

A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

DISPUTATION

Donnerstag, 14. Januar 2021, 15:00 Uhr

Ort: [WebEx](#)

Disputation über die Doktorarbeit von

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Thema der Dissertation:

**Performance and Reliability Evaluation of
Apache Kafka Messaging System**

Thema der Disputation:

The ACID guarantees in streaming data processing

Die Arbeit wurde unter der Betreuung von **Prof. Dr. K. Wolter** durchgeführt.

Abstract: Streaming data can be sensor data transmitted across IoT devices, user activity records from websites or financial transactions in e-commerce analysis. This type of data is generated continuously in large volumes and needs to be processed by data analysis applications in real-time. The traditional batch-oriented big data processing systems are insufficient for the real-time requirements because they store data in distributed databases before processing the data, thus the earlier arrived data has to wait for accumulating batches. Consequently, streaming data processing systems (SDPSs) are developed to continuously process each piece of data immediately as it arrives. This talk will introduce the streaming data processing workflow of the SDPS in comparison with traditional batch-oriented systems. While most batch-oriented systems provide strong ACID (atomicity, consistency, isolation, durability) using transactional databases, guaranteeing the ACID in SDPS remains challenging: traditional transactional processing technology affects the speed of streaming data processing. This talk will explain the differences between batch-oriented and stream-oriented processing, and what this implies for maintaining the ACID properties.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Die Vorsitzende der Promotionskommission
Prof. Dr. K. Wolter