Hauptseminar / Advanced Seminar

Advanced Topics in Data Management
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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). In particular, the growing usage of sensors and the huge volume of data they are producing result in new challenges for large scale data management. These challenges refer to the entire lifecycle of IoT data including major steps like capturing, managing, processing and analyzing the data. Due to the General Data Protection Regulation (GDPR), data security and privacy have to be considered in all of these operations. Important topics are for example:

- How can data be stored and processed efficiently in sparse, low-resource IoT environments?
- How can IoT environments be monitored effectively?
- How to connect Smart Things with IoT Platforms safely?
- How can private data be secured on Smart Things?
- How can sensitive data be processed in a privacy-aware manner in real-time?
- How can privacy be ensured on very large databases and data stores, e.g., Data Lakes?

In this advanced seminar, we address current technologies and system infrastructures for large scale data management of IoT data and focus on the above mentioned challenges.

Remarks

- The seminar topics will be introduced and assigned to the participants in KW6. The exact date will be published on the web site below.
- 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.

Further Information

https://www.ipvs.uni-stuttgart.de/abteilungen/as/lehre/lehrveranstaltungen/hauptseminare/SS19/HSEM?__locale=en