GRAPHTALK PHARMA & LIFE SCIENCES · 2 JULY 2026 · MUNICH

OPENING KEYNOTE

Augmented AI: Building Contextual Intelligence with Knowledge Graphs

Dr. Alexander Jarasch · Global Head of Pharma & Life Sciences · Neo4j

THE CONTEXT

AI fatigue isn't about the model. It's about the foundation.

In pharma and life sciences, fragmented data limits the impact of GenAI. Without connected, explainable context, AI remains stuck in pilots.

Fragmented data

Omics, EHR, patents, literature, supply chain — each locked in a different silo.

Context-free AI

Models that hallucinate because they cannot see what your data actually means.

Pilots that stall

Impressive demos. No production deployment. No measurable outcome.

Knowledge graphs change that — unifying data and creating a structured reasoning layer for grounded, traceable, up-to-date AI.

40%+

of agentic AI projects will be cancelled by 2027

Source: Gartner, 2025

Not because the models fail — because the data foundation underneath them was never built.

Agents without grounded context are autocomplete at scale.

GARTNER RESEARCH

Knowledge Graphs · Healthcare & Life Sciences CIO · 2025

The Healthcare & Life Sciences CIO's Path to AI Precision and Data Value

01 Unify data via knowledge graph

Knowledge graphs bridge heterogeneous clinical, genomic, and operational data — creating a single, queryable source of enterprise truth.

02 Graph-grounded AI reduces hallucination

GraphRAG anchors every AI response to verified, graph-traversed facts — cutting hallucination and improving output precision in clinical settings.

03 Regulatory-grade explainability

Every AI answer carries a graph-grounded provenance trail. Auditable for EMA, FDA, and GxP compliance. No black-box outputs.

CIO RECOMMENDATION

Build the knowledge graph first.
AI precision follows.

The knowledge graph is not a project — it is the foundation that makes every AI investment compound over time. Organisations that build it first gain a structural advantage in the emerging agentic AI era.

Pharma use cases enabled

Rare disease ID · Patient journey · Drug-drug interactions · Regulatory-grade AI · Trial site & cohort selection

GRAPHRAG

Grounded AI vs. Guesswork

VECTOR RAG (STANDARD)

Query → Semantic similarity match → Retrieved text chunks → LLM generates answer

- ✗ May retrieve contradictory information
- ✗ No structural grounding or relationship context
- ✗ No provenance trail for regulatory review

GRAPHRAG WITH NEO4J

Query → Graph traversal → Verified, connected facts → LLM grounds answer in graph neighbourhood

- ✓ Every retrieved fact is graph-verified and related
- ✓ Multi-hop reasoning across entities and relationships
- ✓ Full provenance trail — auditable and explainable

EXAMPLE RESEARCH QUERY

"What targets connected to NASH are not yet in clinical trials, outside current patent protection, and have supporting genetic evidence from at least two GWAS studies?"

GraphRAG answer

Grounded in graph traversal across Open Targets, ChEMBL, patent filings, and clinical trial registry. Every result is traceable. Zero hallucination.

CONTEXT DISAMBIGUATION

Same name, three meanings — only context tells them apart.

Query: top-3 nearest neighbors | All 3 results → record name: **"AD"**

VECTOR SEARCH ONLY

Returns distance scores — no context, no relationships

#1 **AD** embed[…] `0.214, -0.731, 0.009, 0.883, -0.412, 0.556, -0.127, 0.338 …` DIST `0.079`

#2 **AD** embed[…] `-0.503, 0.177, 0.841, -0.266, 0.629, 0.044, -0.715, 0.392 …` DIST `0.082`

#3 **AD** embed[…] `0.761, -0.088, 0.433, 0.917, -0.354, 0.202, 0.678, -0.541 …` DIST `0.088`

Three identical labels, three distances. The LLM cannot distinguish — **hallucinations likely.**

GRAPH + VECTOR

Graph traversal reveals what each record actually means

#1 **AD** – **Disease** – Pathology – Patient

→ Alzheimer's Disease

#2 **AD** – **Protein** – Enzyme – Fermentation

→ Alcohol Dehydrogenase

#3 **AD** – **Microsoft** – Identity – Directory

→ Active Directory

Relationships make each meaning explicit. **The LLM answers with precision — no guesswork.**

MULTI-OMICS · RNA EXPRESSION

Similar RNA fingerprints — only the graph reveals the disease context.

