

AllegroGraph named to 2019 Trend-Setting Products

Database Trends and Applications – December 2018

You can call it the new oil, or even the new electricity, but however it is described, it's clear that data is now recognized as an essential fuel flowing through organizations and enabling never before seen opportunities. However, data cannot simply be collected; it must be handled with care in order to fulfill the promise of faster, smarter decision making.

More than ever, it is critical to have the right tools for the job. Leading IT vendors are coming forward to help customers address the data-driven possibilities by improving self-service access, real-time insights, governance and security, collaboration, high availability, and more.

To help showcase these innovative products and services each year, Database Trends and Applications magazine looks for offerings that promise to help organizations derive greater benefit from their data, make decisions faster, and work smarter and more securely.

This year our list includes newer approaches leveraging artificial intelligence, machine learning, and automation as well as products in more established categories such as relational and NoSQL database management, MultiValue, performance management, analytics, and data governance.

[Read the AllegroGraph Spotlight](#)

Knowledge Graphs – The path to true AI

Published in SD Times – December, 2018



Knowledge is the foundation of intelligence– whether artificial intelligence or conventional human intellect. The understanding implicit in intelligence, its application towards business problems or personal ones, requires knowledge of these problems (and potential solutions) to effectively overcome them.

The knowledge underpinning AI has traditionally come from two distinct methods: statistical reasoning, or machine learning, and symbolic reasoning based on rules and logic. The former approach learns by correlating inputs with outputs for increasingly progressive pattern identification; the latter approach uses expert, human-crafted rules to apply to particular real-world domains.

Read the full article at SD Times.

What is the most interesting use of a graph database you ever seen? PWC responds.

From a Quora post by Alan Morrison – Sr. Research Fellow at PricewaterhouseCoopers – November 2018

The most interesting use is the most powerful: standard RDF graphs for large-scale knowledge graph integration.

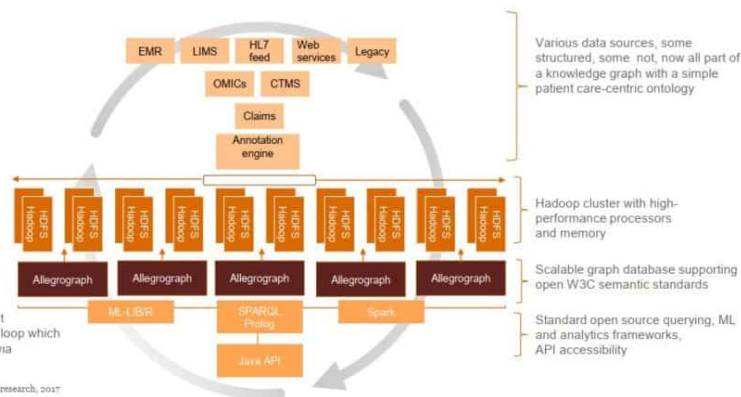
*From my notes on a talk Parsa Mirhaji of Montefiore Health System gave in 2017. **Montefiore uses Franz AllegroGraph, a distributed RDF graph database.** He modeled a core patient-centric hospital knowledge need using a simple standard ontology with a 1,000 or so concepts total.*

That model integrated data from lots of different kinds of heterogeneous sources so that doctors could query the knowledge graph from tablets or phones at a patient's bedside and get contextualized, patient-specific answers to questions for diagnostic purposes.

Fast forward to 2018, and nine out of ten of the most value-creating companies in the world are using standard knowledge graphs in a comparable fashion, either as a base for multi-domain intelligent assistants a la Siri or Alibot or Alexa, or to integrate and contextualize business domains cross-enterprise, or both. The method is preparatory to what John Launchbury of DARPA described as the Third Wave of AI.....

Montefiore's semantic data lake

Doctors can query the graph or harness ML + analytics and receive answers from the system at the point of care via their handhelds.



