Chen Luo

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Research Interest

Storage Management in Database Systems

Education

University of California, Irvine, CA *Sept. 2016–Present*
Ph.D. in Computer Science, Specialized in Database Systems
Supervisor: Prof. Michael J. Carey, GPA: 4.00/4.00

Tsinghua University, China *Sept. 2013–July 2016*
M.Eng. in Software Engineering
GPA: 94.1/100, Ranking: 2 out of 136

Tongji University, China *Sept. 2009–July 2013*
B.Eng. in Software Engineering
GPA: 4.72/5, Ranking: 2 out of 169

Research Experience

LSM-based Storage Management in AsterixDB, University of California, Irvine *Sep. 2017–Present*
- Designed efficient LSM point lookup methods to improve the applicability of secondary indexes
- Proposed new maintenance strategies for LSM-based secondary indexes and filters for efficient data ingestion and query processing
- Investigating flow control mechanisms to minimize stalls and variances in LSM-based storage engines

Indexing in HTAP Systems, IBM Almaden Research Center *June 2017–Sep. 2017*
- Designed and implemented an indexing method for Hybrid Transactional/Analytical Processing (HTAP) systems, which
  - Unifies multi-zone data organization in HTAP systems
  - Supports multi-version timestamped queries for MVCC schemes
  - Performs non-blocking index maintenance to achieve maximum query concurrency

PSpec-SQL, Tsinghua University *July 2014–Dec. 2015*
- Built a privacy-integrated data analytics system on top of Spark-SQL, which:
  - Provides a high-level privacy language for specifying privacy policies
  - Enforces privacy compliances against submitted queries using program analysis techniques
  - Integrates with differential privacy to offer provable privacy guarantees

Large-Scale Software Model Inference, Tsinghua University *Mar. 2014–July 2014*
- Proposed a MapReduce-based approach for inferring software models from large logs
- Demonstrated efficiency and scalability with extensive experiments on AWS cloud

Publications

[1] **Chen Luo**, Michael J. Carey. Efficient Data Ingestion and Query Processing for LSM-Based Storage Systems. *International Conference on Very Large Data Bases (VLDB)*, 2019, to appear

[2] **Chen Luo**, Pinar Tozun, Yuanyuan Tian, Ronald Barber, Vijayshankar Raman, and Richard Sidle. Umzi: Unified Multi-Zone Indexing for Large-Scale HTAP. *International Conference on Extending Database Technology (EDBT)*, 2019, to appear

[3] **Chen Luo**, Fei He, and Carlo Ghezzi. Inferring Software Behavioral Models with MapReduce. *Science of Computer Programming*, 145 (2017): 13-36

[4] **Chen Luo**, Fei He, Dong Yan, Dan Zhang, Xin Zhou, and Bow-Yaw Wang. PSpec: A Formal Privacy Language for Data Analytics (Poster). *International Conference on Software Engineering (ICSE)*, 2017

Work Experience

Research Summer Intern, IBM Almaden Research Center *June 2017–Sep. 2017*
- Worked on indexing in Hybrid Transaction/Analytical Processing (HTAP) systems

Committer, Apache AsterixDB *May 2017–Present*
- Committer of Apache AsterixDB open source project

Software Developer Intern, eBay China Development Center *July 2012–Mar. 2013*
- Participated in the development of eBay's web application framework
- Redeveloped the internal web traffic analytics system with MapReduce

Teaching Assistance

- Priciples of Data Management, University of California, Irvine *Fall 2017/2018*
- Data Sturctures, University of California, Irvine *Winter 2018*
- Projects in Databases and Web Applications, University of California, Irvine *Winter/Spring 2017*

Honors & Awards

- Graduate with Honor of Beijing, Tsinghua University (top 5%) *2016*
- First Class Scholarship, Tsinghua University (top 10%) *2014, 2015*
- Graduate with Honor of Shanghai, Tongji University (top 5%) *2013*
- Outstanding Student, Tongji University (top 5%) *2010, 2011*
- First Class Scholarship, Tongji University (top 5%) *2011*

Technical Skills

- **Programming Languages**: Java, C/C++, Scala, Python, SQL, Bash
- **Databases and Systems**: AsterixDB, MySQL, Hadoop, Spark, Spark-SQL, Hive
- **Software Tools**: Eclipse, LaTex, Visual Studio, Matlab