

# Franz's Jans Aasman gives a primer on Graph Neural Networks at KMWorld Connect 2021

Enterprises are subscribed to the power of modeling data as a graph and the importance of building Knowledge Graphs for customer 360 and beyond.

The ability to explain the results of AI models, and produce consistent results from them, involves modeling real-world events with the adaptive schema consistently provided via Knowledge Graphs.

Jans Aasman, CEO, Franz Inc., discussed the power of knowledge graphs during his KMWorld Connect 2021 presentation, "Graph Neural Networks for NLP and Entity-Event Knowledge Graphs."

Graph Neural Networks (GNNs) have emerged as a mature AI approach used by companies for Knowledge Graph enrichment via text processing for news classification, question and answer, search result organization, and much more.

A graph can represent many things—social media networks, patient data, contracts, drug molecules, etc. GNNs enhance neural network methods by processing the graph data through rounds of message passing, as such, the nodes know more about their own features as well as neighbor nodes. This creates an even more accurate representation of the entire graph network.

"We've been working with knowledge graphs for many years," Aasman said. "The model we've come up with is the entity-event approach."

This technique can be used by telecoms, medical fields, call

centers, and in aviation, he explained. It's a prediction about what's going to happen to the entity you are interested in. Sometimes you need something more than looking at a series of events. That's where a GNN comes in.

However, machine learning doesn't work well when the context is a graph. In general, GNN can be used for node classification, graph clustering, and link prediction. GNN can help with relation to extraction in NLP.

"We at Franz are interested in this and wanted to add to these use cases," Aasman said.

AllegroGraph used the GNN to look at patterns in literature and put it into a graph of events that are related, he explained. The company looked at social political actions for world events in 2018.

A semantic reasoned create additional knowledge and facts based on logic references. Think of GNN as a probabilistic inference engine, he said.

AllegroGraph is currently working in the medical domain to find patterns within medical data and patients.

"If you look at statistic relationships, taxonomies at the same time, you can predict the next outcome," Aasman said. "We've seen our predictions get better with Graph Neural Networks."

**KMWorld Connect 2021 is going on this week, November 15-18, with workshops on Friday, November 19. On-demand replays of sessions will be available for a limited time to registered attendees and many presenters are also making their slide decks available through the conference portal. For more information, go to [www.kmworld.com/conference/2021](http://www.kmworld.com/conference/2021).**

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