

# Montefiore Semantic Data Lake Tackles Predictive Analytics

Montefiore Medical Center is preparing to launch a sophisticated predictive analytics program for crisis patients, which is rooted in its real-time semantic data lake technology.

Semantic computing is becoming a hot topic in the healthcare industry as the first wave of big data analytics leaders looks to move beyond the basics of population health management, predictive analytics, and risk stratification.

This new approach to analytics eschews the rigid, limited capabilities of the traditional relational database and instead focuses on creating a fluid pool of standardized data elements that can be mixed and matched on the fly to answer a large number of unique queries.

Montefiore Medical Center, in partnership with Franz Inc., is among the first healthcare organizations to invest in a robust semantic data lake as the foundation for advanced clinical decision support and predictive analytics capabilities.

Read the full article at [Health IT Analytics](#)

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**Making Big Data More  
Meaningful through Data**

# Visualization

We've all heard the saying, "a picture says a thousand words." With today's millisecond attention spans, communicating a complex topic to any audience – business professional, consumer, doctor, investor, policy-maker, voter – has become more challenging than ever. Some industries are now taking this seriously and investing in new data visualization techniques.

Data visualization is a fundamental part of scientific research. In a scientific journal, pictures certainly do seem to be worth a thousand words, with graphs translating large amounts of data into insightful, visual representations.

Read the full article at [insideBIGDATA](#)

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## **Semantic Big Data Lakes Can Support Better Population Health**

From HealthIT Analytics –

As healthcare providers navigate the treacherous transitional waters of Stage 2 and try to predict how future regulations will shape their actions, the need to lay the groundwork for advanced population health management and accountable care is only becoming clearer.

No matter what the outcome of debates about the future course of the EHR Incentive Programs, one thing remains abundantly clear for organizations of all shapes and sizes: advancements

in healthcare big data analytics will not be driven solely by rules and mandates, but by the pressing financial need to collect, corral, understand, and leverage information in order to refine and expand population health management techniques.

Developing the underlying architecture for value-based reimbursement, namely a strong framework for population health management, data governance, and big data analytics, is becoming a top priority for a growing number of providers looking to get a head start on the new realities of healthcare reform.

These organizations, like Montefiore Medical Center, are looking for cutting edge analytics tools which won't just help them meet the clinical and financial stresses of today's environment, but will also prepare them for the uncertain paths ahead.

[Read the Full Article](#)

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## **Making sense of big data: Data projects spur progress**

From Managed Healthcare Executive:

The Montefiore Medical Center in Bronx, New York, has partnered with Franz, Inc., Intel, Cloudera, and Cisco to transform statistical databases, such as spreadsheets, into interactive graph databases that can be used to make better informed and predictive healthcare decisions.

Aasman "If you are in a hospital and have millions of patients, you will need to do analytics in many ways—for more

personalized medicine, for predictive modeling, and for better business intelligence,” says Jans Aasman, PhD, CEO of Franz, Inc., which specializes in semantic web technologies. “This system allows you to get all the data together from these different silos for analytics.”

Semantic data lakes (SDLs) enable healthcare providers to use multiple types of data sets congruently to get a more comprehensive picture of population health trends, says Parsa Mirhaji MD, PhD, associate professor of Systems and Computational Biology and director of Clinical Research Informatics at the Albert Einstein College of Medicine and Montefiore Medical Center-Institute for Clinical Translational Research.

Read the full article.

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## **Enterprise Data Modeling Made Easy**

From Analytics Week:

Enterprise data modeling has remained an arduous, time-consuming task for myriad reasons, not the least of which is the different levels of modeling required across an organization’s various business domains.

Data modelers have to consider conceptual, logical and physical models, in addition to those for individual databases, applications, and a variety of environments such as production and post-production. Oftentimes, the need to integrate new sources or to adapt to changing business or technology requirements exacerbates this process, causing

numerous aspects of it to essentially begin all over again.

Enterprise data modeling is rendered much more simply with the incorporation of semantic technologies—particularly when compared to traditional relational ones. Nearly all of the foregoing modeling layers are simplified into an evolving semantic model that utilizes a standards-based approach to harmonize modeling concerns across an organization, its domains, and data environments.

