

# Seminar: Implementation techniques for main-memory DBMS

First meeting

Garching, July 13th, 2017



# Dates

## **Weekly meeting**

Tuesday, 14 p.m. - 15:30 p.m. (starting on 17.10.2017 until end of semester)

Room 02.09.014

2 student presentations per meeting

## **Structure**

E-Mail to [schuele@in.tum.de](mailto:schuele@in.tum.de) for paper recommendation

Send one e-mail when structure is ready

Send one e-mail when first draft is ready

## **Parts**

Seminar thesis (<10 pages)

Presentation (20-30 minutes)

Sample implementation (depending on topic, SQL or C++)

# Topics

Versioning for databases / Versionsverwaltung für Datenbanken

Aggregation of temporal data on NVIDIA GPUs (supervisor: Andreas Kipf, NVIDIA graphics board required)

Improvements of Bloom-Filters (idea by: Andreas Kipf)

Database Cracking

MapReduce and SQL: Do we need MapReduce?

How database index structures can be used for Data Mining

Topics about Graph Databases (supervisor: Jan Böttcher)

# Topics

Datamining on specific algorithms: Is it possible using SQL?

Clustering-Algorithms like DBScan

Classification: Decision Trees

Classification: Naive-Bayes

Linear Regression

Logistic Regression

Time series analysis: ARIMA model

Text analysis: TFIDF

Text analysis: Topic analysis

Hypthesis-Testing

# Topics (all)

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Datamining on specific algorithms: Is it possible using SQL?

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- Classification: Decision Trees

- Classification: Naive-Bayes

- Linear Regression

- Logistic Regression

- Time series analysis: ARIMA model

- Text analysis: TFIDF

- Text analysis: Topic analysis

- Hypothesis-Testing

MapReduce and SQL: Do we need MapReduce?

How database index structures can be used for Data Mining

Topics about Graph Databases (supervisor: Jan Böttcher)

*<https://db.in.tum.de/teaching/ws1718/seminarHauptspeicherdb>*

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**Viel Spaß!**