



Agentic Reasoning with POLE

(Integrating Neo4j and the Microsoft Agent Framework)



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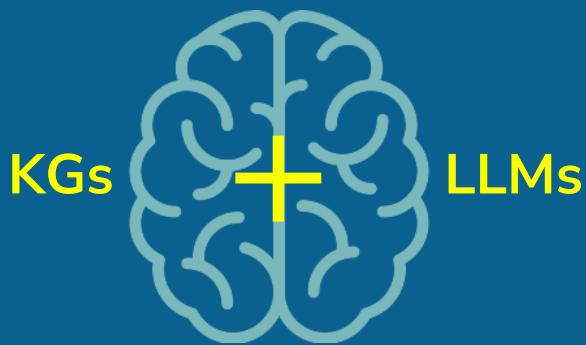
Graphs Are Everywhere



Knowledge Graphs Unlock GenAI

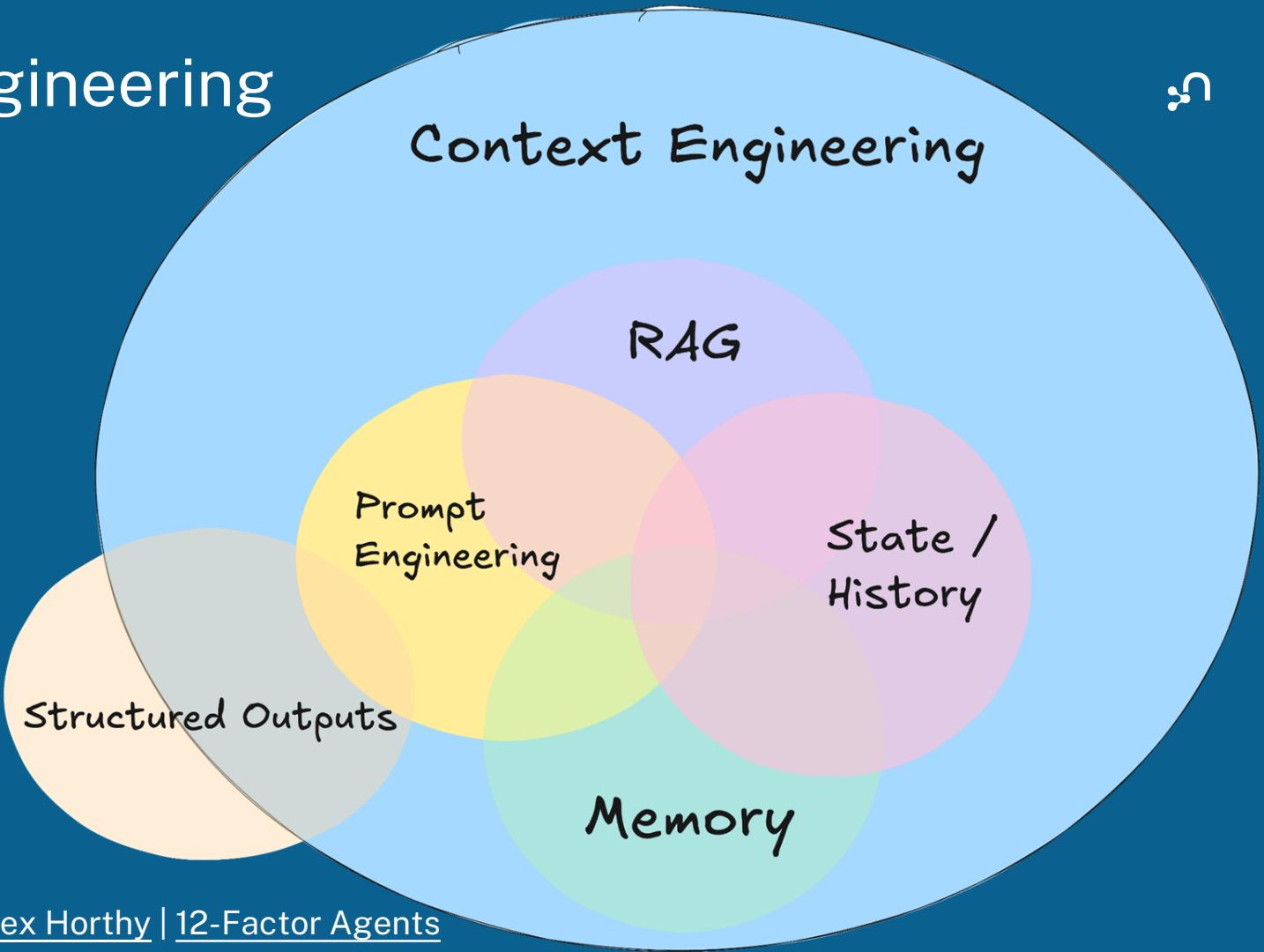


Knowledge
Context
Enrichment



Language
Reasoning
Creativity

Context Engineering Sources



Agents!

Planner

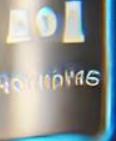
tool



Single Eye



Use Tools



