QUARRY: A Graph Model for Queryable Association Rules

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Virtual - Researchers Catch-up

The short text descriptions of maintenance work orders capture relationships between assets, their failure modes and the activities performed on those assets. Association rule mining is a pivotal knowledge discovery technique that automatically discovers these relationships by using machine learning to produce a list of association rules. However, inspecting these rules is a time-intensive and laborious task for domain experts, as not all rules are actually useful or interesting.

In this presentation Michael introduced QUARRY, a graph-based model that enables consumable and queryable insights from association rules. In contrast to existing systems, which take a list of rules and display them in a purpose-built visualisation, QUARRY enables association rules to be queried directly via graph queries, similarly to a knowledge graph. Michael demonstrates QUARRY on a sample dataset of maintenance work orders, illustrating the types of queries that can be performed over the association rules in order to provide useful insights into the data.

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