Ford Achieve 90% Accuracy in Predicting Production Line Part Failure

THE CHALLENGE →

Ford employed IoT to globally oversee its manufacturing equipment handling - welding, painting, and assembly. It was using multiple relational databases, that resulted in data ambiguities caused and caused production downtime.

THE SOLUTION →

Using TigerGraph, Ford was able to resolve persistent data duplication issues through entity resolution and importantly enhance their predictive maintenance, optimized the timing of their machinery replacement, minimize downtime, and boost their production efficiency.

THE RESULTS +

With TigerGraph, Ford is able to achieve 90% accuracy reconciling production data across two databases with entity resolution, enabling predictive part failure identification and preventing assembly line disruptions.

The Challenge:

Ford uses the internet of things to remotely manage its manufacturing equipment around the world - this machinery performs a variety of production tasks including welding, painting, assembly, and more. Ford used two relational databases to store and analyze the data collected from its machinery, but quickly ran into problems with data ambiguity that resulted in production downtimes. The company realized they needed an entity resolution system to consolidate their data.

The Solution:

Ford decided to complement its relational databases with a graph database, initially to remove data duplicates using entity resolution - this was a challenge that Ford had been trying to address for many months. Once data ambiguities were removed, similarity matching algorithms were applied to maximize production uptimes. Using TigerGraph, they could identify which robotic parts were about to fail so they could replace the failing parts all at once, thereby optimizing their production efficiency.

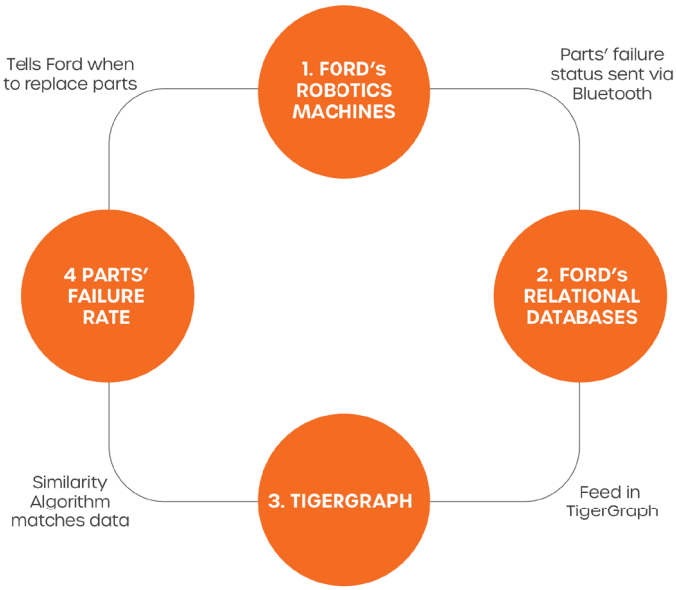

Figure:
How both relational databases feed into TigerGraph and map to one source of truth.

The Results:

Ford is now able to reconcile data in each of its two databases to the same piece of the production line machinery with 90% accuracy. Since using TigerGraph's entity resolution for asset tag reconciliation, they're able to identify when a part is about to fail so they can pre-plan and avoid unnecessary breaks in the production assembly line.

About TigerGraph

TigerGraph, the enterprise AI infrastructure and graph database leader, delivers massively parallel storage and computation that scales independently and without size limits, to meet the changing workloads and growing data volumes required for crucial business needs and AI adoption within companies. By providing visibility into the multidimensional data connections and relationships, TigerGraph has become a trusted partner to leading companies including JPMC, Intuit, United Healthcare, and Unilever successfully solving fraud detection, entity resolution, customer 360, supply chain management, and many other problems. Headquartered in Silicon Valley, California and with offices around the world TigerGraph is backed by NVIDIA, Tiger Global Management, Softbank, Susquehanna International Group (SIG), Oceanpine Capital, Celesta Capital Blackopal Ventures, and Qiming Venture Partners.

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