Moreover, the semantic approach incorporates visual aspects that allows modelers to discern relationships between objects and readily identify them with a degree of precision that would require long periods of time with relational technologies.

“Semantics are designed for sharing data,” *Franz* CEO Jans Aasman reflected. “Semantic data flows into how people think.”

Read the full article:

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## **Semantic Graph Analytics Can Propel The Advent of ‘Personalized Medicine’**

From Health IT Outcomes:

Analyzing massive stores of medical data can be overwhelming. Still, it’s an important mission: data analysis could provide new, more tailored treatments. Terms like “personalized medicine,” “precision medicine,” and “individualized medicine” all refer to a data-driven approach toward to goal of customizing medical treatment for every patient’s unique

genetic and molecular composition. However noble, that goal is somewhat limited.

***Personalized medicine***, often described as a way to provide “the right patient with the right drug at the right dose at the right time,” in fact goes beyond custom treatment – it encompasses the entire healthcare process, from prevention, to treatment, to disease management, and considers each patient as an individual.

Read the full article:

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# **Franz Inc. and The Wroclaw Institute of Spatial Information and Artificial Intelligence (The Wroclaw Institute) team up to deliver graph and A.I. solutions in Poland**

*A Wroclaw Institute News Release*

**OAKLAND, Calif. – March 15, 2016** – We are pleased to inform that Wroclaw Institute has been appointed as a partner by Franz Inc.– world’s leading producer of semantic graph technologies. The agreement grants to Wroclaw Institute exclusive right to sell Franz’s – AllegroGraph family of products for territory of Poland. AllegroGraph is best in

class graph database, fully supporting W3C standards adopted by start-up's as well as vast number of Fortune 100 companies. AllegroGraph is a part of Big Data ecosystem as it could be integrated with Apache Hadoop and Amazon EC2.

The Wroclaw Institute CEO – Dr. Adam Iwaniak said “Partnership with Franz Inc. is a turning point for our company as semantic graph technology is gaining a lot of market attention in ‘data tsunami’ era. We are happy that we will be able to provide our customers with award winning solution to help them manage their complex data resources. Moreover I’d like to emphasize that as a company we made a big progress in leveraging RDF graphs technologies also on our basic market – geoinformatics”.

“We are excited about the opportunity to work with Dr. Iwaniak and the Wroclaw Institute team to demonstrate why Graph Databases deliver new, real time decision making capabilities for the Enterprise.” said Dr. Jans Aasman, CEO, Franz Inc., “Organizations across Poland will benefit from AllegroGraph’s ability to link highly complex data, generating new knowledge and insight for a significant competitive advantage.”

AllegroGraph is a database technology that enables businesses to extract sophisticated decision insights and predictive analytics from their highly complex, distributed data that can’t be answered with conventional databases. Unlike traditional relational databases, Franz’s product AllegroGraph employs a combination of semantic, graph and spatial technologies that process data with contextual and conceptual intelligence. AllegroGraph is able to run queries of unprecedented complexity to support predictive analytics that help companies make better, real-time decisions.

AllegroGraph is commonly used in defense and intelligence, banking, and insurance, pharmaceutical, and healthcare, Linked Data publishing, as well as by organization dealing with complex, constantly changing knowledge bases.

## **About Franz Inc.**

Franz Inc. is a leading vendor of semantic technology tools featuring AllegroGraph – high-performance, scalable, disk-based graph database, provides the solid storage layer for powerful GeoTemporal Reasoning, Social Network Analytics and Ontology Modeling. Based in Oakland, California, Franz Inc. is an American owned company that delivers leading-edge development products that enable software developers to build flexible, scalable, semantic applications quickly and cost-effectively.

## **About The Wrocław Institute**

The Wrocław Institute of Spatial Information and Artificial Intelligence is Wrocław, Poland based technology company focused on knowledge engineering, data exploration and intelligent GIS providing products, services and solutions based on cutting-edge scientific and technological achievements.

