Franz Unveils AllegroGraph 8.0, the First Neuro-Symbolic AI Platform Merging Knowledge Graphs, Generative AI and Vector Storage

AllegroGraph 8.0 Validates Generative AI Content, Unveils Hidden Knowledge within Documents and Powers Natural Language Queries

Lafayette, Calif., December 11, 2023 – Franz Inc., an early innovator in Artificial Intelligence (AI) and leading supplier of Graph Database technology for Entity-Event Knowledge Graph Solutions, today announced AllegroGraph 8.0, a groundbreaking Neuro-Symbolic AI Platform that incorporates Large Language Model (LLM) components directly into SPARQL along with vector generation and vector storage for a comprehensive AI Knowledge Graph solution. AllegroGraph 8.0 redefines how Knowledge Graphs are created and expands the boundaries of what AI can achieve within the most secure triplestore database on the market.

"While general-purpose LLMs excel at straightforward tasks that do not necessitate background or changing knowledge, addressing more complex, knowledge-intensive queries demands the capabilities provided with a Knowledge Graph to avoid generating 'hallucinations,'" said Dr. Jans Aasman, CEO of Franz Inc. "We designed AllegroGraph 8.0 with Retrieval Augmented Generation (RAG) capabilities to provide users with seamless Generative AI capabilities within a Knowledge Graph platform, while dynamically fact-checking LLM outputs to ensure that they are grounded in fact-based knowledge."

Leading analyst firms recognize the compelling synergy between Knowledge Graphs and LLMs. "Data and analytics leaders must leverage the power of large language models (LLMs) with the robustness of knowledge graphs for fault-tolerant AI applications," advises Gartner in a June 9, 2023 report titled: *AI Design Patterns for Knowledge Graphs and Generative AI*.

"Knowledge graphs provide the perfect complement to LLM-based solutions where high thresholds of accuracy and correctness need to be attained," said Radu Miclaus, Senior Director, Gartner. (*Source: Gartner Report, AI Design Patterns for Knowledge Graphs and Generative AI, June 9, 2023*)

As the first Neuro-Symbolic AI Platform, AllegroGraph 8.0 combines Machine Learning (statistical AI) with knowledge and reasoning (symbolic AI) capabilities. This powerful combination enables AllegroGraph to solve complex problems that require reasoning and learn efficiently with less data, thereby expanding applicability across a broad array of tasks. The blending of machine learning and reasoning in AllegroGraph 8.0 also produces decisions that are understandable to humans and explainable, an important step in the progression of AI.

The advancements in AllegroGraph 8.0 encompass the following transformative capabilities and enhancements.

Retrieval Augmented Generation (RAG) for LLMs — AllegroGraph 8.0 guides Generative AI content through RAG, feeding LLMs with the 'source of truth.' This innovative approach helps avoid 'hallucinations' by grounding the output in fact-based knowledge. As a result, organizations can confidently apply these insights to critical decision-making processes, secure in the knowledge that the information is both reliable and trustworthy.

Natural Language Queries and Reasoning — The new LLMagic functions within AllegroGraph 8.0 serve as the bridge between

human language and machine understanding, offering a dynamic natural language interface for both querying and reasoning processes. Users can now engage with AllegroGraph 8.0 in a manner that closely mirrors human conversation, making AI capabilities accessible to a broader set of users and increasing productivity for current users.

Enterprise Document Deep-insight — New VectorStore capabilities within AllegroGraph 8.0 offer a seamless bridge between enterprise documents and Knowledge Graphs. This unique feature empowers users to access a wealth of knowledge hidden within documents, allowing users to query content that was previously considered 'dark data.' Users gain a comprehensive view of enterprise data, contributing to the business's deeper insights from its proprietary data. One unique feature of AllegroGraph's vector store implementation is that it lives under the same security framework that we apply to the graphs. AllegroGraph's 'triple-attributes' mechanism puts security 'in' the data elements itself. AllegroGraph offers the ability to annotate individual triples or text fragments and thus provides the most granular access method of any Graph-Vector platform.