Query: top-3 nearest neighbors | All 3 results → multi-omics experiment nodes

VECTOR SEARCH ONLY

RNA expression embedding — no disease context, no relationships

#1	EXP 01	rna[…] 0.831, -0.214, 0.557, 0.093, -0.672, 0.441, 0.318, -0.785 …	DIST 0.071
#2	EXP 02	rna[…] -0.109, 0.763, -0.388, 0.821, 0.047, -0.534, 0.692, 0.175 …	DIST 0.084
#3	EXP 03	rna[…] 0.912, -0.345, 0.128, -0.867, 0.504, 0.733, -0.261, 0.447 …	DIST 0.091

Three similar RNA fingerprints, three distances. Which experiment relates to diabetes? **The vector cannot tell.**

GRAPH + VECTOR

Relationships reveal the disease context each experiment belongs to

#1 EXP 01 – Disease – Metabolic – Patient

→ **Diabetes** → include in study

GENES PPARG HNF4A INS | PATHWAY Insulin signaling · PI3K/AKT

#2 EXP 02 – Metabolism – Liver – Enzyme

→ **No diabetes link** → exclude from study

GENES CYP2E1 ADH1B ALDH2 | PATHWAY Ethanol metabolism · Oxidative stress

#3 EXP 03 – Disease – Neurological – Patient

→ **Parkinson's Disease** → different study

GENES SNCA LRRK2 PINK1 | PATHWAY Dopamine synthesis · Mitophagy

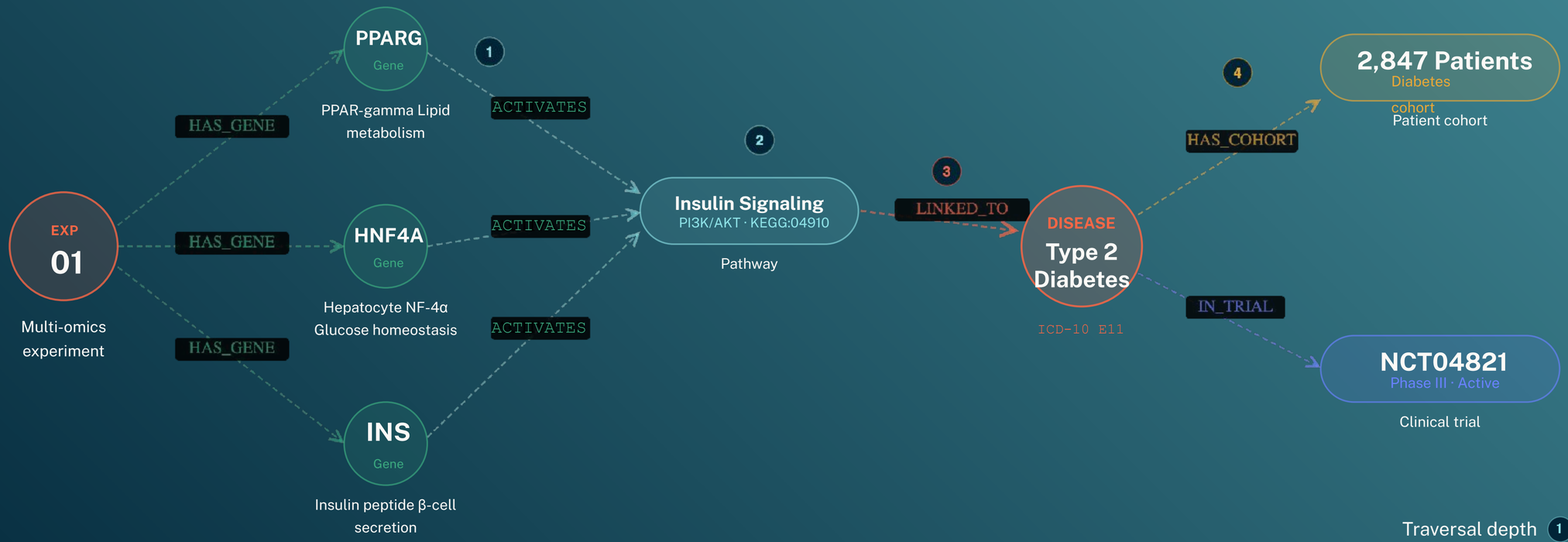
Graph context instantly separates the diabetes-relevant experiment.

Precise retrieval, no hallucination.