PwC | Collapsing the IT stack

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Read the full article over at Quora

2019 Trends in Data Governance: The Model Governance Question

From an AI Business Article by Jelani Harper – November 2018

The propagation of the enterprise's ability to capitalize on data-driven processes—to effectively reap data's yield as an organizational asset, much like any other—hinges on data governance, which arguably underpins the foundation of data management itself.

There are numerous trends impacting that foundation, many of which have always had, and will continue to have, relevance as 2019 looms. Questions of regulatory compliance, data

lineage, metadata management, and even data governance will all play crucial roles.

Franz's CEO, Dr. Jans Aasman was quoted:

Still, as Aasman denoted, "It's extremely complicated to make fair [machine learning] models with all the context around them." Both rules and human supervision of models can furnish a fair amount of context for them, serving as starting points for their consistent governance.

Read the full article at [AI Business](#).

AI Requires More Than Machine Learning

From Forbes Technology Council – October 2018

This article discusses the facets of machine learning and AI:

Lauded primarily for its automation and decision support, machine learning is undoubtedly a vital component of artificial intelligence. However, a small but growing number of thought leaders throughout the industry are acknowledging that the breadth of AI's upper cognitive capabilities involves more than just machine learning.

Machine learning is all about sophisticated pattern recognition. It's virtually unsurpassable at determining relevant, predictive outputs from a series of data-driven inputs. Nevertheless, there is a plethora of everyday, practical business problems that cannot be solved with input/output reasoning alone. The problems also require the

multistep, symbolic reasoning of rules-based systems.

Whereas machine learning is rooted in a statistical approach, symbolic reasoning is predicated on the symbolic representation of a problem usually rooted in a knowledge base. Most rules-based systems involve multistep reasoning, including those powered by coding languages such as Prolog.

Read the full article over at Forbes

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Franz and Semantic Web Co. Partner to Create a Noam Chomsky Knowledge Graph

Press Release – September 10, 2018

First Semantic Knowledge Graph for a Public Figure will Semantically Link Books, Interviews, Movies, TV Programs and Writings from the Most Cited U.S. Scholar

OAKLAND, Calif. and VIENNA, Austria – Franz Inc., an early innovator in Artificial Intelligence (AI) and leading supplier of Semantic Graph Database technology, AllegroGraph, for Knowledge Graphs, and Semantic Web Company, developers of the PoolParty Semantic Suite and leading provider of Semantic AI solutions, today announced a partnership to develop the Noam Chomsky Knowledge Graph. This project is the first aimed at

connecting all the works from a public figure and turning the linked information into a searchable and retrievable resource for the public.

The Noam Chomsky Knowledge Graph project will organize and semantically link the vast knowledge domain surrounding Noam Chomsky, the founder of modern linguistics, a founder of cognitive science, and a major figure in analytic philosophy as well as an American linguist, philosopher, historian and social critic. Chomsky is currently an Institute Professor Emeritus at the Massachusetts Institute of Technology (MIT) and laureate professor at the University of Arizona. He has received many awards including Distinguished Scientific Contribution Award of the American Psychological Association, the Kyoto Prize in Basic Sciences, the Helmholtz Medal, the Dorothy Eldridge Peacemaker Award, and the Ben Franklin Medal in Computer and Cognitive Science.

“Noam Chomsky is one of the most brilliant minds of our generation,” said Fred Davis. Executive Director of the Chomsky Knowledge Graph project, “His body of work is tremendously valuable to people across many disciplines. Our goal is to make Chomsky’s work searchable in the context of topics and concepts, readable in excerpts, and easily available to journalists, scientists, technologists, students, philosophers, and historians as well as the general public.”

The Noam Chomsky Knowledge Graph will link to over 1,000 articles and over 100 books that Chomsky has authored about linguistics, mass media, politics and war. Hundreds of Chomsky’s media interviews, which aired on television, print and online will be part of the Knowledge Graph as well as more than a dozen Chomsky movies including: Is the Man who is Tall Happy?, Manufacturing Consent, Programming the Nation? Hijacking Catastrophe: 911 Fear and the Selling of American Empire. The content will be made available by searching the Knowledge Graph for specific titles, related topics and concepts.