## **Related Links**

- WIZIPISI dystrybutorem oprogramowania AllegroGraph
- Oprogramowanie bazodanowe AllegroGraph dostępne w Polsce
- Wrocław Institute of Spatial Information and Artificial Intelligence

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# Enriching Property Graphs with Relationship

Suppose we are creating a large graph database that contains information about payments between companies. A graph database analyst might start off modeling the payments as shown in Figure 1, which expresses who paid whom. (All graph figures in this article were produced using Gruff, a tool for visualizing graph databases, operating over the AllegroGraph graph database system.)



Figure 1: A Graph of a Payment

This seems straightforward enough. Now suppose that we want to record more information about payments, such as the amount of the payment, the means of payment (direct debit, e-check, wire, etc.), the date and time when the payment occurred, and so forth. A traditional property graph approach places these properties on the edge that connects the payor and payee nodes, as shown in Figure 2.

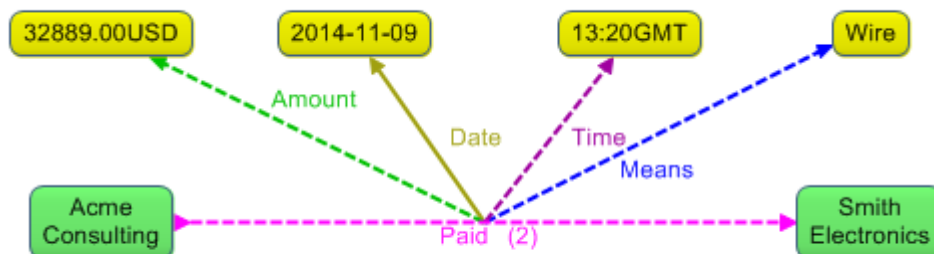


Figure 2: Attaching Properties to an Edge

Read the full blog post at [DB-Engines](#)

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# AllegroGraph Certification on Cloudera Enterprise Creates a Semantic Graph Data Platform for Hadoop

*Leading Accountable Care Organization Gains Sophisticated Decision Insights from Complex, Distributed Big Data Using AllegroGraph and Cloudera Enterprise*

**OAKLAND, Calif. – February 8, 2016** – Franz Inc., an early innovator in Artificial Intelligence (AI) and leading supplier of Semantic Graph Database technology, today announced the availability of AllegroGraph 6, the leading Semantic Graph Database with certification on the latest release of Cloudera Enterprise through the Cloudera Certified Technology Program (CCPT). AllegroGraph is the first Semantic Graph Database to be certified on Cloudera Enterprise, the global provider of the fastest, easiest, and most secure data management and analytics platform built on Apache Hadoop and the latest open source technologies.

The combination of AllegroGraph and Cloudera Enterprise eases the integration of highly complex Big Data, including large public datasets, and enables real-time analytics across distributed data, while leveraging the world's highest performance and most cost effective storage. Enterprises can run queries of unprecedented complexity to enable predictive analytics and real time decision-making within a myriad of industries including Healthcare, Life Sciences, Financial Services, Intelligence/National Security and Publishing. The hardened platform can run mission-critical applications that

require uncompromised data resiliency using features like ACID compliance to ensure data is never lost.

“As the availability of large public datasets continues to rise, many organizations are looking to leverage these datasets to enrich enterprise analytics,” said Tim Stevens, vice president of Business and Corporate Development at Cloudera. “A semantic graph approach to data sets provides a viable method to gleaning additional insights from data.”

“Today’s Big Data challenge is also a Cognitive Computing challenge,” said Dr. Jans Aasman, CEO of Franz Inc. “We need to combine unstructured data with structured data to fuel real-time analysis, predictive analytics and deep learning. But the ease of data integration largely depends on the type of database. With the Semantic flexibility of AllegroGraph, integrating databases is a virtually effortless, since the data can remain in its original databases and database designers do not have to create a schema up front. This capability is particularly valuable if organizations want to tap into the growing number of public datasets to enrich their analytics.”

The powerful combination of AllegroGraph and Cloudera plays a critical role in the Semantic Data Lake for Healthcare, a collaboration between Montefiore Health System (The leading Accountable Care Organization in the U.S), Franz, Cloudera, Cisco and Intel to provide a scalable and extensible Big Data Analytic platform for Healthcare. The SDL for Healthcare is a shared vision between Montefiore Health System and Franz, for constructing longitudinally integrated, semantically enriched, scalable and secured analytics infrastructure necessary for next generation learning healthcare systems, and precision medicine. The SDL deploys Montefiore’s innovative informatics solutions on Franz’s AllegroGraph and Cloudera’s Hadoop distribution, and enables modelers, data scientists and application developers to leverage complex information, biomedical knowledge-bases and ontologies, as

well as the linked open data (LOD) for predictive modeling, care management, population and community health management, health systems research, and clinical and translational research.

