Overview

Weekly Meeting

- Thursday, 16:00 - 17:30, starting April 25, 2019
- Room MI 02.09.014
- 2 presentations per meeting
- There will be an attendance log

Required Work

- Seminar paper (≤ 5 pages)
- Sample implementation (C++)
- Presentation (20 minutes + 10 minutes discussion)
- Moderate one discussion (act as the "devil’s advocate", you should pair up for this)
Organization & Due Dates

Check in via email ({boettcher,radke,renen,winterch}@in.tum.de) or personally

1. Check in soon after matching for paper recommendations (preferences considered FCFS)
2. Check in when rough structure is planned
3. Check in when first draft is ready

Due Dates

• Structure: ca. 4 weeks prior to presentation date
• Presentation slides: 1 week prior to presentation date
• Seminar paper and sample implementation: 2 weeks after presentation date
Topics

Block 1:

- Adaptive-Size Reservoir Sampling over Data Streams
- A Dip in the Reservoir: Maintaining Sample Synopses of Evolving Datasets
- StreamSamp
- Hash-Merge Join: A Non-blocking Join Algorithm for Producing Fast and Early Join Results
- Approximate Join Processing Over Data Streams

Block 2:

- Write Behind Logging
- BzTree: A High-Performance Latch-free Range Index for Non-Volatile Memory
- Exploiting Coroutines to Attack the "Killer Nanoseconds"
Topics

Block 3:

- Hekaton, compilation in Hekaton
- HyPer + Fork
- Silo
- Cicadia
- Efficient Window Calculation using Segment Trees
- Fast Serializable Multi-Version Concurrency Control for Main-Memory Database Systems
Topics

Block 4:
- IKKBZ Removing the $\log$ Factor
- Tighter Upper Bounds for Join Size Estimation
- Polynomial Heuristics for Query Optimization (bsizepp)
- Optimization of Conjunctive Predicates for Main Memory Column Stores
- Faster Plan Generation through Consideration of Functional Dependencies and Keys
- Solving the Join Ordering Problem via Mixed Integer Linear Programming
http://db.in.tum.de/teaching/ss19/seminarModernDatabaseSystems/

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Have fun!