

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 *Sept. 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. *Under Revision for International Conference on Very Large Data Bases (VLDB)*

- [2] **Chen Luo**, Pinar Tozun, Yuanyuan Tian, Ronald Barber, Vijayshankar Raman, and Richard Sidle. Umzi: Unified Multi-Zone Indexing for Large-Scale HTAP. *Under Submission*
- [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*
 o Worked on indexing in Hybrid Transaction/Analytical Processing (HTAP) systems

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

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

Teaching Assistance

o Principles of Data Management, University of California, Irvine *Fall 2017/2018*
 o Data Structures, University of California, Irvine *Winter 2018*
 o Projects in Databases and Web Applications, University of California, Irvine *Winter/Spring 2017*

Honors & Awards

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

Technical Skills

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