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Title: ARM & SQLP: Introducing a New Foundation for a Path-Aware Query Language to Bridge Relational and Graph Data

Abstract: In this talk, I will introduce a new foundation for structured data integration built on the Abstract Relational Model (ARM) and SQL with paths (SQLP). Our approach unifies tabular and graphical perspectives by adopting a labelled property graph semantics, offering a conceptual framework that supports models like LPGs and RDF. This work addresses identity issues through an abstract “EID” domain alongside standard types such as INTEGER and VARCHAR. Entities without literal identifiers are referenced via referring expression types, enabling incremental, orthogonal identity resolution. SQLP extends SQL with a concise navigational syntax (“ $x.f1\dots fk$ ”) for compactly expressing unary foreign key joins. I will demonstrate how SQLP queries over ARM schemas can be rewritten into equivalent executable RM queries, ensuring a seamless interplay between property graphs and relational views. This foundation promises a flexible, powerful basis for integrating structured data, benefiting both conceptual modelling and physical database design.