

Graphorum — Dr. Aasman Presenting

Graph-Driven Event Processing for Intelligent Customer Operations

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10:15 AM – 11:15 AM

Level: Case Study



Dr. Jans Aasman, CEO, Franz Inc.

In the typical organization, the contents of the actual chat or voice conversation between agent and customer is a black hole. In the modern Intelligent Customer Operations center, the interactions between agent and customer are a source of rich information that helps agents to improve the quality

of the interaction in real time, creates more sales, and provides far better analytics for management. The Intelligent Customer Operations center is enabled by a taxonomy of the products and services sold, speech recognition to turn conversations into text, a taxonomy-driven entity extractor to take the important concepts out of conversations, and machine learning to classify chats in various ways. All of this is stored in a real-time Knowledge Graph that also knows (and stores) everything about customers and agents and provides the raw data for machine learning to improve the agent/customer interaction.

In this presentation, we describe a real-world Intelligent Customer Organization that uses graph-based technology for taxonomy-driven entity extraction, speech recognition, machine learning, and predictive analytics to improve quality of conversations, increase sales, and improve business

visibility.

<https://graphorum2019.dataversity.net/sessionPop.cfm?confid=132&proposalid=11010>

Ontology Summit 2020 – Knowledge Graphs

The Ontology Summit is an annual series of events that involves the ontology community and communities related to each year's theme chosen for the summit. The Ontology Summit was started by Ontolog and NIST, and the program has been co-organized by Ontolog, NIST, NCOR, NCB0, IA0A, NCO_NITRD along with the co-sponsorship of other organizations that are supportive of the Summit goals and objectives.

Knowledge graphs, closely related to ontologies and semantic networks, have emerged in the last few years to be an important semantic technology and research area. As structured representations of semantic knowledge that are stored in a graph, KGs are lightweight versions of semantic networks that scale to massive datasets such as the entire World Wide Web. Industry has devoted a great deal of effort to the development of knowledge graphs, and they are now critical to the functions of intelligent virtual assistants such as Siri and Alexa. Some of the research communities where KGs are relevant are Ontologies, Big Data, Linked Data, Open Knowledge Network, Artificial Intelligence, Deep Learning, and many others.

Dr. Jans Aasman presented – ***“Why Knowledge Graphs Hit the Hype Cycle and What they have in common”***



Turn Customer Service Calls into Enterprise Knowledge Graphs

Franz's CEO, Jans Aasman's recent Destination CRM article:

The need for text analytics and speech recognition has broadened over the years, becoming more prevalent and essential in the sales, marketing, and customer service departments of various types of businesses and industries. The goal is simple for these contact center use cases: provide real-time assistance to human agents interacting with potential customers to close sales, initiate them, and increase customer satisfaction.

Until fairly recently, the rich array of unstructured data encompassing client texts, chats, and phone calls was obscured from contact centers and organizations due to the sheer arduousness of speech recognition and text analytics. When readily integrated into knowledge graphs, however, these same sources become some of the most credible for improving agent interactions and achieving business objectives.

Powered by the shrewd usage of organizational taxonomies, machine learning, natural language processing (NLP), and semantic search, knowledge graphs make speech recognition and text analytics immediately accessible, enabling real-time customer interactions that can maximize business objectives—and revenues.

Taxonomies

Taxonomies are the foundation of the knowledge graph approach to rapidly conveying results of speech recognition and text analytics for timely customer interactions. Agents need three types of information to optimize customer interactions: their personas (such as an executive or a purchase department representative, for example), their reasons for contacting them, and their industries. Taxonomies are instrumental to performing these functions because they provide a hierarchy of relevant terms to organizations.

Read the full article at [Destination CRM](#)

Creating Explainable AI With Rules

Franz's CEO, Jans Aasman's recent Forbes article:

There's a fascinating dichotomy in artificial intelligence between statistics and rules, machine learning and expert systems. Newcomers to artificial intelligence (AI) regard machine learning as innately superior to brittle rules-based systems, while the history of this field reveals both rules and probabilistic learning are integral components of AI.

This fact is perhaps nowhere truer than in establishing

explainable AI, which is central to the long-term business value of AI front-office use cases.

Granted, simple machine learning can automate backend processes. However, the full extent of deep learning or complex neural networks – which are much more accurate than basic machine learning – for mission-critical decision-making and action requires explainability.

Using rules (and rules-based systems) to explicate machine learning results creates explainable AI. Many of the far-reaching applications of AI at the enterprise level – deploying it to combat financial crimes, to predict an individual's immediate and long-term future in health care, for example – require explainable AI that's fair, transparent and regulatory compliant.

Rules can explain machine learning results for these purposes and others.

[Read the full article at Forbes](#)

Webcast – Speech Recognition, Knowledge Graphs, and AI for Intelligent Customer Operations – April 3, 2019

Presenters – Burt Smith, N3 Results and Jans Aasman, Franz Inc.

In the typical sales organization the contents of the actual chat or voice conversation between agent and customer is a

black hole. In the modern Intelligent Customer Operations center (e.g. N3 Results – www.n3results.com) the interactions between agent and customer are a source of rich information that helps agents to improve the quality of the interaction in real time, creates more sales, and provides far better analytics for management.

Join us for this Webinar where we describe a real world Intelligent Customer Operations center that uses graph based technology for taxonomy driven entity extraction, speech recognition, machine learning and predictive analytics to improve quality of conversations, increase sales and improve business visibility.

View the recorded webinar.

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](#).

Why Is JSON-LD Important To Businesses?

