Franz's AllegroGraph 7.2 Powers Enterprise Data Fabrics with Graph Neural Networks, Virtual Graphs and Streaming Graph Pipelines

Organizations Gain 'Next Level AI' by Merging Knowledge Graphs with Graph Neural Networks

Lafayette, Calif., October 25, 2021 — 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 7.2, which provides organizations with essential Data Fabric tools, including Graph Neural Networks, Graph Virtualization, Apache Spark graph analytics, and streaming graph pipelines. These new capabilities exemplify AllegroGraph's leadership in empowering data analytics professionals to derive business value out of Knowledge Graphs.

"The ability to create Graph Neural Networks within the AllegroGraph platform opens up the next level of AI to data analytics professionals with the ability to produce the best prescriptive outcomes," said Dr. Jans Aasman, CEO of Franz Inc. "GNNs are ideal for applying machine learning's advanced pattern recognition to high-dimensional, non-Euclidian datasets that are too complex for other machine learning types. Organizations get two forms of reasoning in one framework by fusing GNN reasoning capabilities around relationship predictions, entity classifications, and graph clustering, with classic semantic inferencing available in AllegroGraph Knowledge Graphs. Automatically mixing and matching these two types of reasoning is next level AI and is

the basis for predicting the best prescriptive outcome for any business event based on context at scale."

Graph Neural Networks

With AllegroGraph 7.2, users can create Graph Neural Networks (GNNs) and take advantage of a mature AI approach for Knowledge Graph enrichment via text processing for news classification, question and answer, search result organization, event prediction, and more. GNNs created in AllegroGraph enhance neural network methods by processing the graph data through rounds of message passing, as such, the nodes know more about their own features as well as neighbor nodes. This creates an even more accurate representation of the entire graph network. AllegroGraph GNNs advance text classification and relationship extraction for enhancing enterprise-wide Data Fabrics.

Gartner defines Data Fabric as a design concept that serves as an integrated layer (fabric) of data and connecting processes. "The emerging design concept called "data fabric" can be a robust solution to ever-present data management challenges, such as the high-cost and low-value data integration cycles, frequent maintenance of earlier integrations, the rising demand for real-time and event-driven data sharing and more," said Mark Beyer, Distinguished VP Analyst at Gartner. *(Source: Gartner, Data Fabric Architecture is Key to Modernizing Data Management and Integration, May 11, 2021)*

Graph Virtualization

"Enterprises have mounds of data spread over many types of data sources — from relational and NoSQL databases to CRM systems, cloud services, email and file-sharing apps," said Dr. Aasman. "But if organizations want to maximize the business value of their enterprise data, *all* the data needs to be accessible to Knowledge Graphs and connected to the Data Fabric. The new virtual graph capabilities in AllegroGraph

showcase our commitment to continue to provide robust Knowledge Graphs solutions that power the enterprise Data Fabric."

AllegroGraph 7.2 allows users to easily virtualize data as part of their AllegroGraph Knowledge Graph solution. When graphs are virtual, the data remains in the source system and is easily linked and queried with other data stored directly in AllegroGraph.

Any data source with a supported JDBC driver can be integrated into an AllegroGraph Knowledge Graph, including Databases (i.e. Apache Cassandra, AWS Athena, Microsoft SQL Server, MongoDB, MySQL, Oracle Database); BI Tools (i.e. IBM Cognos, Microsoft PowerBI, RapidMiner, Tableau); CRM Systems (i.e. Dynamics CRM, Netsuite, Salesforce, SugarCRM); Cloud Services (i.e. Active Directory, AWS Management, Facebook, Marketo, Microsoft Teams, SAP, ServiceNow) and Shared Data Files (i.e. Box, Gmail, Google Drive, Office365).

Streaming Graph Pipelines using Kafka

Enterprises that need real-time experiences are starting to adopt streaming pipelines to provide insights that adapt to new data in real-time rather than processing data in batches. AllegroGraph is often used as an Entity Event Knowledge Graph platform in diverse settings such as call centers, hospitals, insurance companies, aviation organizations and financial firms.

