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Stardog Voicebox

LLM-Powered Question
Answering with
Knowledge Graphs



INTRODUCTION

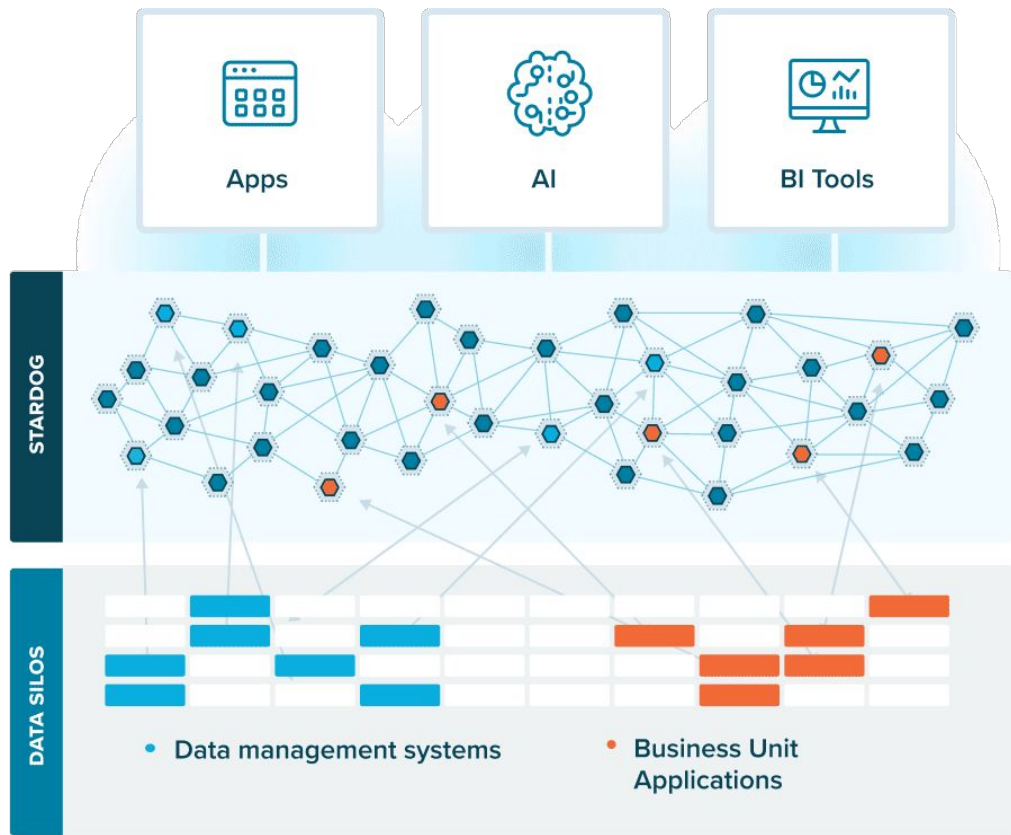


Evren Sirin
Founder and CTO, Stardog

Stardog Knowledge Graph Platform

A flexible, semantic data layer for answering complex queries across data silos.

- **Unifies** data and metadata using semantics and inferencing
- **Evolves** as your data evolves
- **Delivers context-enriched** data to existing systems and workflows



Knowledge Graphs and LLM: Better Together

“Search users expect answers to questions, not lists of links to resources that might contain the answers. Application technical professionals can use large language models and knowledge graphs to transform enterprise search to meet these demands.”

Gartner

“How Large Language Models and Knowledge Graphs Can Transform Enterprise Search”
March 2023



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Stardog Voicebox

Provides a conversational interface that can...

- Take a simple description of an ontology and create it
- Turn natural language questions into complex graph queries including with aggregations, comparisons, etc.
- Provide context for its decisions and debug its own queries as needed