AI

Brain

Persona



Use Toons



Memory



Adechanet AI
Technology



Single Agent vs Agentic

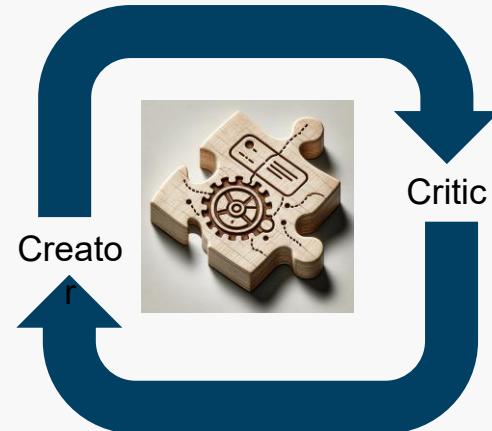
Usual Workflow

Please write me a blog post entry about AgentCon for LinkedIn in one go.

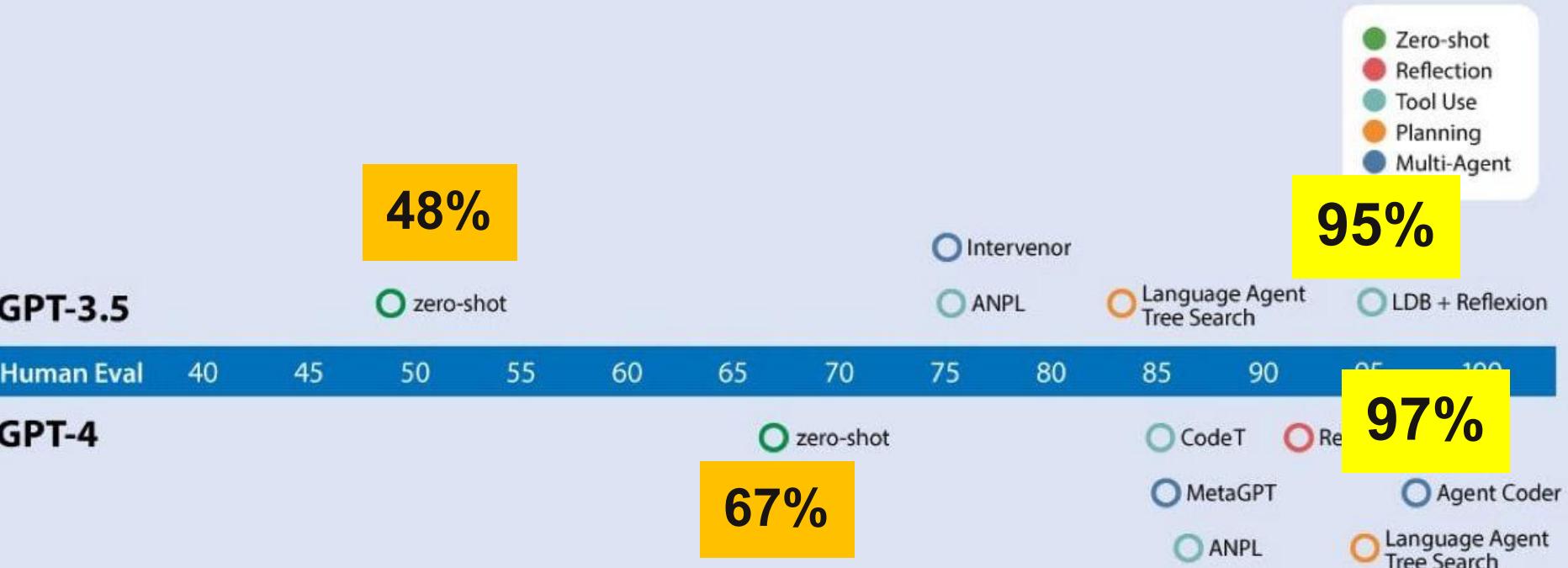


Agentic Workflow

- Please write me a blog post entry about AgentCon
- Need more information.
- Write the starting draft
- Consider what areas need revision
- Review for style
- Etc...



