Advanced Topics in Data Management

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

Description

The comprehensive management of large volumes of data is crucial in modern information systems. This is often characterized by the term big data. Some of the main driving forces are current trends like Industrie 4.0 and the Internet of Things (IoT) which result in new challenges for large scale data management. Data lakes evolved as a new concept to address some of these challenges. Data lakes and similar systems make heterogeneous data from multiple sources available for comprehensive analytics. These analysts often want to know what data from which sources and in what quality are available. This raises the question of appropriate metadata management concepts. Also the lifecycle of the data and appropriate governance concepts have to be considered. As a data lake covers huge amounts of data, data security concepts are also of paramount interest in this context. In this seminar, we cover important topics in the mentioned fields, for example:

- Metadata management in large scale data management systems such as data lakes?
- Information lifecycle and governance
- Aspects and challenges of data security in very large data stores and data lakes
- Concepts and algorithms to ensure data security in large scale data management systems
- ...

We address current technologies, concepts, algorithms and system infrastructures for large scale data management and focus on the above mentioned challenges.

Remarks

- Seminar topics will be introduced and assigned to the participants in a first meeting in KW6. Registered participants will be informed about the date by email.
- In this advanced seminar, each student will work on one specific topic. Basic literature will be provided by the advisors. Results will be summarized in a document of about 20 pages and a 30 minutes presentation.

Prerequisites

Basic knowledge on database systems and information systems, e.g. from lecture "Modellierung", is mandatory.