GRAPHRAG · EXPLAINABILITY

Tracing EXP-01: from embedding to evidence

```
MATCH (e:Experiment{id:'EXP-01'} ) -[:HAS_GENE]→
(g:Gene)-[:ACTIVATES ]→(p:Pathway)-[ :LINKED_TO]→
(d:Disease) RETURN e, collect(g), p, d
```



4 hops. Fully auditable path from experiment to clinical evidence. **No black box — every inference is a named relationship.**

THE CHALLENGE

Pharma data is heterogeneous, connected, and mostly unstructured.

HETEROGENEOUS

Thousands of formats

Genomics · Proteomics · EHR · DICOM · Lab data · Patents · Scientific literature · Regulatory dossiers · Clinical reports · Supply chain records · SDS sheets

Each source speaks a different language. No shared vocabulary. No common schema.

CONNECTED

Everything relates to everything

Gene → Protein → Compound → Disease → Pathway → Clinical Trial → Approval → Patent → Competitor Drug

The value lives in the relationships. Row-based systems lose them. Graphs keep them.

UNSTRUCTURED

80%+ is text & documents

Clinical Study Reports · Drug labels · Regulatory submissions · Patents · Scientific papers · Adverse event narratives · Investigator notes · Competitive intelligence

Vector search retrieves it. Knowledge graphs understand it. Both together: precision AI.

GARTNER RESEARCH

CPO Insights · 2025

Agentic AI Is Blind Without Context (Graphs)

KEY FINDING

"AI agents can only act on what is in their context window. Without a structured context graph providing persistent enterprise knowledge, agents operate blind — unable to access history, relationships, or institutional memory."

Persistent memory

Context graphs give agents a brain that survives session boundaries.

Shared knowledge

Multi-agent systems share a common, structured knowledge substrate.

Traceable reasoning

Every agent decision traces back to a verifiable graph-grounded fact.

PHARMA IMPLICATION

In pharma, blind AI carries patient risk.

Drug-drug interactions · Regulatory history · Safety signals · Clinical trial provenance — context is not optional when patient outcomes are at stake.

Gartner recommendation

Build context graphs as persistent memory infrastructure for all enterprise AI agents — before deploying agents at scale.

GARTNER RESEARCH

Emerging Tech · AI Vendor Race · 2025

Context Graphs: The New Essential Infrastructure for Agentic AI

THE PROBLEM

AI Institutional Amnesia

Every AI agent session starts from zero. Decisions made, knowledge gained, context established — all lost when the session ends. Enterprises cannot run on amnesiac AI.

THE SOLUTION

Context Graphs as Persistent Memory

Context graphs store enterprise knowledge as a structured, traversable graph — persisting across agent sessions, queryable in real time, shared across multi-agent systems.

PHARMA EXAMPLE

A clinical agent asked about compound X this week should know what happened in its phase II trial last month.

Without a context graph: the agent starts from scratch. With a context graph: trial history, safety signals, regulatory feedback, and competitive positioning are all traversable facts — not things that have to be re-explained in every prompt.

Gartner finding

Context graphs will become must-have AI infrastructure for pharma enterprises by 2026–2027. Early movers are already testing it with Neo4j.

THE ARCHITECTURE

From Graphs to Knowledge Graphs to Context Graphs

LAYER 01

Graph Database

Connected entities at scale. Relationships as first-class data. Multi-hop traversal in milliseconds. ACID-compliant. Production-grade.

Cypher queries · Neo4j Aura · GQL ISO standard

LAYER 02

Knowledge Graph

Semantic meaning. Domain ontologies. Curated enterprise knowledge. Links internal data to public knowledge bases — UMLS, ChEMBL, UniProt, PubMed.

GraphRAG · Ontology mapping · Entity resolution

LAYER 03

Context Graph

Agent memory. Temporal validity. Grounded AI reasoning. Persistent state across sessions. The structured substrate that makes agentic AI reliable and auditable.

Agentic AI · Multi-agent memory · Provenance tracking

Neo4j powers all three layers — on one platform, any cloud.

THE PLATFORM

The Neo4j Graph Intelligence Platform

01 · NEO4J AURA

Managed graph database

Fully managed, ACID-transactional. Petabyte scale. <200ms multi-hop traversal. AWS · Azure · Google Cloud.

02 · GRAPH DATA SCIENCE

65+ production algorithms

Community detection · Centrality · Link prediction · Graph embeddings · Used as feature factory for downstream ML.

