Local Consistency vs. Global Consistency on Annotated Data - Abstract

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Abstract

On 17th June 2025, Phokion G. Kolaitis delivered a keynote talk at the 33nd Symposium on Advanced Database Systems in Ischia (Napoli, Italy). The following is the abstract of his talk

Abstract

In several different settings, one comes across situations in which the objects of study are locally consistent but globally inconsistent. Earlier work in probability theory in the 1960s and in relational database theory in the 1980s produced characterizations of when local consistency implies global consistency. The aim of this talk is to present a unifying framework for investigating the interplay between local and global consistency by considering K-relations, i.e., relations in which every tuple is annotated with a value from some positive monoid K. The main result characterizes the positive monoids K for which every pairwise consistent collection of K-relations over an acyclic schema is globally consistent; special cases include the earlier results about local vs. global consistency for relational databases and more recent results about local vs. global consistency for bag databases.

This is joint work with Albert Atserias at UPC Barcelona.

Declaration on Generative AI

The authors have not employed any Generative AI tools.

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