“The Semantic Data Lake for Healthcare will help us to connect the dots to better understand the determinants of outcome, cost, and patient satisfaction in a complex ecosystem in which patients and clinicians interact with each other, with the delivery of care system, and with the research enterprise,” said Dr. Parsa Mirhaji MD. PhD., Director of Clinical Research Informatics at Einstein College of Medicine and Montefiore Health System. “The problem is, there are billions of such dots that needs to be connected meaningfully, and reproducibly. The complexity is that there are many different principles, pathways, and theoretical frameworks on how those dots would connect, and we just don’t know which model or framework would yield the best answer. The SDL will enable us to address both the complexity, and scalability concerns efficiently, while maintaining a tight grasp on the semantic integrity and consistency of analysis over large, multi source, ever changing datasets.”

Dr. Mirhaji added, “The SDL embodies Montefiore’s incremental and measured approach towards Cognitive Computing in healthcare. Our ability to conduct real-time analysis over new combinations of data, to compare results across multiple analyses, and to engage patients, practitioners and researchers as equal partners in big-data analytics and decision support will fuel discoveries, significantly improve efficiencies, personalize care and ultimately save lives.”

“Information has always existed everywhere but has often been isolated, incomplete, unavailable or unintelligible,” according to Gartner. “Advances in semantic tools such as graph databases as well as other emerging data classification and information analysis techniques will bring meaning to the often chaotic deluge of information.” (Source: Gartner

Identifies the Top Strategic Technology Trends for 2016.)

AllegroGraph has been widely recognized and endorsed within the industry as the popularity of Graph databases has skyrocketed – growing nearly 500% in the past two years. In 2015 AllegroGraph was named a Leading Database Solution by CIOReview and awarded Best in Semantic Web Technology & Leader in Graph Database Products by Corporate America. This year, PharmaTech Outlook has named Franz a Top Ten Solution Provider.

“Franz has been leading the burgeoning Graph Database revolution with a highly sophisticated, yet elegant Semantic Graph database solution,” said Harvi Sachar, Publisher & Founder, CIOReview. “Franz’s AllegroGraph continues to break new ground in predictive analytics and visual graph discovery capabilities- benefiting organizations around the globe within Healthcare, Intelligence/National Security, Life Sciences and Financial Services.”

## **About AllegroGraph**

Unlike traditional relational databases or Property Graph Databases, AllegroGraph employs semantic graph technologies that process data with contextual and conceptual intelligence. AllegroGraph is able run queries of unprecedented complexity to support predictive analytics that help organizations make more informed, real-time decisions. AllegroGraph is the first Graph Database to support analysis across N-dimensions – any conceivable measurement of an object, property or operation. AllegroGraph can analyze temporal (time) and geospatial (location) dimensions relative to any ‘event,’ such as a disease, drug interaction, genetic combination, biomarkers, observations, image or physical sensors. AllegroGraph is utilized by dozens of the top Fortune 500 companies worldwide.

## 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 complex Big Data analytics solutions. AllegroGraph, Franz's flagship, high-performance, transactional, and scalable Semantic Graph Database, provides the solid storage layer for Enterprise grade NoSQL solutions. AllegroGraph's Activity Recognition capabilities provides a powerful means to aggregate and analyze data about individual and organizational behaviors, preferences, relationships, plus spatial and temporal linkages between individuals and groups. For additional Franz Inc customer success stories please visit:

- AllegroGraph – <http://franz.com/agraph/success/>
- Allegro CL – <http://franz.com/success/>

Franz's Professional Service team is in the business of helping companies turn Data into Information and Information into Knowledge. We combine Data, Business Intelligence, and Analytics consulting services under one roof for our customers. Franz, an American owned company based in Oakland, California, is committed to market-driven product development, the highest levels of product quality and responsive customer support and service. Franz customers include dozens of Fortune 500 companies and span the healthcare, government, life sciences and telecommunications industries worldwide. Franz has demonstrated consistent growth and profitability since inception.

