Neo4j Aura Graph Analytics Offers 65+ Ready-to-Use Graph Algorithms

Go beyond traditional analytics to uncover deeper insights from any data source on any cloud platform. With these 65+ ready-to-use graph algorithms, you can reduce your code footprint and manual model building.

Pathfinding & Search

- Delta-Stepping Single-Source Shortest Path
- Dijkstra Source-Target Shortest Path
- Dijkstra Single-Source Shortest Path
- All Pairs Shortest Path
- A* Shortest Path
- Yen's Shortest Path
- Breadth-First Search (BFS)
- Depth-First Search (DFS)
- Random Walk
- Bellman-Ford Single-Source Shortest Path
- Minimum Weight Spanning Tree
- Minimum Directed Steiner Tree
- Prize-Collecting Steiner Tree
- Minimum Weight k-Spanning Tree
- Longest Path for DAG
- Collapse Path

Community Detection

- Triangle Count & Triangles Listing
- Local Clustering Coefficient
- Weakly Connected Components (WCC)
- Strongly Connected Components (SCC)
- Label Propagation
- Louvain
- K-1 Coloring
- Modularity Metric
- Modularity Optimization
- Speaker-Listener Label Propagation
- K-Means Clustering
- Leiden
- Approximate Maximum K-Cut
- Conductance Metric
- K-Core Decomposition
- HDBSCAN

Node Embeddings

- Fast Random Projection (FastRP)
- GraphSAGE
- Node2Vec
- Hash GNN - Knowledge Graph Embedding

Topological Link Prediction

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

Centrality & Importance

- Degree Centrality
- Closeness Centrality
- Harmonic Centrality
- Betweenness Centrality
- PageRank
- Personalized PageRank
- ArticleRank
- Eigenvector Centrality
- Hyperlink Induced Topic Search (HITS)
- Articulation Points
- Bridges
- Influence Maximization (CELF based on Greedy)

Similarity

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

Supervised Machine Learning

- Node Classification
- Node Regression
- Link Prediction

And More!

- Topological Sort
- Longest Path
- Pregel API (write your own algorithms)
- Scale Properties
- One Hot Encoding
- Split Relationships

With the industry's largest library of optimized graph algorithms, Neo4j Aura Graph Analytics empowers data analysts and scientists to quickly uncover hidden patterns and relationships within organizational data — no ETL required.

Designed to handle large graphs, Graph Analytics uses multi-threaded algorithms and in-memory processing to deliver unparalleled speed. Now, you can scale compute and storage independently with pay-as-you-go pricing, cutting costs by up to 70%.

Learn more about Aura Graph Analytics or contact Neo4j to speak to a Graph Analytics Specialist.

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