03 · GRAPHRAG

Grounded LLM answers

Every LLM answer grounded in verified, traversable graph facts. Native integrations with LangChain, Vertex AI, Bedrock, Azure OpenAI.

04 · DOCUMENT INTELLIGENCE

Documents → Knowledge Graph

Upload any document. Automatic entity & relationship extraction. Knowledge graph populated inside Aura — immediately. No ETL needed.

One platform · Any cloud · SOC 2 · HIPAA · GxP-ready

USE CASES

Your business is a Graph.
Use Cases across the Drug Lifecycle.

DISCOVERY & R&D

Unified Research KG · GraphRAG & GenAI · Target–Disease Mapping · Graph Data Science · Biomarker discovery · Patent intelligence · Competitive Intelligence

AstraZeneca · Novartis · Bayer · Merck KGaA · Novo Nordisk · Servier · Qiagen · Sandoz · Zoetis · US Pharmaceutical

DEVELOPMENT & CLINICAL

Trial ↔ Research linking · Site & investigator selection · Patient cohort ID · EHR harmonization ·

Novo Nordisk · GSK · Bayer · Boehringer-Ingelheim · Insel Spital Bern · Care-for-Rare

MANUFACTURING & SUPPLY

Supply chain digital twin · Supplier 360 & risk · Context graph + agentic AI · QA investigation intelligence · Cold-chain integrity

AstraZeneca · Boehringer-Ingelheim · J&J · MSD · Pfizer · Boston Scientific · US Pharmaceutical

COMMERCIAL & OUTCOMES

HCP 360 & KOL mapping · Patient journey · Market access · Rare disease identification · RWE platform · Pharmacovigilance

AstraZeneca, Novartis, US Pharmaceutical, Care-for-Rare

COMPLIANCE & GOVERNANCE

Value transfer & HCC · Counterfeit detection · Cybersecurity & IAM · Entity resolution · Sunshine Act reporting

Gilead · Top-10 pharma HCC · Merck KGaA · Tier-1 MedTech IAM

TODAY'S JOURNEY

Following the Pharma Lifecycle

09:35 – 11:30

R&D

Accelerating Discovery with Connected Data

Vladislav Kim · Bayer Bjoern Oest Hansen · KWS Brent Murphy · BASF

12:00 – 13:10

Clinical & Legal

Trials, IP & Contextual Intelligence

Olga Endrich + Karen Triep · Insel Spital Peeyush Sahu · Sandoz

14:30 – 15:40

Supply Chain

Optimizing Operations End-to-End

Mambwe Mumba · Boehringer-Ingelheim Jonathan Lowe · Amalgo

16:00 – 16:50

Technical Deep Dive

Agentic & Visual Intelligence

Jean-Marc Guerin · Neo4j Niels De Jong · Neo4j

STAGE 1 · 10:00 – 11:30

R&D: Accelerating Discovery with Connected Data

Bayer · KWS Group · BASF

R&D · KNOWLEDGE GRAPH

Unified Research Knowledge Graph

Researchers navigate tens of millions of data points across disconnected systems. The knowledge graph connects them — enabling multi-hop reasoning no single database can.

EXAMPLE MULTI-HOP QUERY

Gene → Protein → Compound → Disease → Pathway →

Clinical Trial → Approval → Patent → Competitor

Milliseconds. Across 100M+ entities.

WHAT THE GRAPH CONNECTS

Internal research data
Omics · lab assays · internal trial data · HTS screening results

Public knowledge bases
UniProt · ChEMBL · Open Targets · Reactome · UMLS · ClinicalTrials.gov

Literature & patents
40M+ PubMed papers · 10M+ patent filings — connected via Document Intelligence

Production today

6 of the top 10 global pharma companies run production research knowledge graphs on Neo4j.

AstraZeneca · Novartis · Bayer · Merck KGaA · Novo Nordisk · Servier

STAGE 1 · R&D SESSION · TODAY'S SPEAKERS

Accelerating Discovery with Connected Data

10:00 – 10:25

Knowledge Graph Reasoning and GraphRAG for Early Target Discovery

Biomedical KG reasoning leverages graph topology to infer novel gene-disease associations. GraphRAG anchors each retrieved fact to a verifiable graph relation — improving reliability and reducing hallucinations.

Vladislav Kim
ML Scientist · Bayer Pharma R&D

10:25 – 10:50

From Graph to Gene: AI for Explainable Candidate Gene Discovery

Integrating knowledge graphs, link prediction, and generative AI to enable explainable gene discovery in plant breeding. Connecting genes, traits, and biological evidence across crops.

