysts follow the trail, uncover fraud networks, or identify organized crime activities. Among them, graph technology is offering a valuable way to find insights in large quantities of data. Discover the nature and benefits of this new paradigm and see how to unlock the value of your connected data with Linkurious Enterprise.



What is a graph?

A graph is a data structure that consists of a set of nodes, and edges (or relationships). Each node represents an entity, such as a person, a bank account, an address, or any piece of data. Each edge represents how two nodes are linked to each other, for example, person “a” owns bank account “b”. Nodes and edges can have properties—additional information associated with them. For instance, the name of the person “a” is “John”.

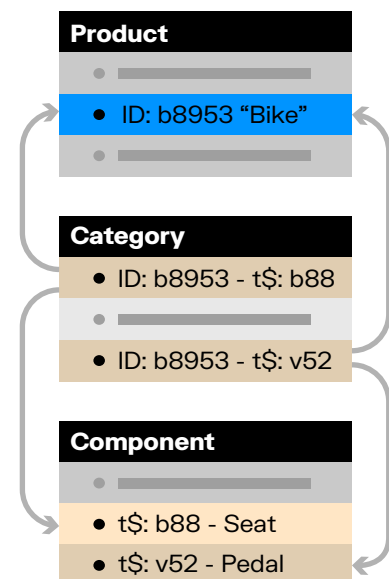


From relational to graph

The graph approach emerged to address some of the shortcomings of the relational database management systems (RDBMS) that have powered software applications since the 80s. RDBMS are structured in tables with rows and columns. They are well suited for many use cases where data is consistent and not highly connected. They are very good for routine analysis of data, or fast operations at scale such as verifying that a transaction belongs to a valid customer. But they also have their drawbacks:

- **Poor performances for querying relationships:** retrieving the relationships of a row requires going from table to table via “joins”. These joins have an exponential computational cost. As a result, queries that require going through a high number of joins are oftentimes impractical for performance reasons.
- **Low flexibility:** tables are hard to evolve and relationships across tables are complex to manage. As a result, RDBMS tend to struggle to adapt to domains with complex connected data.

Graph databases emerged to address these problems by storing information as a graph. Querying relationships is blazing fast, even in a graph of billions of nodes and relationships. Furthermore, they provide an intuitive way to represent naturally connected data.

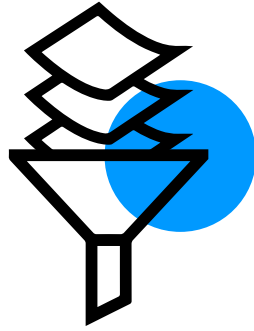


A tabular data model requires complex sets of joins accross tables to model relationships.

When a graph approach is relevant

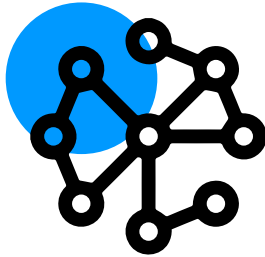
The graph journey

Gather one or various data sources.



Using a graph approach makes sense when your data and your questions involve connections. In some datasets, the connections are as important as the individual entities. In a money laundering investigation for example, **it is crucial to capture how money flows between individuals and companies**. Similarly, some questions are particularly well suited for graphs: how X and Y are connected, what X is connected to, what the role of X is in the network, etc.

Model your data as a graph.



The world's biggest companies have been relying on graphs for years now with systems such as Google's Knowledge Graph or LinkedIn's Enterprise Graph.

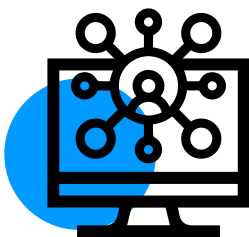
The graph approach is especially well suited for use cases like cybersecurity, anti-financial crime or intelligence analysis. In these domains, organizations switching from tables to graph benefit from:

Import your data in a graph database.



- A unified view of their data instead of blindspots and silos.
- The ability to run complex queries without hitting performance bottlenecks.

Find insights in Linkurious Enterprise.