Since the project is based on the latest and most advanced technologies, the data will be also available as machine-readable data (Linked Data) in order to be fed into smart applications, intelligent chatbots, and question/ answering machines – as well as other AI and data systems.

The Internet Archive, the world's largest digital lending library, will host Noam Chomsky's books, movies, and other content – enabling public access to his works and marking the first integration between the Internet Archive and a public Knowledge Graph.

"We are thrilled to be working on this momentous project," said Dr. Jans Aasman, CEO of Franz Inc. "Noam Chomsky is the ideal person to fulfill the vision of a Public Figure Knowledge Graph. We are looking forward to collaborating with the Semantic Web Company and Fred Davis on this exciting project."

"Knowledge Graphs are becoming increasingly important for addressing various data management challenges in industries such as financial services, life sciences, healthcare or energy," said Andreas Blumauer, CEO and founder of Semantic Web Company. "The application of Knowledge Graphs to public figures, such as Noam Chomsky, will offer a unique opportunity to link concepts and ideas to form new ideas and possible solutions."

About Knowledge Graphs

A Knowledge Graph represents a knowledge domain and connects things of different types in a systematic way. Knowledge Graphs encode knowledge arranged in a network of nodes and links rather than tables of rows and columns. People and machines can benefit from Knowledge Graphs by dynamically growing a semantic network of facts about things and use it for data integration, knowledge discovery, and in-depth analyses.

Gartner recently identified Knowledge Graphs as a key new technology in both their Hype Cycle for Artificial Intelligence and Hype Cycle for Emerging Technologies. Gartner's Hype Cycle for Artificial Intelligence, 2018 states, "The rising role of content and context for delivering insights with AI technologies, as well as recent knowledge graph offerings for AI applications have pulled knowledge graphs to the surface."

Knowledge Graphs are the Foundation for Artificial Intelligence

The foundation for AI lies in the facets Knowledge Graphs and semantic technology provided by Franz and Semantic Web Company. The Franz AllegroGraph Semantic Graph database provides the core technology environment to enrich and contextualized the understanding of data. The ability to rapidly integrate new knowledge is the crux of the Knowledge Graph and depends entirely on semantic technologies.

About Franz Inc.

Franz Inc. is an early innovator in Artificial Intelligence (AI) and leading supplier of Semantic 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. The ability to rapidly integrate new knowledge is the crux of the Knowledge Graph and Franz Inc. provides the key technologies and services to address your complex challenges. Franz Inc. is your Knowledge Graph technology partner. For more information, visit www.franz.com.

About Semantic Web Company

Semantic Web Company is the leading provider of graph-based metadata, search and analytic solutions. The company is the vendor of PoolParty Semantic Suite, one of the most renowned semantic software platforms on the global market. Among many

other customers, The World Bank, AT&T, Deutsche Telekom, and Pearson benefit from linking structured and unstructured data. In 2018, the Semantic Web Company has been named to KMWorld's "100 companies that matter in Knowledge Management." For more information about PoolParty Semantic Suite, please visit <https://ww.poolparty.biz>

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Gartner – Knowledge Graphs Emerge in the HypeCycle

From Gartner – August 2018

Gartner Identifies Five Emerging Technology Trends That Will Blur the Lines Between Human and Machine

Gartner's HypeCycle report is now acknowledging Knowledge Graphs, a market area that Franz has been leading with AllegroGraph.

Read Jans Aasman's IEEE paper on the Enterprise Knowledge Graph for more insight.

From the Gartner Press release:

Digitalized Ecosystems

Emerging technologies require revolutionizing the enabling foundations that provide the volume of data needed, advanced

compute power and ubiquity-enabling ecosystems. The shift from compartmentalized technical infrastructure to ecosystem-enabling platforms is laying the foundations for entirely new business models that are forming the bridge between humans and technology.

*This trend is enabled by the following technologies: Blockchain, Blockchain for Data Security, Digital Twin, IoT Platform and **Knowledge Graphs**.*

“Digitalized ecosystem technologies are making their way to the Hype Cycle fast,” said Walker. “Blockchain and IoT platforms have crossed the peak by now, and we believe that they will reach maturity in the next five to 10 years, with digital twins and knowledge graphs on their heels.”