AllegroGraph 7.2 can be used seamlessly with Apache Kafka, an open-source distributed event streaming platform for high-performance data pipelines, streaming analytics, data integration and mission-critical applications. By coupling AllegroGraph with Apache Kafka, users can create a real-time decision engine that produces real-time event streams based on computations that trigger specific actions. AllegroGraph accepts incoming events, executes instant queries and

analytics on the new data and then stores events and results.

Graph Analytics with Apache Spark

AllegroGraph 7.2 enables users to export data out of the Knowledge Graph and then perform graph analytics with Apache Spark, one of the most popular platforms for large-scale data processing. Users immediately gain machine learning and SQL database solutions as well as GraphX and GraphFrames, two frameworks for running graph compute operations on data.

A key benefit of using Apache Spark for graph analytics within AllegroGraph is that it is built on top of Hadoop MapReduce and extends the MapReduce model to efficiently use more types of computations. Users can access interfaces (including interactive shells) for programming entire clusters with implicit data parallelism and fault-tolerance.

Availability of AllegroGraph 7.2

AllegroGraph 7.2 is immediately available directly from Franz Inc. For more information, visit the AllegroGraph Quick Start page for cloud and download options.

AllegroGraph in Use

"We tried to modernize our product tracking system with 3rd party software solutions and in-house relational database applications, but without success because relational databases lack the ability to model complex relationships," said Mel Yuson, Director Enterprise Architecture, Essilor AMERA, a multinational ophthalmic optics company and the world leader in the design, manufacture and distribution of lenses to correct or protect eyesight. "We needed the freedom of a schemaless graph database, like Franz's AllegroGraph, which uniquely provides us the flexibility to evolve our data model and seamlessly add new applications to address rapid growth and changing needs at Essilor.

"We developed and deployed to production our first AllegroGraph based application in only a few months after engaging Franz," added Yuson. "We found AllegroGraph's W3C standard SPARQL query language is much easier to use than SQL but most importantly, AllegroGraph is a very stable and highly scalable platform with its Multi-Master Replication cluster feature. Today, we deploy several AllegroGraph servers in the cloud, which easily handle 100,000 concurrent queries per minute at peak hours."

"AllegroGraph's support of Entity-Event Data Modeling is the most welcome innovation and addition to our arsenal in reimagining healthcare and implementing Precision Medicine," said Dr. Parsa Mirhaji, Director of Center for Health Data Innovations at the Albert Einstein College of Medicine and Montefiore Health System, NY. "Precision Medicine is about moving away from statistical averages and broad-based patterns. It is about connecting many dots, from different contexts and throughout time, to support precision diagnosis and to recommend the precision care that can take into account all the subtle differences and nuisances of individuals and their personal experiences throughout their life. This technology is about saving lives, by leveraging data, context and analytics and is what Franz's Entity-Event Data Modeling brings to the table."

AllegroGraph Awards

In September 2021, AllegroGraph was recognized by KMWorld as a Trend Setting Product for 2021. This annual award acknowledges leaders in AI, natural language processing, machine learning, knowledge graphs, blockchain, and low- and no-code development, industry topics which are shaping the capabilities of products and services for 2021 and beyond.

Franz Inc. was also selected as one of the Big Data 50: Companies Driving Innovation. This Database Trends and Applications (DBTA) award is given to companies delivering

data-driven insights by expanding what is possible in terms of collecting, storing, and extracting value from data.

KM World Connect

Dr. Jans Aasman, CEO, Franz Inc., will be presenting a talk at KM World Connect titled, Graph Neural Networks for Text Classification and Relation Extraction on November 17, 2021 at 9:00am ET. You can Register for the Conference here.

About Franz Inc.

Franz Inc. is an early innovator in Artificial Intelligence (AI) and leading supplier of Graph Database technology with expert knowledge in developing and deploying Knowledge Graph solutions. The foundation for Knowledge Graphs and AI lies in the facets of semantic technology provided by AllegroGraph and Allegro CL. AllegroGraph is a graph based platform that enables businesses to extract sophisticated decision insights and predictive analytics from highly complex, distributed data that cannot be uncovered with conventional databases. Unlike traditional relational databases or other NoSQL databases, AllegroGraph employs semantic graph technologies that process data with contextual and conceptual intelligence. AllegroGraph is able to run queries of unprecedented complexity to support predictive analytics that help organizations make more informed, real-time decisions. AllegroGraph is utilized by dozens of the top Fortune 500 companies worldwide.