Bjoern Oest Hansen
Sr. Research Lead – Knowledge Discovery · KWS Saat

10:50 – 11:15

Knowledge Graphs to Consolidate Biological Context for Non-Model Plants

Using knowledge graphs to integrate and consolidate biological context across plant species — including those without established model organism databases.

Brent Murphy
Senior Specialist Digitalization · BASF SE

DOCUMENT INTELLIGENCE

From Documents to a Knowledge Graph

Right inside Neo4j Aura

NEW IN NEO4J AURA

Document Intelligence · 2026

From Unstructured Documents to Connected Knowledge — In Minutes

01

Upload

PDFs · Word · Papers · Regulatory dossiers · CSRs · Patents

→

02

with Ontologies

Extract

LLM identifies entities, relationships, and key facts automatically

→

03

Structure

Entities and relationships auto-populate your Neo4j Aura knowledge graph

→

04

Query

Cypher queries · GraphRAG · Semantic search — immediately available

No ETL pipeline required. No custom code. Available natively inside Neo4j Aura.

DOCUMENT INTELLIGENCE IN PHARMA

Pharma Documents as Knowledge Graph Sources

R&D

Scientific Literature

PubMed papers · Pre-prints · Internal research reports · Lab notebooks

REGULATORY

Submissions & Dossiers

IND · NDA · MAA · CTD modules · Regulatory correspondence · Label texts

CLINICAL

Trial Documents

Clinical Study Reports · Protocols · Investigator brochures · Adverse event narratives

IP & LEGAL

Patents & Filings

Patent applications · Freedom-to-operate analyses · License agreements · IP landscapes

QUALITY

GMP Documentation

SOPs · Deviation reports · CAPA documents · Batch records · QA investigation reports

SAFETY

Pharmacovigilance

PSUR · DSUR · Individual case safety reports · Signal detection outputs

SUPPLY CHAIN

Vendor & Logistics Docs

Supplier qualification · SDS / MSDS · CMO contracts · Cold-chain documentation

INTELLIGENCE

Competitive Intelligence

Market reports · Pipeline analyses · Patent expiry reviews · Analyst briefings

CUSTOMER EXAMPLE · PRESENTED LAST YEAR

Competitive Intelligence via Knowledge Graph

From competitor PDF reports and patent filings to a living, queryable graph of the pharmaceutical competitive landscape — serving many different internal applications.

150M+
documents in their competitive intelligence knowledge graph

Many applications
One graph backbone serving CI, R&D, regulatory, and commercial teams simultaneously

WHAT THE GRAPH CONNECTS

Competitor Company → Drug Portfolio → Mechanism of Action → Target Indication → Clinical Phase → Expected Approval → Patent Expiry → Biosimilar Window

WHAT THE GRAPH ENABLES

Pipeline mapping
Which competitors are in which indications at what clinical stage — updated from documents automatically.

Patent landscape analysis
Which compounds are protected, when key patents expire, and where biosimilar windows open.

Market whitespace identification
Graph traversal surfaces indication–target combinations with low competitive density and available IP space.

"What took weeks of manual research by entire teams now takes hours."

R&D-ADJACENT · 12:25 – 12:55

Legal & IP Intelligence: Seeing the Patent Network

Sandoz

CUSTOMER EXAMPLE · SANDOZ · LEGAL / IP ANALYTICS

Patent Evergreening: The Hidden Network

Originator companies extend market exclusivity through layered patent strategies. Graph makes this invisible structure visible.

THE EVERGREENING GRAPH

Original Compound Patent → Formulation Patents → Delivery Method Patents → Method-of-Use Patents → Salt/Polymorph Patents → Pediatric Exclusivity

Filing date networks

Map the chronological pattern of patent filings — detecting systematic protection extension strategies.

Biosimilar entry windows

Graph traversal identifies the earliest market entry date for each biosimilar candidate across jurisdictions.

Freedom-to-operate analysis

Automated from patent documents ingested via Document Intelligence — no manual extraction required.

Hear more today at 12:25

Peeyush Sahu
Manager IP Analytics & Search · Sandoz

SANDOZ

STAGE 2 · 12:00 – 12:25

Clinical: When Healthcare Data Is Mostly Unstructured Text

Insel Spital Bern

CUSTOMER EXAMPLE · CLINICAL · INSEL SPITAL BERN

From Free Text to Structured Knowledge

Clinical data is multilingual, heterogeneous, and mostly unstructured. Neo4j converts it into a traversable knowledge graph — without losing the clinical meaning of the original entries.

