

What is the Answer to AI Model Risk Management?

Algorithm-XLab – March 2019

Franz CEO Dr. Jans Aasman Explains how to manage AI Modelling Risks.

AI model risk management has moved to the forefront of contemporary concerns for statistical Artificial Intelligence, perhaps even displacing the notion of ethics in this regard because of the immediate, undesirable repercussions of tenuous machine learning and deep learning models.

AI model risk management requires taking steps to ensure that the models used in artificial applications produce results that are unbiased, equitable, and repeatable.



The objective is to ensure that given the same inputs, they produce the same outputs.

If organizations cannot prove how they got the results of AI risk models, or have results that are discriminatory, they are subject to regulatory scrutiny and penalties.

Strict regulations throughout the financial services industry in the United States and Europe require governing, validating, re-validating, and demonstrating the transparency of models for financial products.

There's a growing cry for these standards in other heavily regulated industries such as healthcare, while the

burgeoning Fair, Accountable, Transparent movement typifies the horizontal demand to account for machine learning models' results.

AI model risk management is particularly critical in finance.

Financial organizations must be able to demonstrate how they derived the offering of any financial product or service for specific customers.

When deploying AI risk models for these purposes, they must ensure they can explain (to customers and regulators) the results that determined those offers.

Read the full article at Algorithm-XLab.

The Cornerstone of Data Science: Progressive Data Modeling

From AI Business June 27, 2018

This article covers Single Schema, Universal Taxonomies, Time Series Analysis, Accelerating Data Science and features some thought leadership from Franz Inc.'s CEO, Jans Aasman:

'Contemporary data science and artificial intelligence requirements simply can't wait for this ongoing, dilatory process. According to Jans Aasman, CEO of Franz, they no longer have to. By deploying what Aasman called an "events-based approach to schema", companies can model datasets with any number of differences alongside one another for expedited enterprise value.'

'The resulting schema is simplified, uniform, and useful in multiple ways. "You achieve two goals," Aasman noted. "One is you define what data you trust to be in the main repository to have all the truth. The second thing is you make your data management a little more uniform. By doing those two things your AI and your data science will become better, because the data that goes into them is better."'

Dr. Aasman goes on to note:

'The events-based schema methodology only works with enterprise taxonomies—or at least with taxonomies spanning the different sources included in a specific repository, such as a Master Data Management hub. Taxonomies are necessary so that "the type of event can be specified," Aasman said.'

'Moreover, taxonomies are indispensable for clarifying terms and their meaning across different data formats, which may represent similar concepts in distinct ways. Therefore, practically all objects in a database should be "taxonomy based" Aasman said, because these hierarchical classifications enable organizations to query their repositories via this uniform schema.'

Read the full article over at AI Business.



Optimizing Fraud Management with AI Knowledge Graphs

From Global Banking and Finance Review – July 12, 2018

This article discusses Knowledge Graphs for Anti-Money Laundering (AML), Suspicious Activity Reports (SAR), counterfeiting and social engineering falsities, as well as synthetic, first-party, and card-not-present fraud.

By compiling fraud-related data into an AI knowledge graph, risk management personnel can also triage those alerts for the right action at the right time. They also get the additive benefit of reusing this graph to decrease other risks for security, loans, or additional financial purposes.

Dr. Aasman goes on to note:

By incorporating AI, these threat maps yields a plethora of information for actually preventing fraud. Supervised learning methods can readily identify what events constitute fraud and which don't; many of these involve classic machine learning. Unsupervised learning capabilities are influential in determining normal user behavior then pinpointing anomalies contributing to fraud. Perhaps the most effective way AI underpins risk management knowledge graphs is in predicting the likelihood—and when—a specific fraud instance will take place. Once organizations have data for customers, events, and fraud types over a length of time (which could be in as little as a month in the rapidly evolving financial crimes space), they can compute the co-occurrence between events and fraud types.

Read the full article over at Global Banking and Finance Review.



How AI Boosts Human Expertise at Wolters Kluwer



Wolters Kluwer, a long time AllegroGraph customer, recently spoke with Alex Woodie at Datanami to describe how they are using AI tools such as AllegroGraph:

Thousands of companies around the world rely on Wolters Kluwer's practice management software to automate core

aspects of their businesses. That includes doctor's offices that use its software make healthcare decisions in a clinical setting, corporate law offices that use its software to understand M&A activities, and accounting firms that use its software to craft tax strategies for high net-worth clients.

Wolters Kluwer is embedding a range of AI capabilities – including deep learning and graph analytics – across multiple product lines. For example, its Legalview Bill Analyzer software helps to identify errors in legal bills sent from outside law firms to the corporate counsels of large companies. The typical recovery rate for people reviewing bills manually is 1% to 2%. By adding machine learning technology to the product the recovery rate jumps to 7% to 8%, which can translate into tens of millions of dollars.

