



Amazon Neptune Analytics Algorithm Support

Neptune Analytics natively supports over 25 optimized graph algorithms and variants in the 5 most popular categories that help customers extract insights from their graphs.

Pathfinding	Centrality	Similarity
Find the existence, quality, or availability of a path between nodes	Determines the absolute or relative importance of a node in the graph	Compare the similarities between different graph structures
<ul style="list-style-type: none">Breadth-First SearchSingle-Source Shortest PathTop-K Single Source Shortest Path	<ul style="list-style-type: none">DegreePageRankCloseness Centrality	<ul style="list-style-type: none">Common NeighborsTotal NeighborsJaccard SimilarityOverlap Similarity
Common Uses: <ul style="list-style-type: none">Logistics OptimizationSocial Network RecommendationsRoute Optimization	Common Uses: <ul style="list-style-type: none">Fraud Ring/Collusion DetectionSocial Network influencer identificationSupply Chain Risk analysis	Common Uses: <ul style="list-style-type: none">Biological structural analysisSocial Network cluster comparisonLink Prediction
Clustering & Community Detection	Vector Similarity Search	... and more
Identify meaningful groups or clusters within graph structures	Identify approximate nearest neighbor (ANN) nodes by comparing vector embeddings using the Hierarchical Navigable Small World (HNSW) algorithm	Neptune Analytics is an in-memory optimized graph database for analytics optimized for analytics, low-latency query, and vector similarity
<ul style="list-style-type: none">Weakly Connected Components (WCC)Strongly Connected Components (SCC)Label Propagation	<ul style="list-style-type: none">DistanceTop-K	<ul style="list-style-type: none">Graph as a serviceFully managed environmentPay-as-you-goAlgorithms integration with openCypher Query Language
Common Uses: <ul style="list-style-type: none">Social network clustersFraud Ring IdentificationHouseholdingBiological Interaction	Common Uses: <ul style="list-style-type: none">RAG applicationsKnowledge Graph backed Chat botsApproximate Nearest Neighbors	

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