THE PIPELINE

EHR free text → NLP / constrained LLM → Named entity recognition → Standard vocabulary mapping (OHDSI / ICD) → Relationship extraction → Neo4j knowledge graph

"Neo4j served not only as a repository, but as an analytic and visual engine for clinical interoperability."
Insel Spital Bern · Switzerland

WHAT THE GRAPH ENABLES

Medication harmonization
Cross-lingual mapping of drug names, abbreviations, and trade names to standard vocabularies.

Procedure coding
Cross-lingual retrieval pipeline maps heterogeneous procedure descriptions to standard codes.

Semantic gap analysis
Graph structure surfaces inconsistent or missing links — assessing mapping quality through shortest-path metrics.

Hear more today at 12:00

Karen Triep & Olga Endrich
Stv Bereichsleiterin Bereichsleiterin

INSELSPITAL
UNIVERSITÄTSSPITAL BERN
HÔPITAL UNIVERSITAIRE DE BERNE

STREAMING SESSIONS · LUNCH · VIRTUAL ONLY

Healthcare Graphs: From Student Projects to Clinical AI

13:30 – 13:50

Knowledge Graph of Drugs Data for Swiss Healthcare System

A bachelor's thesis in medical informatics at Bern University of Applied Sciences — building a medication knowledge graph from multiple data sources in Neo4j. Lessons from a graph newcomer on data modelling pitfalls and the power of Neo4j Bloom/Explore for visual data exploration.

Christian Franke
Product Owner Data & Analytics · SwissDRG

13:55 – 14:15

MedQGraph: TMKGs for AI-Driven Healthcare Insights

MRKG transforms structured MIMIC-IV EHR data into a scalable, queryable graph using Neo4j — integrating diagnoses, procedures, and medications into a cohesive structure for comprehensive exploration of patient history and AI-driven clinical insights.

Isaac Ritharson
AI Researcher · Northeastern University

STAGE 3 · 14:30 – 15:40

Supply Chain: Optimizing Operations End-to-End

Boehringer-Ingelheim · Amalgo

SUPPLY CHAIN · KNOWLEDGE GRAPH

A Spreadsheet Shows the Parts. A Graph Shows the Dependencies.

Multi-tier pharma supply chains span hundreds of suppliers, CMOs, and distributors across dozens of countries. The context graph is the only model that represents the full dependency structure.

THE SUPPLY CHAIN GRAPH

API Supplier → Contract Manufacturer (CMO) → Finished Goods → Quality Release → Distributor → Market

Overlaid with: Quality · Regulatory · Finance · Demand Forecast · Geopolitical Risk

WHAT THE KNOWLEDGE GRAPH ENABLES

Disruption simulation
Model a port closure, CMO failure, or regulatory hold. Answer the impact in minutes, not weeks.

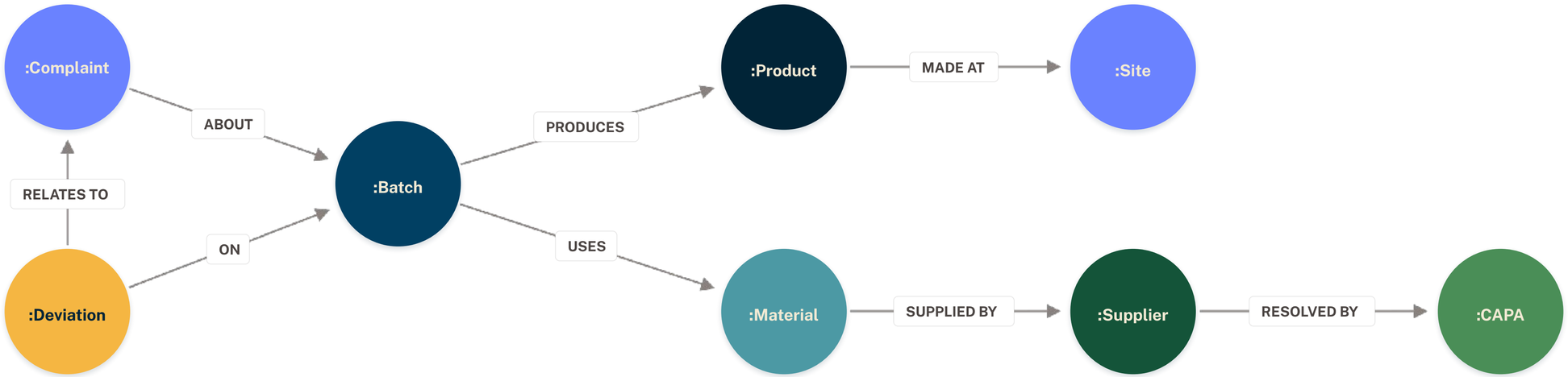
Supplier 360
Every dependency, every risk score, every alternate source — across all tiers — on one graph.