GPT-3.5 and GPT-4 performance using zero-shot and agent workflows



Source: Andy

Ng

Performance of GPT-3.5 and GPT-4 (zero-shot) on HumanEval, along with algorithms that use agent workflows on top of GPT-3.5 or GPT-4. Thanks to Joaquin Dominguez and John Santerre for help with this analysis.

MCP: The Tool for Agents

USB-C Port
for Agents

Makes Agents More
Capable & Grounded

Ecosystem
Interoperability

Reusable Tools
for Agents

Tool Discovery
& Modularity

Greater Power =
Greater Responsibility

M.C.P.



Knowledge Graph

Facts about people, places, events, or things **interlinked** by their relationships

Human and LLM-friendly readable format

Organizing principle provides context for reasoning about the data

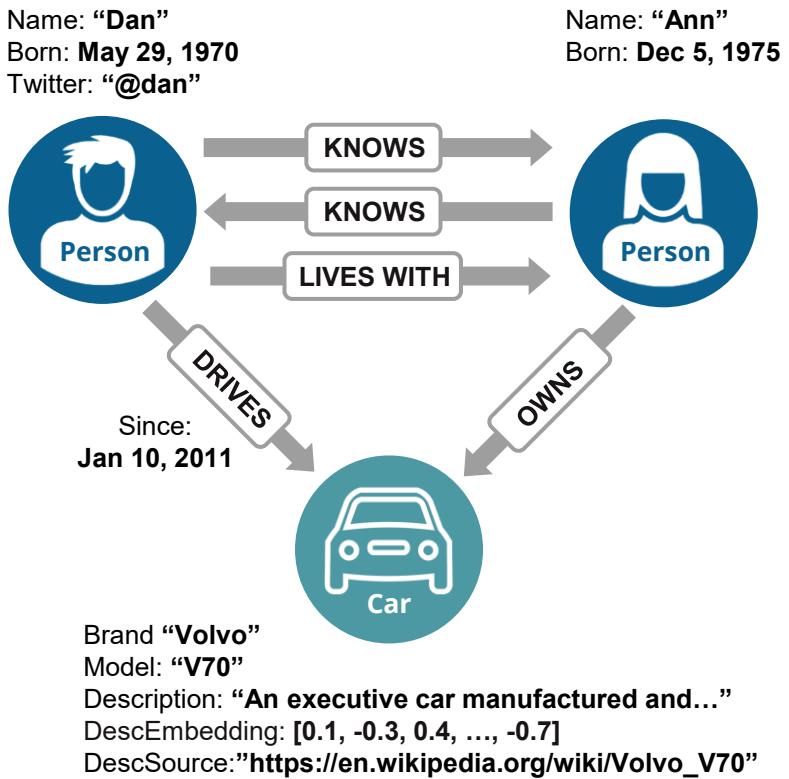
Digital Twin of your organization

Neo4j Graph Components

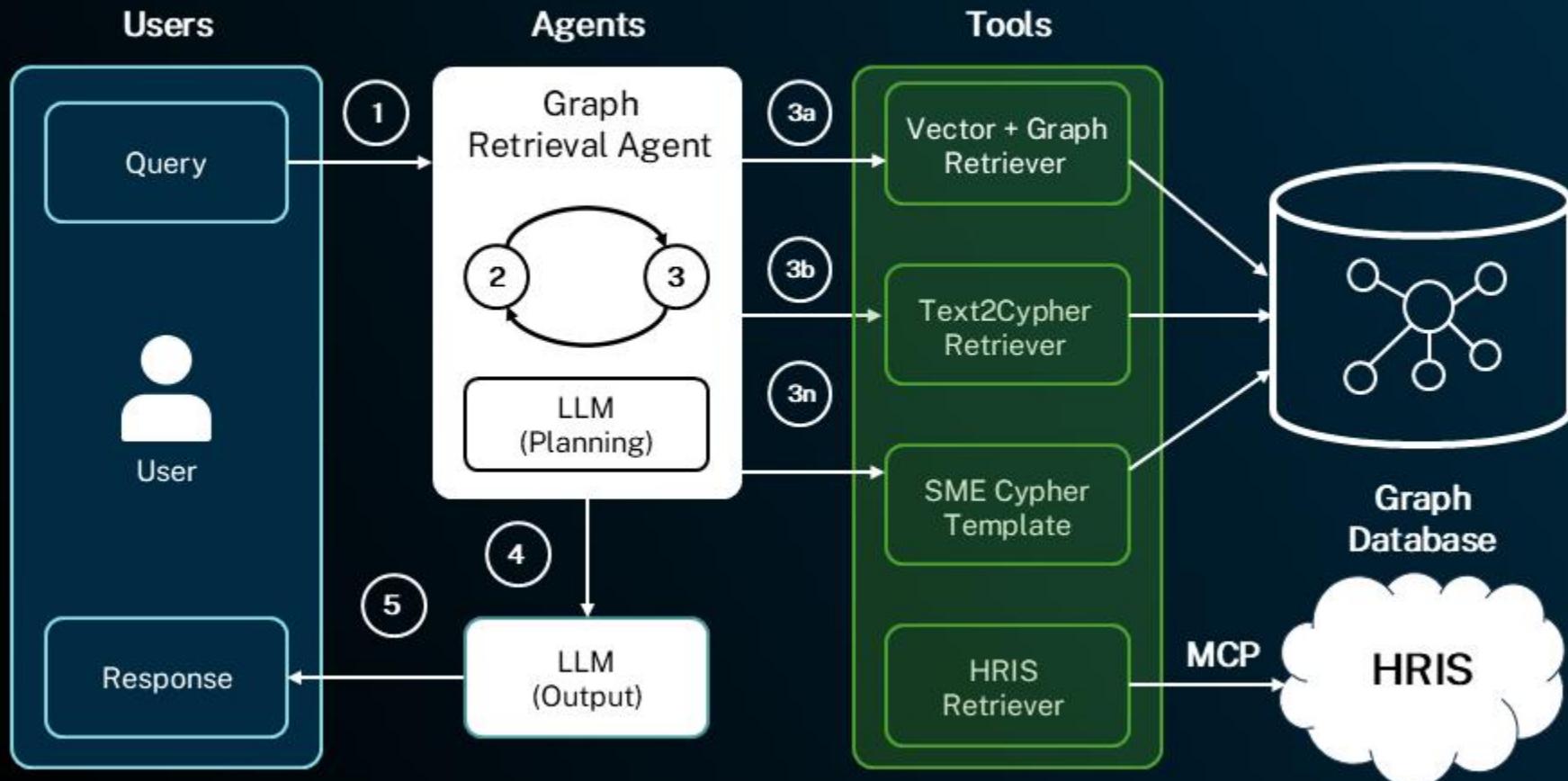
Nodes represent entities in the graph

Relationships represent associations or interactions between nodes

Properties represent attributes of nodes or relationships including vectors, can be *indexed*



