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

Create your data models quickly to discover actionable insights

neo4j

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
- Minimum Directed Steiner Tree
- Bellman-Ford Shortest Path

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
- K-Core Decomposition

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
- HashGNN - Knowledge Graph Embedding

Heuristic Link Prediction

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

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)

... and more!

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

Supervised Machine Learning

- Node Classification
- Node Regression
- Link Prediction

See our complete list of graph algorithms

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