Demo: Ontology Creation



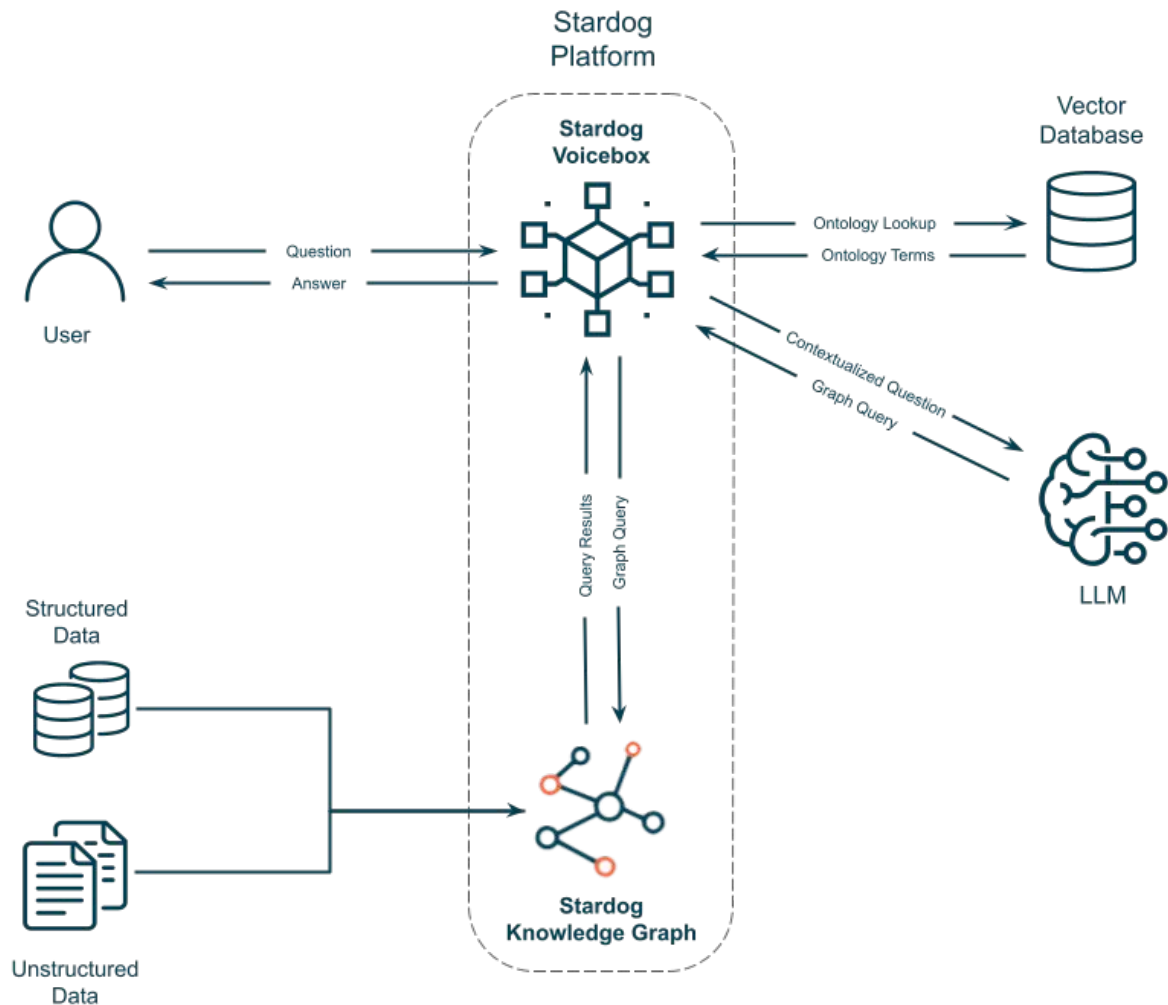
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Demo: Question Answering



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Voicebox Architecture



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Voicebox Building Blocks

- Open-source foundational LLM
 - MPT-30B trained by MosaicML/Databricks
- Fine-tuning with SPARQL queries
 - ~10K question/query pairs created internally
 - ~10K question/query pairs adopted from text2sql benchmarks in academia
- Vector embeddings and vector search
 - Powered by the MiniLM-L6-v2 language model

Summary

- Voicebox allows anyone to query a Knowledge Graph using natural language
- All the answers are computed over the Knowledge Graph
 - Retrieve most recent, proprietary data
 - Complete traceability of answers to data sources
 - Access control rules applied to every query
- Logical reasoning leveraged to answer LLM-generated queries allowing





Want to Try STARDOG VOICEBOX?

Register for our Early Access Program:
info.stardog.com/voicebox/early-access-registration