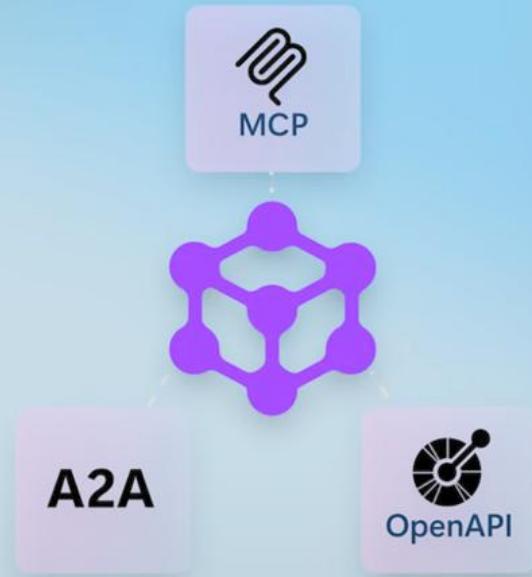
Agentic GraphRAG

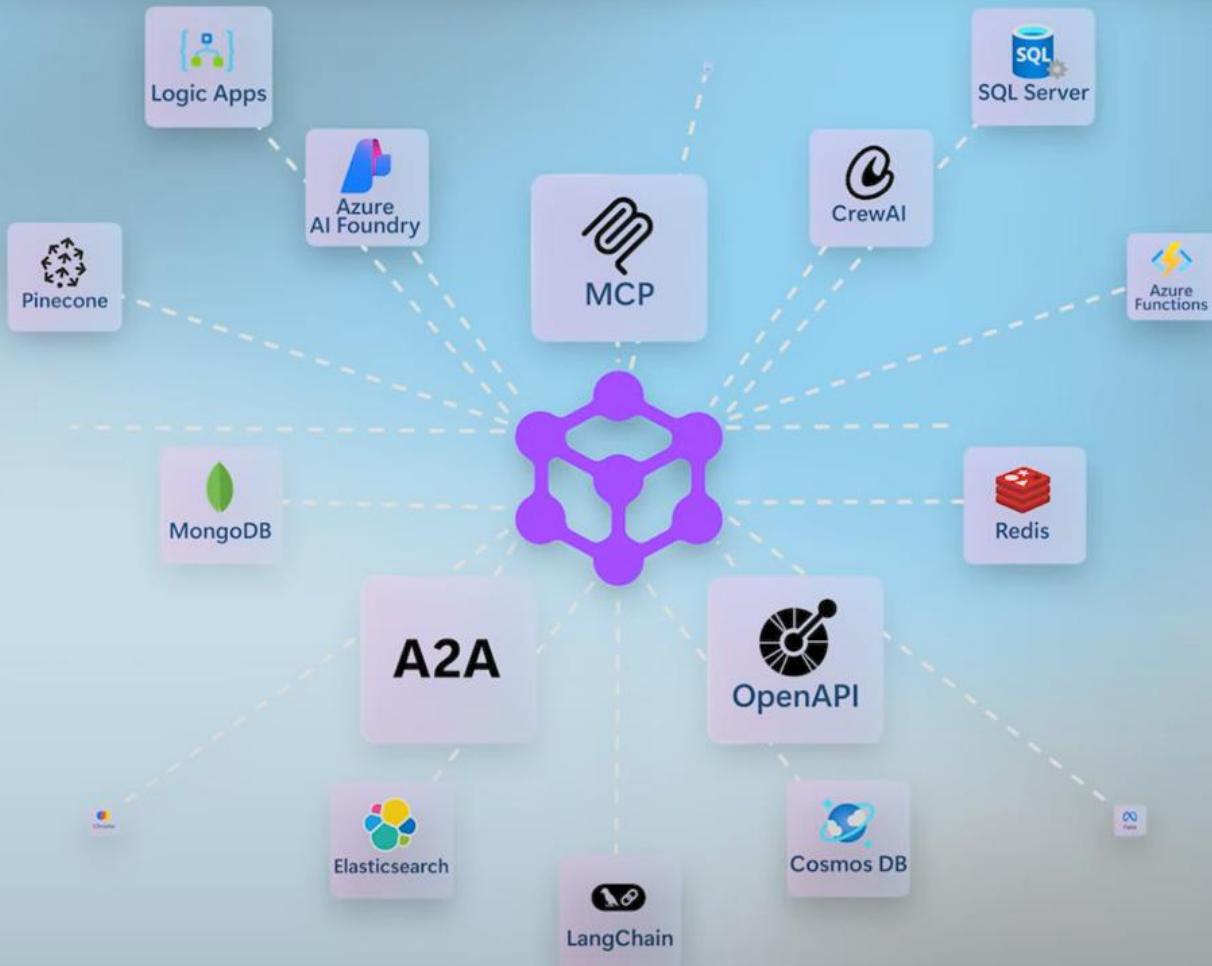






Microsoft Agent Framework