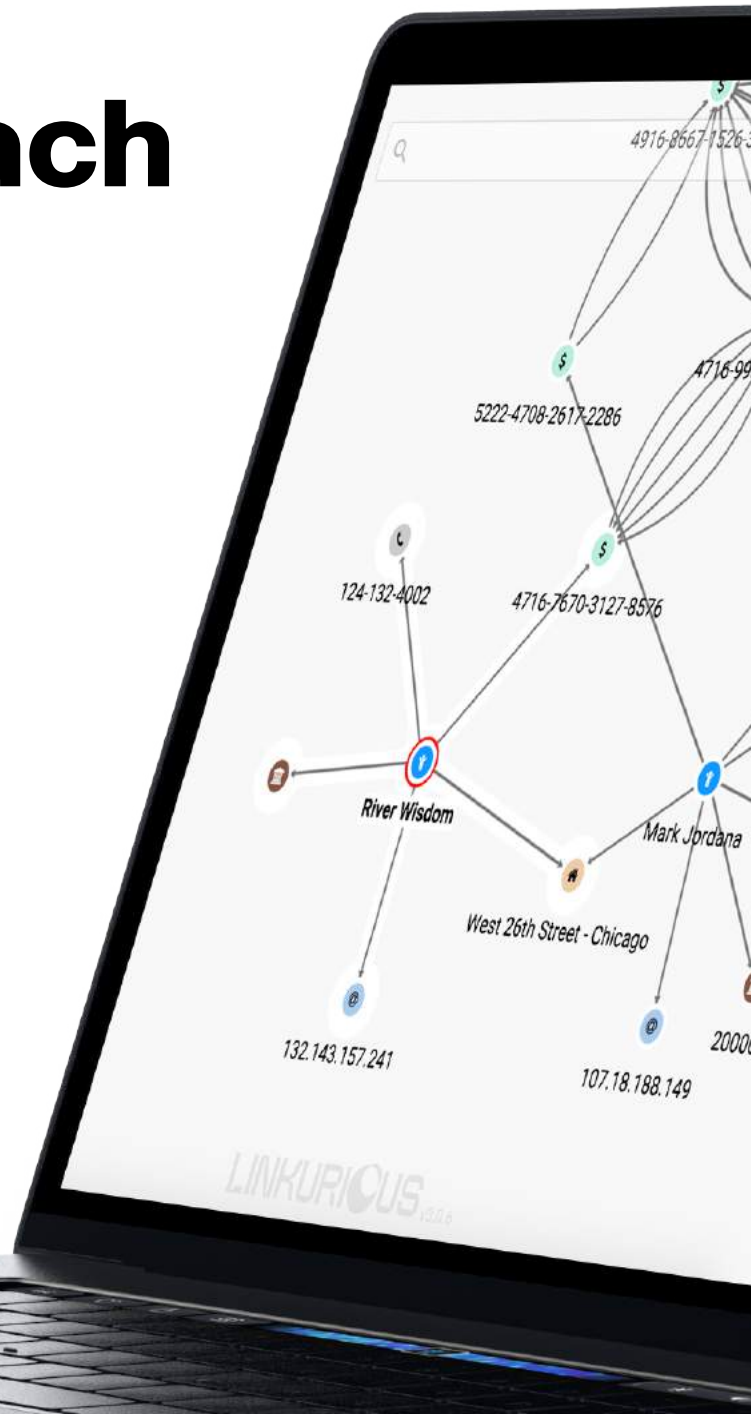
A more complete data picture and **the ability to detect complex patterns are invaluable assets** to identify cases of fraud or other threats in large volumes of data. For the banks, government agencies and other organizations turning to a graph approach, it leads to the discovery of new threats and faster investigations.

Using Linkurious Enterprise to leverage the graph approach

Linkurious Enterprise helps organizations move from tables to graph to **detect and investigate threats hidden in complex connected datasets**. This graph analytics and visualization solution provides both technical and non-technical users with a deep understanding of relationships and context to drive better decision making. Teams of analysts use our solution to enhance each step of the investigation process, from detection to case management.

Linkurious Enterprise lets you visualize and analyze your graph data in real time. It helps you:

- **Detect sophisticated threats:** the unified graph view of your data reveals suspicious connections and patterns otherwise hidden in silos.
- **Accelerate investigations:** graph visualization removes the difficulty of tracking information scattered across tools and tables, letting you find hidden insights faster.



Get a demo

Learn why thousands of financial crime professionals around the world rely on Linkurious Enterprise to uncover complex networks, expose hidden threats, and eliminate risk.

Free demo

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