Forbes – February 2019

Although you may not have heard of JavaScript Object Notation Linked Data (JSON-LD), it is already affecting your business. Search engine giant Google has mentioned JSON-LD as a preferred means of adding structured data to webpages to make them considerably easier to parse for more accurate search engine results. The Google use case is indicative of the larger capacity for JSON-LD to increase web traffic for sites and better guide users to the results they want.



Expectations are high for JSON-LD, and with good reason. It effectively delivers the many benefits of JSON, a lightweight data interchange format, into the linked data world. Linked data is the technological approach supporting the World Wide Web and one of the most effective means of sharing data ever devised.

In addition, the growing number of enterprise knowledge graphs fully exploit the potential of JSON-LD as it enables organizations to readily access data stored in document formats and a variety of semi-structured and unstructured data as well. By using this technology to link internal and external data, knowledge graphs exemplify the linked data approach underpinning the growing adoption of JSON-LD – and the demonstrable, recurring business value that linked data consistently provides.

Read the full article at Forbes.

The Semantic Knowledge Graph: A Tribute



Dataversity – January 2019

Noam Chomsky, the philosopher, cognitive scientist, historian, social critic, and father of modern linguistics, has authored over 1,000 articles and 130 books. The 89-year-old intellectual also has written films and appeared in many documentaries. The substantial work he has done in linguistics and politics has earned him the title of “most cited living author.”

Now his work is the subject of the Noam Chomsky Knowledge Graph, the first Semantic Knowledge Graph for a public figure. “Doing a Semantic Project of all he has written or said is a fabulous tribute to a man who has made a big contribution to the study of language and its meaning,” says Fred Davis, Executive Director of the Chomsky Knowledge Graph project.

Dr. Jans Aasman was quoted:

“A good thing about Semantic Technology is that it’s easier to add new information than if you have a highly structured database. That’s because of the way things are stored in triples – where you have a subject, predicate, and object relationship—so you can bring in new information that

instantly connects to other information,” says Dr. Jans Aasman, CEO of Franz.

Read the full article at [Dataversity](#)

ГРАФОВЫЕ БАЗЫ: ПРИНЦИП РАБОТЫ И ПРИМЕНЕНИЕ – GRAPH BASES: PRINCIPLE OF OPERATION AND APPLICATION

Всеволод Дёмкин удаленно работает во Franz Inc. над графовой базой AllegroGraph. Преподает в Projector курс «Natural Language Processing». В свободное время делает open-cors для обработки природных текстов на Lisp'е.

Мы рассмотрим создание программы для агрегации текстов из разных источников, таких как twitter, блоги, reddit и т.д., – их автоматической, а затем ручной обработки для формирования дайджеста новостей по определенной теме. На этом примере мы проанализируем, какие преимущества дает использование графовых баз данных, обсудим их возможности и ограничения.

В качестве конкретной БД будет использована система Franz AllegroGraph и мы ознакомимся с ее экосистемой, включающей возможности построение API и веб-приложений, а также со средой Allegro Common Lisp, на которой она построена. Особое внимание будет уделено использованию машинного обучения и NLP при решении задач работы с текстом, в частности, внутри

AllegroGraph.

Обсудим:

- В чем особенности, как работают, преимущества/недостатки графовых БД;
- Как решать базовые задачи обработки текстов с использованием инструментария ML/NLP;
- Как построить полноценное приложение с ядром обработки текста на основе графовой БД и ML/NLP технологий;
- Как устроена экосистема Common Lisp и как можно задействовать ее для создания серверных приложений.

Лекция будет полезна: разработчикам, которые интересуются темой графовых баз данных и/или ML/NLP.

Semantic Web and Semantic Technology Trends in 2019

Dataversity – January 2019

What to expect of Semantic Web and other Semantic Technologies in 2019? Quite a bit. DATAVERSITY engaged with leaders in the space to get their thoughts on how Semantic Technologies will have an impact on multiple areas.

Dr. Jans Aasman, CEO of Franz Inc. was quoted several times in the article:

Among the semantic-driven AI ventures next year will be those that relate to the healthcare space, says Dr. Jans Aasman, CEO of Semantic Web technology company Franz, Inc:

“In the last two years some of the technologies were starting to get used in production,” he says. “In 2019 we will see a ramp-up of the number of AI applications that will help save lives by providing early warning signs for impending diseases. Some diseases will be predicted years in advance by using genetic patient data to understand future biological issues, like the likelihood of cancerous mutations – and start preventive therapies before the disease takes hold.”

If that’s not enough, how about digital immortality via AI Knowledge Graphs, where an interactive voice system will bring public figures in contact with anyone in the real world? “We’ll see the first examples of Digital Immortality in 2019 in the form of AI Digital Personas for public figures,” says Aasman, whose company is a partner in the Noam Chomsky Knowledge Graph:

“The combination of Artificial Intelligence and Semantic Knowledge Graphs will be used to transform the works of scientists, technologists, politicians, and scholars like Noam Chomsky into an interactive response system that uses the person’s actual voice to answer questions,” he comments.

“AI Digital Personas will dynamically link information from various sources – such as books, research papers, notes and media interviews – and turn the disparate information into a knowledge system that people can interact with digitally.” These AI Digital Personas could also be used while the person is still alive to broaden the accessibility of their expertise.

On the point of the future of graph visualization apps, Aasman notes that:

“Most graph visualization applications show network diagrams

in only two dimensions, but it is unnatural to manipulate graphs on a flat computer screen in 2D. Modern R virtual reality will add at least two dimensions to graph visualization, which will create a more natural way to manipulate complex graphs by incorporating more depth and temporal unfolding to understand information within a time perspective.”

Read the full article at [Dataversity](#).