Neo4j Graph Data Science Offers 65+ Ready-to-Use Graph Algorithms

Create your data models quickly to discover actionable insights

Pathfinding & Search

- Shortest Path
- Single-Source Shortest Path
- Delta Stepping
- All Pairs Shortest Path
- A* Shortest Path
- Shortest Path Dijkstra
- Yen's k-Shortest Path
- Minimum Weight Spanning Tree
- K-Spanning Tree
- Random Walk
- Breadth & Depth First Search
- Collapse Path

Heuristic Link Prediction

- Adamic Adar
- Common Neighbors
- Preferential Attachment
- Resource Allocation
- Same Community
- Total Neighbors

Supervised Machine Learning

- Node Classification
- Node Regression
- Link Prediction

Community Detection

- Triangle Count
- Triangle Listing
- Local Clustering Coefficient
- Weakly Connected Components
- Strongly Connected Components
- Label Propagation
- Louvain Modularity
- K-1 Coloring
- Modularity Optimization
- Speaker Listener Label Propagation
- K-means Clustering
- Leiden Algorithm
- Max K-Cut
- Conductance

Similarity

- Node Similarity
- Filtered Node Similarity
- Similarity functions
- K-Nearest Neighbors (KNN)
- Filtered KNN
- Jaccard Similarity
- Cosine Similarity
- Pearson Similarity
- Euclidean Distance
- Approximate Nearest Neighbors (ANN)

See our complete list of graph algorithms.

Centrality & Importance

- Degree Centrality
- Closeness Centrality
- Harmonic Centrality
- Betweenness Centrality & Approx.
- PageRank
- Personalized PageRank
- ArticleRank
- Eigenvector Centrality
- Hyperlink Induced Topic Search (HITS)
- Influence Maximization (Greedy, CELF)

Graph Embeddings

- Node2Vec
- FastRP
- FastRPExtended
- GraphSAGE

... and more!

- Synthetic Graph Generation
- Scale Properties
- One Hot Encoding
- Split Relationships
- Collapse Paths
- Pregel API (write your own algos)
- Graph Sampling
- Graph Stratified Sampling

Neo4j Graph Data Science is an analytics and modeling engine that uses the relationships in your data to discover fast, actionable insights and plugs into enterprise data ecosystems so you can get more data science projects into production quickly. Using pretuned graph algorithms, data scientists can explore billions of data points in milliseconds to identify hidden connections and generate compelling visualizations that lead to better stakeholder decision making.

Learn more about Neo4j Graph Data Science or contact us to speak with a Graph Data Science Specialist.