Read the full article over at Gartner.

Venture Beat Features Montefiore’s Healthcare project with AllegroGraph

From VentureBeat August 2018

This article discusses Montefiore’s PALM project that uses AllegroGraph:

Montefiore is one of the largest employers in New York State. It’s also one of the busiest health care complexes – hundreds of thousands of patients pass through its sprawling campuses,

which include Montefiore Medical Center, the Albert Einstein College of Medicine, and Montefiore Medical Park.

Those logistical challenges catalyzed the development of Montefiore's Patient-centered Analytical Learning Machine (PALM), a machine learning platform built from the ground up to predict and prevent life-threatening medical conditions and minimize wait times.

PALM juggles lots of datasets – electronic medical records, insurance billing codes, drug databases, and clinical trial results, to name a few. And its analytical models recently expanded to handle voice, images, and sensor inputs from internet of things devices.

Core to the semantic graph model are triplestores, which are a type of database optimized for filing away and retrieving triples. They're an entity composed of subject-predicate-object – "John has tuberculosis," for example – which PALM builds dynamically, as needed. Along the way, the system uses a frame data language, or FDL, to resolve ambiguities, like when some electronic records refer to medication by its brand instead of by its scientific name (e.g., "Advil" or "Motrin" instead of ibuprofen).

Read the full article over at [Venture Beat](#).

Transmuting Machine Learning

into Verifiable Knowledge

From AI Business – August 2018

This article covers machine learning and AI:

According to Franz CEO Jans Aasman, these machine learning deployments not only maximize organizational investments in them by driving business value, but also optimize the most prominent aspects of the data systems supporting them.

“You start with the raw data...do analytics on it, get interesting results, then you put the results of the machine learning back in the database, and suddenly you have a far more powerful database,” Aasman said.

Dr. Aasman is further quoted:

For internal applications, organizations can use machine learning concepts (such as co-occurrence—how often defined concepts occur together) alongside other analytics to monitor employee behavior, efficiency, and success with customers or certain types of customers. Aasman mentioned a project management use case for a consultancy company in which these analytics were used to “compute for every person, or every combination of persons, whether or not the project was successful: meaning, done on time to the satisfaction of the customer.”

Organizations can use whichever metrics are relevant for their businesses to qualify success. This approach is useful for determining a numerical rating for employees “and you could put that rating back in the database,” Aasman said. “Now you can do a follow up query where you say how much money did I make on the top 10 successful people; how much money did I lose on the top 10 people I don’t make a profit on.”

Read the full article over at AI Business.

Using AI and Semantic Data Lakes in Healthcare – FeibusTech Research Report



Artificial intelligence has the potential to make huge improvements in just about every aspect of healthcare. Learn how Montefiore Health Systems is using semantic data lakes, architectures, and triplestores to power AI patient-centered learning. With origins in post-9/11 municipal emergency projects, Montefiore Health Systems platform – called PALM, short for patient-centered Analytical Learning Machine – is beginning to prove itself out in the Intensive Care Unit, helping doctors save lives by flagging patients headed toward respiratory failure.

Intel and Montefiore in collaboration with FeibusTech have released a Research Brief covering Montefiore's PALM Platform (aka – The Semantic Data Lake) powered by AllegroGraph.

“Just atop all the databases is what's known as a triplestore, or triple, construct. That's a key piece of any semantic data architecture. A triple is a three-

part data series with a common grammar structure: that is, subject-predicate-object. Like, for example, John Smith has hives. Or Jill Martin takes ibuprofen."

"Triples are the heart and soul of graph databases, or graphs, a powerful, labor-saving approach that associates John and Jill to records of humans, hives to definitions of maladies and Ibuprofen to catalogues of drugs. And then it builds databases on the fly for the task at hand based on those associations."

Read the full article on Intel's website to learn more about healthcare solutions based on AllegroGraph.