Bottleneck analysis
Identifying important nodes in your network —Running Graph Data Science

Production today
Boston Scientific · Johnson & Johnson · Merck Sharp & Dohme · Boehringer-Ingelheim

THE MODEL

The quality knowledge graph



Nodes are entities you already track; relationships already exist in your operation. The graph connects what each system knows — it does not replace them.

CUSTOMER EXAMPLE · BOEHRINGER-INGELHEIM

Agents That Interrogate the Graph in Plain Language

Supply Chain Insights: the first real overview of Boehringer-Ingelheim's internal and external supply chain — powered by a knowledge graph and an agentic AI layer.

WHAT THE CONTEXT GRAPH UNIFIES

Supply chain data · Quality systems · Regulatory affairs · Finance — in one queryable graph

EXAMPLE AGENTIC QUERIES

"Trace this product's API suppliers three tiers back."

"Where is our supply network over-concentrated?"

"What is our exposure to this geopolitical disruption event?"

"What resonated most wasn't the answer — it was the subgraph itself."

One product's entire supply network in a single interactive view, rather than pieced together by hand.

Hear more today at 14:30

Mambwe Mumba

Senior Data Scientist · Boehringer-Ingelheim

14:55 – 15:25

Financial Returns from Context Graph & AI that Reduces QA Investigation Durations

Human-in-the-loop QA investigations

The industry standard for timely investigation closure is 30 days. AI and Context Graph data — already captured in tools like Veeva and TrackWise — accelerate that timeline significantly.

Quantifying the financial value

Lean manufacturing leaders know shorter investigations benefit the bottom line — but where and how much? This session puts precise numbers on that intuition.

Knowledge graph simulations

Graph-based simulations reveal second-order effects and help avoid the bullwhip effect — ensuring operational improvements don't create downstream supply chain instability.

SPEAKER

Hear more today at 14:55

Jonathan W. Lowe

Founder · Amalgo LLC

THE PLATFORM

Graph Intelligence Platform

Neo4j's Graph Intelligence Platform

Most Comprehensive platform to build enterprise knowledge Layer

Graph AI

Agents & Ecosystem

Build multi hop agents in seconds.
Integrate with AWS, GCP, Azure, LangChain, ServiceNow, SalesForce, Databricks & Snowflake

Agentic Brain

Provides foundational services like memory, context-graph to power all AI platforms.

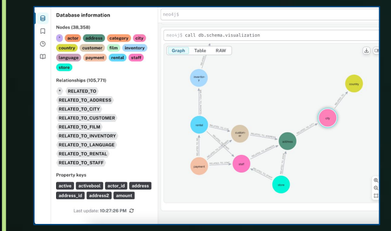
zep · mem0 · cognee

Agentic Solutions

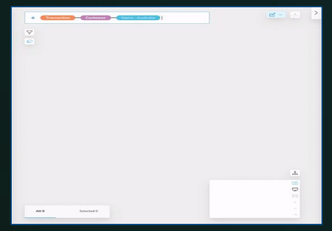
GraphAware Hume (Intelligence Analytics), NeoCarta (Enterprise Semantic Layer)

AI Powered Graph Tools

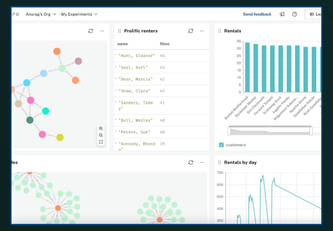
Browser (Query)



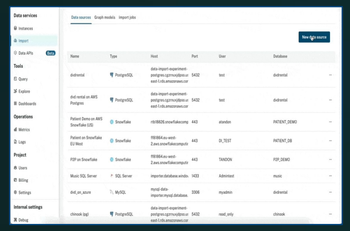
Bloom (Explore)



