

Chen Luo

Department of Computer Science, University of California, Irvine – Irvine – CA

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Education

University of California, Irvine, CA

Sept. 2016–Present

Ph.D. in Computer Science, Specialized in Data Management 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

Work Experience

Research Summer Intern, IBM Almaden Research Center

June 2017–Sep. 2017

- Worked on indexing management in Hybrid Transaction/Analytical Processing (HTAP) systems

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

Selected Publications

- [1] **Chen Luo**, Michael J. Carey. LSM-Based Storage Techniques: A Survey. *In Preparation*
- [2] **Chen Luo**, Michael J. Carey. Efficient Data Ingestion and Query Processing for LSM-Based Storage Systems. *International Conference on Very Large Data Bases (PVLDB)*, 2019, to appear
- [3] **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
- [4] **Chen Luo**, Fei He, and Carlo Ghezzi. Inferring Software Behavioral Models with MapReduce. *Science of Computer Programming*, 145 (2017): 13-36
- [5] **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