

Predictions: Quantum AI, Graph Neural Networks, and Personal Data Pods



Dr. Jans Aasman, CEO, Franz Inc.

The new year will bring us many exciting developments in data-enabling technologies including the merging of artificial intelligence with quantum computing and graph neural networks, which will power extremely complex, next-generation algorithms. Knowledge graphs will become lego-like with the ability

to be plugged into diverse applications. With mounting concern over social media sites using personal data, expect new ways for users to regain control with “personal data pods.” Enterprises will interweave graphs with document and time-series databases to create a single enterprise-wide data fabric.

Quantum AI Environments Will Emerge

recent advances in quantum computing, in 2022, we will start to see the convergence of quantum computing with artificial intelligence, knowledge graphs, and programming languages. These distinct technologies will start to morph into a single computing environment operating in one memory space as a fully integrated solution. The separation between programming and AI/analytics will begin to blur as developers use Quantum-based computer languages to generate incredibly complex, next-generation AI algorithms and applications that result in new discoveries based on the quantum acceleration of machine learning and deep learning.

Graph Neural Networks (GNNs) Will Advance AI Reasoning

In the past few years, organizations have experienced the advantages of combining graphs with artificial intelligence. In 2022 and beyond, leading companies will apply machine learning's advanced pattern matching to graph neural networks (GNNs), which are complex high-dimensional, non-Euclidian datasets. By fusing GNN reasoning capabilities with classic semantic inferencing available in AI knowledge graphs, organizations will get two forms of reasoning in one framework. Automatically mixing and matching these two types of reasoning is the next level of AI and produces the best prescriptive outcomes. This "total AI" is swiftly becoming necessary to tackle enterprise-scale applications of mission-critical processes like predicting equipment failure, optimizing healthcare treatment, and maximizing customer relationships.

Read the full article to see the additional predictions:

Facebook Users Will Regain Control Through Personal Data Pods

Knowledge Graphs Will Become Composable

Graph, Document and Time-Series Databases will Dominate by 2030

**Fuse Graph Neural Networks
with Semantic Reasoning to
Produce Complimentary**

Predictions

Organizations can combine GNN reasoning capabilities with classic semantic inferencing in Knowledge Graphs to reach the next level AI and predict any business event based on context at scale.

The ability for machines to reason – not just identify patterns in massive data amounts, but make rule or logic based inferences on domain specific knowledge – is foundational to Artificial Intelligence. The growing momentum around Neuro-Symbolic AI and the increasing reliance on Graph Analytics demonstrate how important these developments are for the enterprise.

Combining AI's symbolic knowledge processing with its statistical branch (typified by machine learning) produces the best prescriptive outcomes, delivers total AI, and is swiftly becoming necessary to tackle enterprise scale applications of mission-critical processes like foretelling equipment failure, optimizing healthcare treatment, and maximizing customer relationships.

Graph Neural Networks (GNN) exemplify the confluence of machine learning and AI reasoning. Their underlying graph capabilities 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 Knowledge Graphs. Automatically mixing and matching these two types of reasoning is next level AI and is the basis for predicting any business event based on context at scale.

Read the Full Article at [Towards Data Science](#).

The Amazing Applications of Graph Neural Networks

Dr. Jans Aasman, CEO, Franz Inc. was interviewed for this InsideBigData Article:

The predictive prowess of machine learning is widely hailed as the summit of statistical Artificial Intelligence. Vaunted for its ability to enhance everything from customer service to operations, its numerous neural networks, multiple models, and deep learning deployments are considered an enterprise surety for profiting from data.

But according to Franz CEO Jans Aasman, there's just one tiny problem with this lofty esteem that's otherwise accurate: for the most part, it "only works for what they call Euclidian datasets where you can just look at the situation, extract a number of salient points from that, turn it into a number in a vector, and then you have supervised learning and unsupervised learning and all of that."

Granted, a generous portion of enterprise data is Euclidian and readily vectorized. However, there's a wealth of non-Euclidian, multidimensionality data serving as the catalyst for astounding machine learning use cases, such as:

Network Forecasting: Analysis of all the varying relationships between entities or events in complex social networks of friends and enemies yields staggeringly accurate predictions about how any event (such as a specific customer buying a

certain product) will influence network participants. This intelligence can revamp everything from marketing and sales approaches to regulatory mandates (Know Your Customer, Anti-Money Laundering, etc.), healthcare treatment, law

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

Data Summit Connect – Graph Neural Networks (Recording)



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The Premier online data management and analytics conference. Dive into the latest strategies and technologies in data management and analytics at Data Summit Connect 2021. From modern data architecture and cloud migration, to DataOps and analytics, Data Summit 2021 provides technical know-how, practical advice and expert insights to succeed in this evolving space. Topics cover innovative approaches that the world's leading companies are taking to solve today's key challenges and emerging technologies revolutionizing how data is stored, protected, integrated, enhanced and acted upon.

Dr. Jans Aasman will be presenting – Graph Neural Networks – Transforming AI Knowledge Graphs