Meet **Holmsworth Marot** –
our AI detective agent

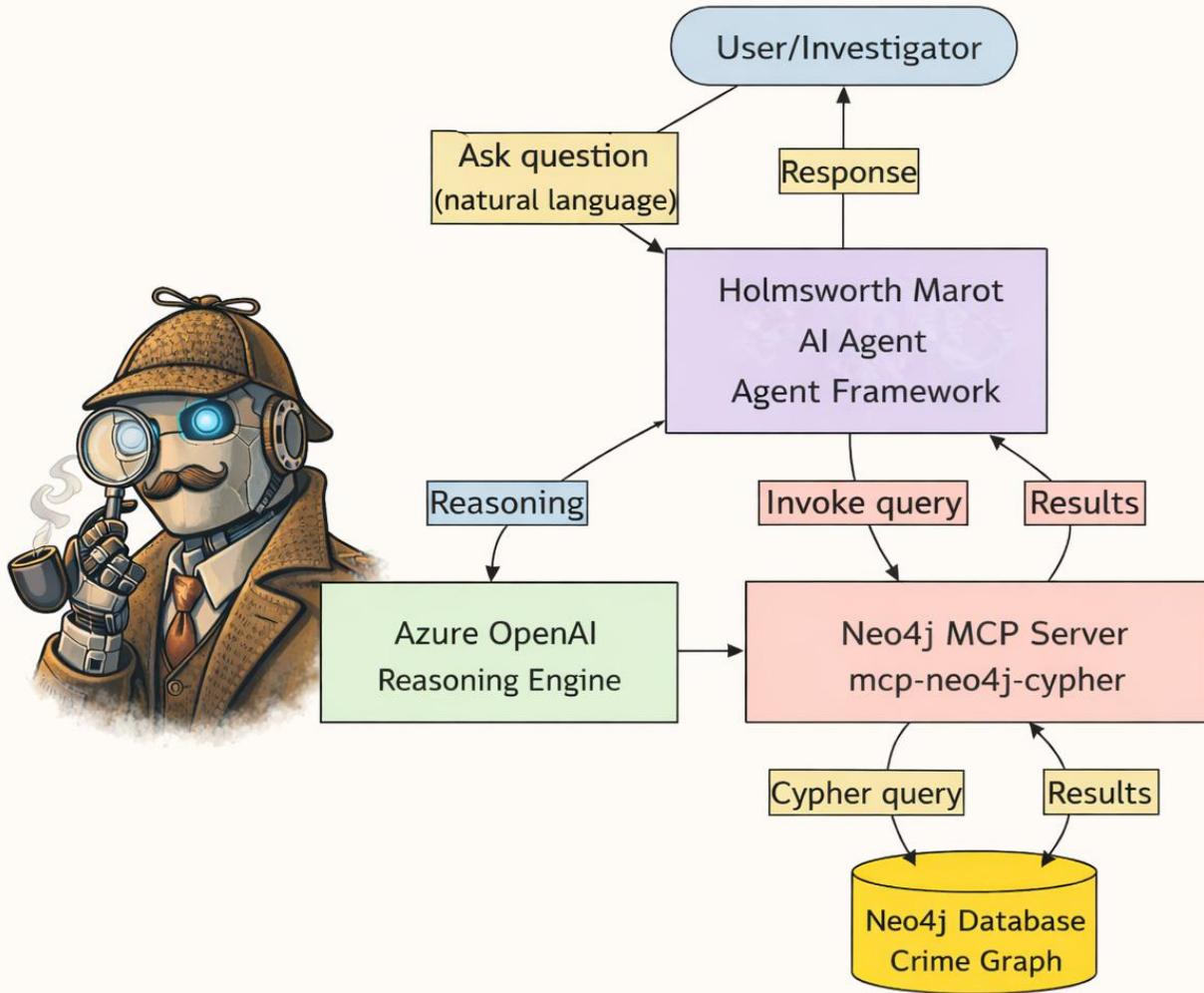
Built with **Agent Framework**,
connected to **Neo4j** via MCP