Wolters Kluwer is using graph analytic techniques to accelerate the knowledge discovery process for its clients across various professions. **The company has tapped Franz's AllegroGraph software** to help it drive new navigational tools for helping customers find answers to their questions.

By arranging known facts and concepts as **triples in the AllegroGraph database** and then exposing those structures to users through a traditional search engine dialog box, Wolters Kluwer is able to surface related insights in a much more interactive manner.

"We're providing this live feedback. As you're typing, we're providing question and suggestions for you live," Tatham said. **"AllegroGraph gives us a performant way** to be able to just work our way through the whole knowledge model and come up with suggestion to the user in real time."

Read the full article over at Datanami.

AllegroGraph News

Franz periodically distributes newsletters to its Semantic Technologies, and Common Lisp based Enterprise Development Tools mailing lists, providing information on related upcoming events and new software product developments.

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.

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 Among Top 10 Analytics Solution Providers by Pharma Tech Outlook

Franz's AllegroGraph powers Pharma Analytics for Sophisticated Decision Insights from Complex, Distributed Big Data

OAKLAND, Calif. – January 28, 2016 – Franz Inc., an early innovator in Artificial Intelligence (AI) and leading supplier

of Semantic Graph Database technology has been named to Pharma Tech Outlook's Top 10 Analytics Solutions Providers for 2016.

"Franz Inc. has been selected as a Top 10 Analytics Solution Provider after careful evaluation across a dozen quantitative and qualitative elements," said Stacey Smith, Editor of Pharma Tech Outlook. "Our selection process takes into consideration a company's experience, industry recognition, technical certifications, market presence and positive client reviews. Franz Inc. and their Semantic Graph Database, AllegroGraph, are clear market leaders for Analytics in the Pharmaceutical Industry."

Pharma Tech Outlook covers the latest developments in the pharmaceutical industry. They provide valuable updates – news, views and trends, expert opinions, studies, discoveries, R&D and clinical trials – essential for decision-makers in the industry. Covering all the novel outcomes, Pharma Tech Outlook aims at contributing to the transformation of innovations into services as well as creating a healthy and productive society.

Pharma Tech Outlook's "Top 10 Analytics Solution Providers" are selected annually by a panel of experts and members of Pharma Tech Outlook's editorial board to recognize and promote technology entrepreneurship.

"Using AllegroGraph, 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, and Publishing," said Jans Aasman, CEO of Franz Inc. "Integrating databases is a virtually effortless which is particularly valuable if organizations want to tap into the growing number of public datasets to enrich their analytics."

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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.)

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About Pharma Tech Outlook

Pharma Tech Outlook is an online and a monthly magazine which covers most important and latest developments in the pharmaceutical industry. Through nominations and consultations with industry leaders, its editors choose the best in Pharma domains. Pharma Tech Outlook’s December-January Edition is an

annual listing of Top 10 Analytics Solution Providers. For more information, visit the website at: <http://www.pharmatechoutlook.com/>

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New York Times Article – Is There a Smarter Path to Artificial Intelligence?

From the New York Times – June 20, 2018

This article caught our attention because they featured a startup that was using Prolog for AI. We have been strong proponents of Prolog for Semantic Graph solutions for many years.

For the past five years, the hottest thing in artificial intelligence has been a branch known as deep learning. The grandly named statistical technique, put simply, gives computers a way to learn by processing vast amounts of data. Thanks to deep learning, computers can easily identify faces

and recognize spoken words, making other forms of humanlike intelligence suddenly seem within reach.

Companies like Google, Facebook and Microsoft have poured money into deep learning. Start-ups pursuing everything from cancer cures to back-office automation trumpet their deep learning expertise. And the technology's perception and pattern-matching abilities are being applied to improve progress in fields such as drug discovery and self-driving cars.

But now some scientists are asking whether deep learning is really so deep after all.....

.....Those other, non-deep learning tools are often old techniques employed in new ways. At Kyndi, a Silicon Valley start-up, computer scientists are writing code in Prolog, a programming language that dates to the 1970s. It was designed for the reasoning and knowledge representation side of A.I., which processes facts and concepts, and tries to complete tasks that are not always well defined. Deep learning comes from the statistical side of A.I. known as machine learning.

Our Tweet with links to AllegroGraph Prolog documenation and the full article:

nytimestech "computer scientists are writing code in **#Prolog**... It was designed for the reasoning and knowledge representation side of **#AI**" <https://buff.ly/2lmYwkv> – **#AllegroGraph** is the only **#GraphDatabase** to include **#Prolog** for your AI apps. <https://buff.ly/2yv0IzF>