Zhangyu Chen

Email: chenzy@hust.edu.cn
Homepage: https://chenzhangyu.github.io
GitHub: https://github.com/chenzhangyu

Research Interests

Computer system and architecture, non-volatile memories, and debugging

Education

2017–Now **Ph.D., Computer System Architecture**
Huazhong University of Science and Technology, Wuhan, China
Advisor: Prof. Yu Hua

2013–2017 **B.E., Computer Science**
Huazhong University of Science and Technology, Wuhan, China

Publications

1. **[JCST]** **Zhangyu Chen**, Yu Hua, Pengfei Zuo, Yuanyuan Sun, Yuncheng Guo, "Approximate Similarity-Aware Compression for Non-Volatile Main Memory", Accepted and to appear in Journal of Computer Science and Technology (JCST).

2. **[FAST]** Pengfei Li, Yu Hua, Pengfei Zuo, **Zhangyu Chen**, Jiajie Sheng, "ROLEX: A Scalable RDMA-oriented Learned Key-Value Store for Disaggregated Memory Systems", Proceedings of the 21st USENIX Conference on File and Storage Technologies (FAST), 2023.

3. **[ICCD]** Bo Ding, Wei Tong, Yu Hua, **Zhangyu Chen**, Xueliang Wei, Dan Feng, "RMMIO: Enabling Reliable Memory-Mapped I/O for Persistent Memory Systems", Proceedings of the 40th IEEE International Conference on Computer Design (ICCD), 2022.

4. **[TACO]** **Zhangyu Chen**, Yu Hua, Luochangqi Ding, Bo Ding, Pengfei Zuo, Xue Liu, "Lock-Free High-Performance Hashing for Persistent Memory via PM-Aware Holistic Optimization", ACM Transactions on Architecture and Code Optimization (TACO), Volume 20, Issue 1, March 2023, Article No.: 5, pages: 1-26.

5. **[ASPLOS]** **Zhangyu Chen**, Yu Hua, Yongle Zhang, Luochangqi Ding, "Efficiently Detecting Concurrency Bugs in Persistent Memory Programs", Proceedings of the 27th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2022.

6. **[DATE]** Wei Zhao, Wei Tong, Dan Feng, Jingning Liu, **Zhangyu Chen**, Jie Xu, Bing Wu, Chengning Wang, Bo Liu, "Improving the energy efficiency of STT-MRAM based approximate cache", Proceedings of the 24th Design, Automation and Test in Europe Conference (DATE), 2021.

7. **[USENIX ATC]** **Zhangyu Chen**, Yu Hua, Bo Ding, Pengfei Zuo, "Lock-free Concurrent Level Hashing for Persistent Memory", Proceedings of the USENIX Annual Technical Conference (USENIX ATC), 2020.

8. **[DAC]** **Zhangyu Chen**, Yu Hua, Pengfei Zuo, Yuanyuan Sun, Yuncheng Guo, "Reducing Bit Writes in Non-volatile Main Memory by Similarity-aware Compression", Proceedings of the 57th Design Automation Conference (DAC), 2020.

9. **[USENIX ATC]** Yuanyuan Sun, Yu Hua, **Zhangyu Chen**, Yuncheng Guo, "Mitigating Asymmetric Read and Write Costs in Cuckoo Hashing for Storage Systems", Proceedings of the USENIX Annual Technical Conference (USENIX ATC), 2019.

POSTER

1. **Zhangyu Chen**, Yu Hua, Pengfei Zuo, Yuanyuan Sun, Yuncheng Guo, "Efficient Similarity-aware Image Compression via Approximation for NVM-based Main Memory", Poster in the 10th Annual Non-volatile Memories Workshop (NVMW), 2019.

PROFESSIONAL SERVICES

- Reviewer for IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems
- Artifact Evaluation Committee Member for SOSP 2021
- Artifact Evaluation Committee Member for OSDI 2020
- Web chair for NAS 2019

TALKS

- "Efficiently Detecting Concurrency Bugs in Persistent Memory Programs", paper presentation in ASPLOS 2022, Virtual, February 2022.
- "High-Concurrency Low-Latency Memory Architecture and System Design", invited talk in CCF Sys 2021, Virtual, December 2021.
- "Lock-free Concurrent Level Hashing for Persistent Memory", invited talk in IEEE NVMSA 2020, Virtual, August 2020.
- "Reducing Bit Writes in Non-volatile Main Memory by Similarity-aware Compression", paper presentation in DAC 2020, Virtual, July 2020.
- "Lock-free Concurrent Level Hashing for Persistent Memory", paper presentation in USENIX ATC 2020, Virtual, July 2020.
- "High-Performance Persistent Memory via Lock-Free Concurrent Design", invited talk in the 18th ChinaSys, Virtual, June 2020.
- "CoCuckoo: A Write-optimized Concurrent Cuckoo Hashing Scheme for Storage Systems", invited talk in the 17th ChinaSys, Zhuhai, China, December 2019.
- "Mitigating Asymmetric Read and Write Costs in Cuckoo Hashing for Storage Systems", paper presentation in USENIX ATC 2019, Renton, USA, July 2019.
- "Graph-based Concurrent Cuckoo Hashing for Storage Systems", presentation in HotDC 2017, Hefei, China, October 2017.

HONORS AND AWARDS

2021	Merit Graduate Student
2020	National Scholarship for Graduate Students
2020	Young Student Fellow of DAC
2019	Student Grant from USENIX ATC