Product Brief

Neo4j Graph Data Science Library

Harness the Predictive Power of Relationships

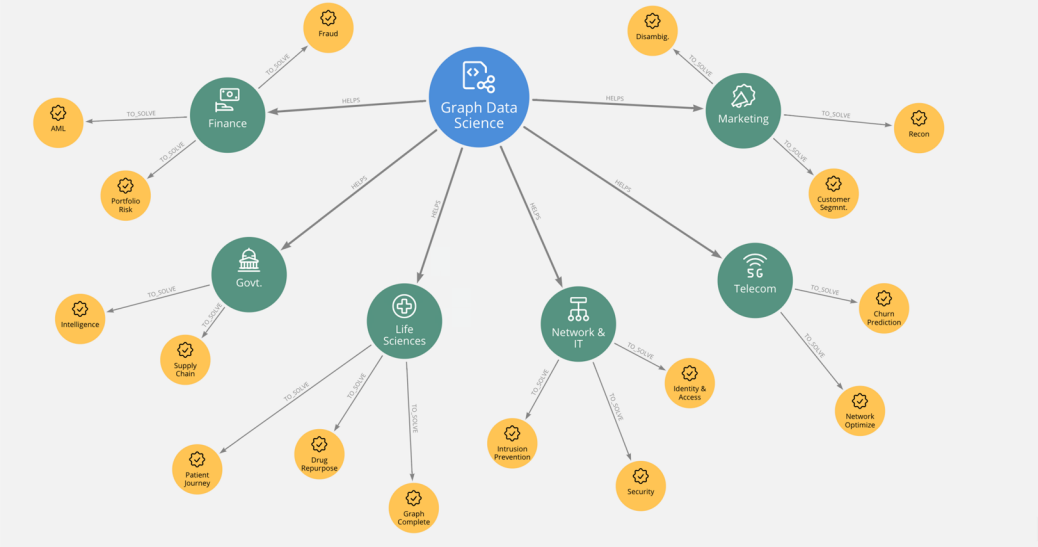
Graph data science uses the relationships and network structures in your data to help data scientists address complex questions about system dynamics and group behavior. The Neo4j Graph Data Science™ Library equips data scientists with a customized, flexible data structure for global computations and a repository of powerful, robust algorithms.

What is the Graph Data Science Library?

The Neo4j GDS Library provides data scientists with a rich toolkit offering a flexible, analytics-designed data structure for global computations, and a library of parallelized, algorithms that quickly compute over very large graphs.

Graph algorithms are unsupervised machine learning methods and heuristics that learn and describe the topology of your graph and are highly parallelized to quickly compute results over tens of billions of nodes.

The First Enterprise Framework for Graph Data Science



Neo4j Graph Data Science Library delivers:

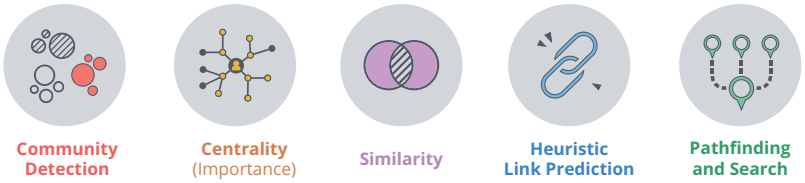
- Answers to previously intractable questions and use the predictive power of relationships for analytics and machine learning
- Scalable to tens of billions of nodes with optimized, parallelized algorithms and a compact footprint
- Performance of a graph-specific analytics workspace for computation with a native graph database
- Efficient in-memory graph model that loads data in parallel, flexibly aggregates and reshapes underlying data models
- Friendly interface with flexible graph reshaping in-memory, logical guardrails and a graph visualization tool
- Production features from the graph leader with dedicated graph data science support

Product Brief

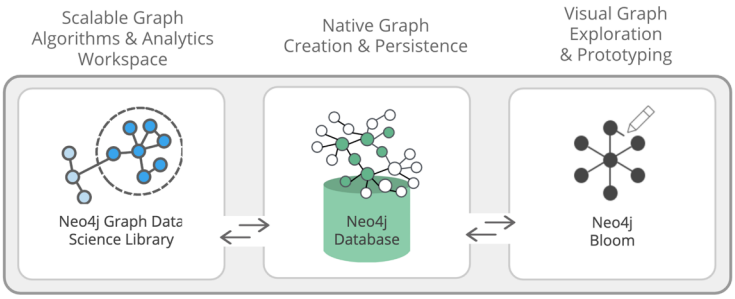
"Providing relevant content to online users, even those who don't authenticate, is essential to our business. We use the graph algorithms in Neo4j to transform billions of page views into millions of pseudonymous identifiers with rich browsing profiles. Instead of 'advertising in the dark', we now better understand our customers which translates into significant revenue gains and better-served consumers."

– Ben Squire
Senior Data Scientist
Meredith Corporation

Enterprise-Ready Analytics Workspace and Graph Algorithms



- **Community Detection algorithms** cluster graphs based on relationships to find communities where members have more significant interactions. Predict similar behavior or preferences, estimate resilience, find duplicate entities or simply prepare data for other analyses.
- **Centrality algorithms** reveal which nodes are important based on graph topology to uncover roles of individual nodes and their impact. These algorithms are used to infer group dynamics such as credibility, rippling vulnerability and bridges between groups.
- **Similarity algorithms** employ set comparisons to score how alike individual nodes are based on their neighbors or properties, and is used in applications such as personalized recommendations and developing categorical hierarchies.
- **Link Prediction algorithms** consider the proximity of nodes, as well as structural elements, to predict unobserved or future relationships. Preferential Attachment is included in this class of algorithms that has many applications, from drug repurposing and estimating collaboration to criminal investigations.
- **Pathfinding algorithms** find the most efficient or shortest paths to traverse between nodes. Evaluate routes for uses such as physical logistics and least-cost call or IP routing.



The Neo4j GDS Library is part of the first enterprise framework for Graph Data Science which also includes the Neo4j Database for graph persistence and Neo4j Bloom for graph exploration. This platform enables data scientists in a wide range of industries to harness the natural power of relationships and network structures to infer behavior. Leverage the data you already have for more practical predictions.

Neo4j is the leading graph database platform that drives innovation and competitive advantage at Airbus, Comcast, eBay, NASA, UBS, Walmart and more.

Thousands of community deployments and more than 400 customers harness connected data with Neo4j to reveal how people, processes, locations and systems are interrelated. Using this relationships-first approach, applications built using Neo4j tackle connected data challenges including artificial intelligence, fraud detection, real-time recommendations and master data. Find out more at Neo4j.com.

Questions about Neo4j?

Contact us around the globe:
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neo4j.com/contact-us

Thank you for downloading this Neo4j Product Brief - Graph Data Science Library datasheet! Carahsoft serves as Neo4j's Master Government Aggregator®.

To learn how to take the next step toward acquiring Neo4j's solutions, please check out the following resources and information:

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carah.io/Neo4jResources

For upcoming events:
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To purchase, check out the contract vehicles available for procurement:
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To set up a meeting or for more information:
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To request a quote:
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