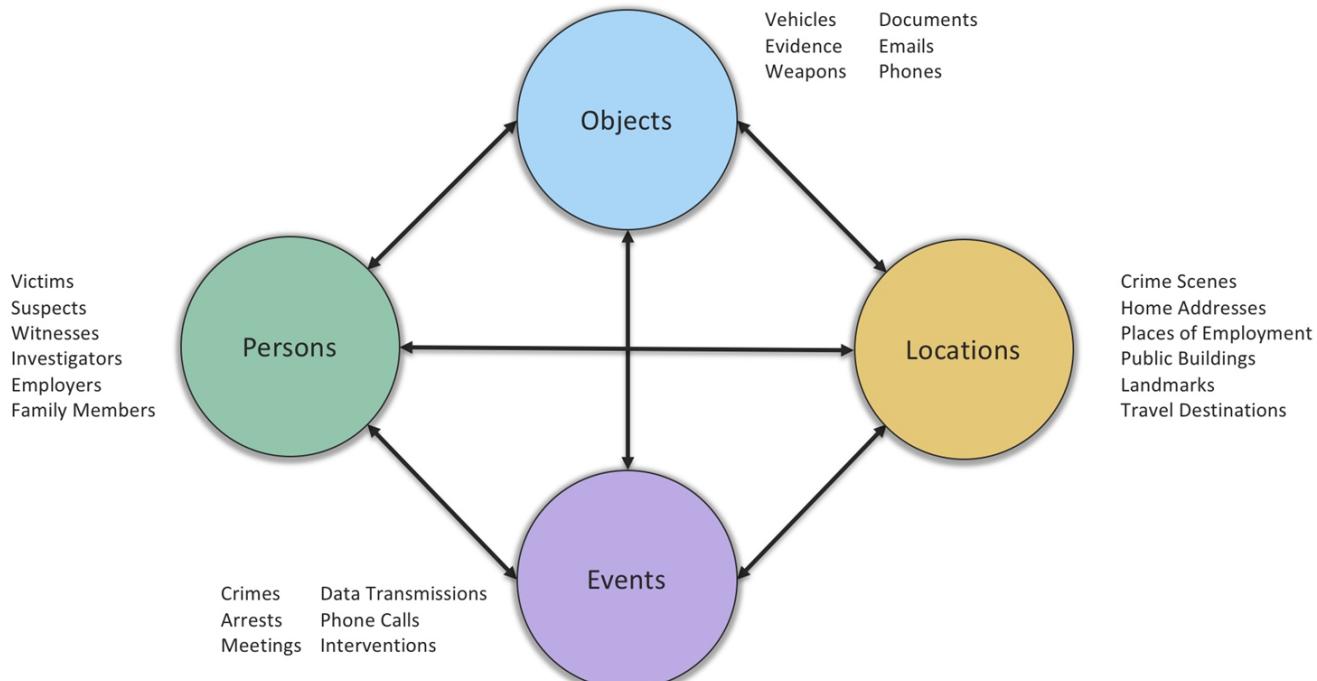


Has a personality, can reason
over evidence, query relationships

Not just a chatbot – a true agentic
system that investigates







<https://github.com/neo4j-graph-examples/pole>

Code & Demo





Graph Academy

Learn everything you need to know to combine Generative AI and knowledge graphs to produce highly accurate responses, with rich context and deep explainability.



<https://dev.neo4j.com/ga-rag>

①

KNOWLEDGE GRAPH FUNDAMENTALS

Knowledge graphs provide the foundation for representing complex relationships that traditional databases can't effectively handle.

②

BUILDING KNOWLEDGE GRAPHS

Learn how to combine structured and unstructured data to create a knowledge graph.

③

APPLIED GRAPH RAG PROJECTS

Apply everything you've learned to build production-ready GraphRAG application that deliver more accurate, contextual, and explainable AI results.

④

EVALUATING GRAPH RAG

Learn how to evaluate the performance of your GraphRAG applications and understand the metrics that matter.

Announcing NODES AI 2026

The largest technical community gathering dedicated to Graph + AI

CONFERENCE DATE

April 15 - Leonhard Euler's Birthday

CALL FOR PAPERS

Open now until December 12

sessionize.com/nodesai2026/

EVENT

- One day free online conference
- Live technical sessions from community experts
- From: 10:00 am ET / 4:00 pm CET
To: 5:00 pm ET / 11:00 pm CET

AI-FOCUSED SESSIONS IN THREE TRACKS

- Knowledge Graphs and GraphRAG
- Graph Memory and Agents
- Graph + AI in Production

WHO SHOULD PARTICIPATE

Anyone interested in Graphs + AI

SAVE THE DATE: neo4j.com/nodes-ai



Thank You!





Connect with Us!



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