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# **AllegroGraph Recognized as Best in Semantic Web Technology – USA & Leader in Graph Database Products**

*Franz's AllegroGraph Fueling Rapid Growth in Graph Database Category*

**OAKLAND, Calif. – February 3, 2016** – Franz Inc., an early innovator in Artificial Intelligence (AI) and leading supplier of Semantic Graph Database technology has been recognized As “Best in Semantic Web Technology – USA & Leader in Graph Database Products” by Corporate America Software and Technology.

“At Corporate America, it’s our priority to showcase prominent professionals who are excelling in their industry and outperforming their competitors,” said Hannah Stevenson, Managing Group Editor, AI Global Media. “Franz Inc. have a reputation for innovation, utilizing their expert knowledge to create complex and exciting Graph Database solutions. Franz’s unique platforms offer highly scalable technologies for solving complex Big Data challenges.”

Corporate America is the definitive magazine for CEOs, top tier management and key decision makers across the US. Created to inform, influence, and shape the corporate conversation across the nation through high quality editorial, in-depth research and an experienced and dedicated network of advisers, Corporate America provides its readership with the most authoritative and current analysis of the major changes effecting the corporate landscape, and the latest deals and topical issues dominating the corporate universe. A multifaceted program, the awards are focused on rewarding

excellence across all areas of the technology and software industries and all nominees are closely scrutinized to ensure that only the most deserving receive Corporate America's prestigious awards.

"We are excited that Graph Databases, like AllegroGraph, have garnered the attention they deserve by Enterprise customers looking to innovate," said Dr. Jans Aasman, CEO, Franz Inc. "In today's data-driven environments, the ability to quickly analyze data from diverse sources is becoming critical. We are already seeing how Semantic Graph Databases with predictive analytics can help transform healthcare through Precision Medicine and make us safer through Insider Threat Detection."

"Because it (AllegroGraph) is a Graph database, it can store pretty much any kind of data and query it, not just in the time-worn relational fashion, but also in a graphical manner – carving out graphical maps of relationships. And on top of that, it can apply semantics to deduce as-yet-undiscovered knowledge from the data. Its capabilities are very broad, and they provide a glimpse of the shape of things to come," added Bloor. stated Robin Bloor, co-founder and Chief Analyst of The Bloor Group.

"Information has always existed everywhere but has often been isolated, incomplete, unavailable or unintelligible," according to Gartner. "Advances in semantic tools such as graph databases as well as other emerging data classification and information analysis techniques will bring meaning to the often chaotic deluge of information." (Source: Gartner Identifies the Top Strategic Technology Trends for 2016.)

A recent Forrester Research report stated, "Graph databases are a powerful optimized technology that link billions of pieces of connected data to help create new sources of value for customers and increase operational agility for customer service. Because graph databases track connections among entities and offer links to get more detailed information,



they are well-suited for scenarios in which relationships are important, such as cybersecurity, social network analysis, eCommerce recommendations, dependence analysis, and predictive analytics.” (Source: Forrester Research, Market Overview: Graph Databases, May 28, 2015)

Franz’s recent announcement of the first Semantic Data Lake (SDL) for Healthcare, which was created in collaboration with Montefiore Medical Center (the eighth largest hospital group in the U.S.), Intel, Cloudera and Cisco. The SDL for Healthcare is a scalable and extensible Healthcare platform designed for Accountable Care and Personalized Medicine initiatives. AllegroGraph has played a critical role in the Semantic Data Lake for Healthcare, by facilitating integration of complex information for basic science, clinical, population, community, environmental, behavioral and wellness research data to enable knowledge-based analytics, classification, pattern recognition, predictive modeling and simulations at scale.

## **About Corporate America**

Corporate America is more than just a magazine. Alongside our quarterly publication, we also produce a website that is regularly updated with the latest news, features, opinion and comment, again in conjunction with a host of top-level advisers, experts and businesspeople, and throughout the year, you’ll also get your chance to participate in our highly regarded awards programs, designed to pay tribute to the finest firms and individuals on the American business landscape.

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