Enriching the Property Graph with Relationship Objects

In many graph applications we find the link between two nodes is actually a complex object in itself. Property Graph Databases (i.e. Neo4j) try to solve this by putting attribute/values on the edges between nodes but unfortunately this is far too limited as the values cannot be nodes themselves.

Semantic Graph Databases solve this by creating ‘Relationship Objects’ between nodes. In our presentation we will describe four use cases where the Property Graph’s shortcomings were solved by using Relationship Objects. An online banking application, a fraud detection application for a European tax office, a machine learning application in healthcare and the CrunchBase investment database.

Working with these ‘Relationship Objects’ is very efficient because we employed a new ‘Super Graph’ pattern that summarizes connections between nodes in such a way that even in graphs with large branching factors we still can perform super fast search.

Another advantage of the relationship objects is that it makes it far more straightforward to interactively explore large graph space in an aesthetically pleasing way in Gruff, Franz’s advanced graph visualization tool.

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