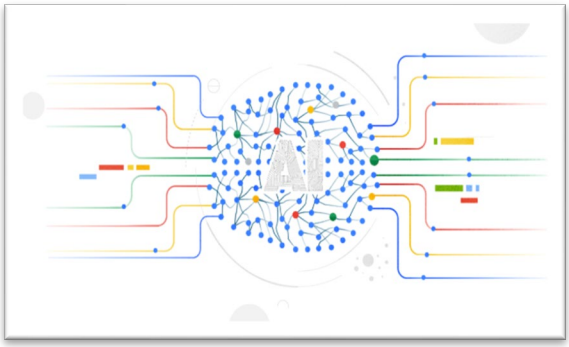
Hauptseminar / Advanced Seminar

Advanced Topics in Data Management

Summer Term 2026

Lecturers: Prof. B. Mitschang, Prof. H. Schwarz
Contact: Holger Schwarz, holger.schwarz@ipvs.uni-stuttgart.de
Language: English

Description



Collecting, managing and provisioning data is crucial for many different tasks. Among them are machine learning tasks and the training of large language models. The arising challenges, are addressed by state-of-the art approaches in data management. In the context of data meshes, data products and self-serve platforms are used to make data findable and usable for data consumers. These users need further support to find and apply appropriate preprocessing steps to the data, e.g., to address issues with data like missing values and outliers. In recent years, Foundation Models and especially LLMs have gained high popularity. Hence, further challenges arise when it comes to using LLMs for defining and implementing data products, for identifying suitable data preprocessing pipelines as well as for other tasks like planning and design.

In this seminar, we address current technologies, concepts, algorithms and system infrastructures for above-mentioned challenges for data management. Potential topics are:

- Metamodels for data products
- LLMs and data products
- Data Mesh and self-serve platforms
- LLMs for data preprocessing
- LLMs for planning and design
- …

Remarks

- In this advanced seminar, each student will work on one specific topic. Basic literature will be provided by the advisors. Each student will summarize results in a document of about 20 pages and in a 30 minutes presentation.
- Seminar topics will be assigned to the participants in a first meeting at the beginning of the summer term. Registered participants will be informed about the date by email.

Prerequisites

Basic knowledge on database systems and information systems, e.g., from the lectures "Modellierung" or „Data Warehouse, Data Mining and OLAP“, is mandatory.