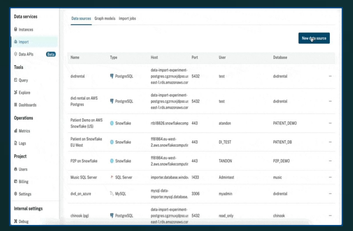
NeoDash (Dashboards)



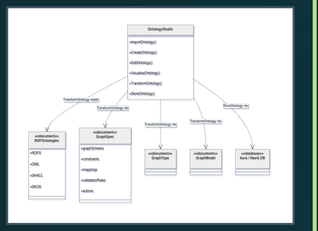
Data Import



Document Intelligence



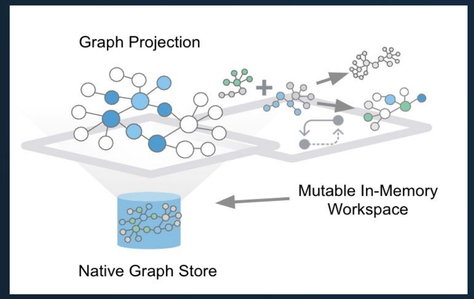
Ontology Management



Database & Graph Algorithms

Database

Analytics (GDS)



Graph Engine (Virtual Graph)

Data 360

Enterprise Agentic Reference Architecture

iApps
neo4j Context graph

Agents
neo4j Context Graph

Tools
neo4j Context Graph

Agentic Orchestration
Amazon Bedrock AgentCore
Gemini Enterprise
Microsoft Foundry
Agentforce
Agent Bricks
LangGraph
SNOWFLAKE CORTEX AGENTS

Knowledge Layer
Powered by neo4j Graph Intelligence Platform

Ontologies

Data

Memory

Databases
Graph
Wide-Column
In-Memory
Time-Series
Object-Oriented
Blob
Ledger
Vector

Lakehouse Platform
databricks
BigQuery
Microsoft Fabric

Apps & Services
node
python
Java
.net
GO
SaaS
Application

AI/ML Ops
vertex.ai
databricks
Amazon SageMaker
Azure Machine Learning

Catalog
AWS Glue
Unity Catalog
databricks
Microsoft Purview
SNOWFLAKE HORIZON
Dataplex
Collibra

Real-time Messaging & Processing
(Clickstream, IOT, CDC etc)

APACHE Spark
kafka
amazon Kinesis
Cloud Pub/Sub

TECHNICAL DEEP DIVE · 16:00 – 16:50

From Context Graphs to Agentic & Visual Intelligence

Context graph construction
How to prepare and structure your context graph for GenAI applications — schema design, entity resolution, temporal metadata.

GraphRAG & agentic workflows
Practical patterns for multi-agent memory sharing, grounded reasoning, and provenance tracking at enterprise scale.

Neo4j Studio & visual intelligence
Interactive graph visualization for exploring, validating, and communicating insights from your context graph.

PRESENTERS

Jean-Marc Guerin
Senior AI Solutions Architect · Neo4j

Niels De Jong
Product Manager · Neo4j

Today at 16:00

CUSTOMER EVIDENCE

9 of the top 10 global pharma companies use Neo4j in production.

100M+ entities in production R&D knowledge graphs. 84% of the Fortune 100 across all industries.

AstraZeneca
28+ Use Cases including R&D / CI graph, Sustainability, Supply Chain

Novartis
Target discovery + Identification of HCP

Bayer
OpenStudyBuilder + GraphRAG for R&D · Presenting today

Novo Nordisk
20+ Use Cases incl OpenStudyBuilder + Competitive Intelligence + R&D Graph

Boehringer-Ingelheim
OpenStudyBuilder + Supply chain graph · Presenting today

Gilead
Counterfeit detection at scale

Sandoz
Patent landscape intelligence · Presenting today

J&J · MSD · Boston Scientific
MedTech supply chain & PLM

CLOSING

The connected data foundation for pharma's next decade.

- **Knowledge graphs unify your data** — across omics, documents, clinical records, supply chains, and competitive intelligence.
- **Context graphs ground your AI** — giving agents persistent memory, traceable reasoning, and zero hallucination.
- **Neo4j powers both** — as the only graph intelligence platform purpose-built for enterprise pharma at production scale.

ANNOUNCEMENT

Neo4j is now a member of the Pistoia Alliance.

Joining the pre-competitive consortium advancing data sharing, standards, and technology collaboration across pharma and life sciences R&D.

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Let’s rock some graphs!