

On Thursday, 17th November 2022, 2:00 pm

Dr. Pavel Koupil, Charles University Prague, Czech Republic

will give a talk entitled with:

Towards Unified and Self-Adapting Management of Multi-Model Data

Abstract:

The advent of multi-model data introduces a new dimension of complexity and new challenges. We have to address issues arising from the combination of various interconnected and overlapping data having contradictory (structural) features. Moreover, its structure may change over time, and its size can grow to the extremes. Hence, a number of matured approaches for various data management tasks commonly used for single-model database systems cannot be directly applied to multi-model data.

In this talk, we focus on the problem of modelling and management of multi-model data. In the first part, we present a new family of unified approaches for data modelling, schema inference, querying, and evolution management. We show that the core of the approaches, i.e., the categorical representation of multi-model data, enables us to grasp all the specifics of the individual models and their possible combinations. Moreover, it provides simple yet powerful formal basis enabling unique and robust support for various data management tasks.

In the second part, we discuss the area of automatic management of dynamic multi-model Big Data, as it is not humanly possible to handle such a complex tasks manually. We envision a framework capable of accepting different levels of user input and different types of data, queries, changes, and propagation strategies and ensuring the preservation of adequate and efficient data access.

Keywords:

Multi-Model Data, Conceptual Modelling, Logical Modelling, Schema Inference, Querying, Data Migration, Evolution Management, Category Theory

The presentation will take place in a hybrid mode, guest can either take part in Room 607, Bajuwarenstr. 4 or online (zoom-Link: <https://uni-regensburg.zoom.us/j/64792688215>)

Best regards,

Meike Klettke