AI Symbolic Rule Generation — AllegroGraph offers built-in rule-based system capabilities tailored for symbolic reasoning. This unique feature distills complex data into actionable, interpretable rules. AI symbolic rule generation enables predictions or classifications based on data and provides transparent explanations for their decisions by expressing them in symbolic rules, enhancing trust and interpretability in AI systems.

Streamlined Ontology and Taxonomy Creation — LLMagic can streamline the complex and often labor-intensive task of crafting ontologies and taxonomies for any topic. By analyzing diverse data, and identifying patterns, relationships, and semantic connections that underpin the subject matter, LLMagic can quickly generate structured hierarchies and

classifications that form the foundation of ontologies and taxonomies. Users can more quickly create ontologies and taxonomies with a reduced need for manual intervention, accelerating the knowledge organization process and enhancing the quality and comprehensiveness of the created structures.

Knowledge Graph-as-a-Service – A new hosted, free version grants users access to the power of AllegroGraph 8.0 with LLMagic via a convenient web login – https://allegrograph.cloud

New Web Interface – AllegroGraph 8.0 includes a striking redesign of its web interface – AGWebView. This fresh look and feel provides users an enhanced and intuitive way to interact with the platform, while co-existing in parallel with the Classic View.

Enhanced Scalability and Performance – AllegroGraph 8.0 includes enhanced FedShard™ capabilities making the management of sharding more straightforward and user-friendly while reducing query response time and improving overall system performance.

Advanced Knowledge Graph Visualization – A new version of Franz's industry-leading graph visualization software, Gruff v9, is integrated into AllegroGraph 8.0. Gruff v9 is the only graph visualization tool that illustrates RDF-Star (RDF*) annotations, enabling users to add descriptions to edges in a graph – such as scores, weights, temporal aspects and provenance.

AllegroGraph 8.0 Availability

AllegroGraph 8.0 is immediately available directly from Franz Inc. For more information, visit AllegroGraph.com for cloud and download options.

AI and Knowledge Graph Leadership

Franz secured numerous prestigious awards in 2023, solidifying the company's position as a leader in the field of intelligent knowledge management and data. Bloor Research positioned AllegroGraph as a Champion in their 2023 GraphDB Market Report. AllegroGraph won the sought-after 2023 KM World Readers' Choice Award for Best Knowledge Graphs, and Database Trends and Applications placed Franz on its prestigious list of 100 Companies That Matter Most in Data.

Conference Presentations

The Knowledge Graph Keynote will be delivered by Jans Aasman, CEO, Franz Inc. at the Data (+AI) Day on January 27, 2024. Presentation Title – "**Beyond Human Oversight: The Rise of Self-Building Knowledge Graphs in AI**" – https://datadaytexas.com/2024/sessions#aasman

Dr. Aasman will be presenting "**Using Knowledge Graphs and LLMs for Deep Entity Exploration**" on March 27, 2024 at Enterprise Data World 2024 – https://edw2024.dataversity.net/index.cfm

About Franz, Inc.

Franz Inc. is an early innovator in Artificial Intelligence (AI) and a leading supplier of Graph Database technology with expert knowledge in developing and deploying Knowledge Graph solutions in combination with LLMs.

Franz's Neuro-Symbolic AI platform, AllegroGraph, guides Generative AI content through RAG, feeding LLMs with the 'source of truth.' This innovative approach helps avoid 'hallucinations' by grounding the output in fact-based knowledge. As a result, organizations can confidently apply these insights to critical decision-making processes, secure in the knowledge that the information is both reliable and trustworthy.

AllegroGraph provides organizations with essential Knowledge

Graph capabilities, including Large Language Models (LLMs), Graph Neural Networks (GNNs), Graph Virtualization, GraphQL, Apache Spark graph analytics, and Kafka streaming graph pipelines. These capabilities exemplify AllegroGraph's leadership in empowering data analytics professionals to derive business value from Knowledge Graphs.

AllegroGraph is utilized by dozens of the top Fortune 500 companies worldwide.