GUANZHOU HU

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EDUCATION

University of Wisconsin–Madison GPA: 4.00 / 4.00 *Aug 2020 - Present*
Ph.D. Candidate, Computer Sciences *Madison, WI, USA*

- Advisors: Andrea Arpaci-Dusseau and Remzi Arpaci-Dusseau
- Research areas: Distributed storage systems, Operating systems, File systems

Massachusetts Institute of Technology GPA: 4.00 / 4.00 *Sep 2019 - Jul 2020*
Special Student, Electrical Engineering & Computer Science *Cambridge, MA, USA*

ShanghaiTech University GPA: 3.90 / 4.00 *Sep 2016 - Jul 2020*
B. Eng., Computer Science & Technology *Shanghai, China*

- Honors: President's Scholarship (2017, 2018), Dean's Scholarship (2019)

PUBLICATIONS

[1] MadFS: Per-File Virtualization for Userspace Persistent Memory Filesystems. Shawn Zhong, Chenhao Ye, Guanzhou Hu, Suyan Qu, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau, Michael Swift. 2023. In Proceedings of the 21th USENIX Conference on File and Storage Technologies (***FAST '23***).

[2] The Storage Hierarchy is Not a Hierarchy: Optimizing Caching on Modern Storage Devices with Orthus. Kan Wu, Zhihan Guo, Guanzhou Hu, Kaiwei Tu, Ramnatthan Alagappan, Rathijit Sen, Kwanghyun Park, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. 2021. In Proceedings of the 19th USENIX Conference on File and Storage Technologies (***FAST '21***).

[3] Dorylus: Affordable, Scalable, and Accurate GNN Training with Distributed CPU Servers and Serverless Threads. John Thorpe, Yifan Qiao, Jonathan Eyolfson, Shen Teng, Guanzhou Hu, Zhihao Jia, Jinliang Wei, Keval Vora, Ravi Netravali, Miryung Kim, and Guoqing Harry Xu. 2021. In Proceedings of the 15th USENIX Symposium on Operating Systems Design and Implementation (***OSDI '21***).

[4] BORA: A Bag Optimizer for Robotic Analysis. Jian Zhang, Tao Xie, Yuzhuo Jing, Yanjie Song, Guanzhou Hu, Si Chen, and Shu Yin. 2020. In Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (***SC '20***). IEEE Press, Article 12, 1–15.

[5] A Storage System Management Policy Based on Data Content Locality. Yin, Shu. and Hu, Guanzhou. 2019. CN. Patent number ZL 2019 1 0499391.9, licensed November 25, 2022.

ONGOING PROJECTS

Modernizing Replication Protocols for Data-heavy Workloads, Project Leader *Sep 2022 - Present*

- Study the performance and availability characteristics of state machine replication (SMR) protocols under modern data-heavy workloads, such as cloud HTAP databases and metadata of large-scale systems, where message latency is no longer the only dominant factor.
- Design and implement *Summerset*, a distributed KV-store written in async Rust, which supports multiple SMR protocols in one modularized codebase: `https://github.com/josehu07/summerset`.
- Propose, implement, and evaluate new protocols that enhance SMR with data-centric, heterogeneity-aware techniques (e.g. erasure coding) and on emerging new hardware (e.g. persistent memory).

TEACHING EXPERIENCE

Teaching Asst. in Operating Syst. & Computer Arch. *Aug 2020 - May 2021*
Department of Computer Sciences, UW–Madison *Madison, WI, USA*

Teaching Asst. in Operating Syst., Computer Arch., & Discrete Math. *Mar 2018 - Apr 2019*
School of Information Science & Technology, ShanghaiTech University *Shanghai, China*

PRIZES & AWARDS

- Outstanding Research Award, CSST Program, UCLA *Sep 2019*
- Second Prize, ASC Supercomputing Competition (GeekPie_HPC team leader) *Mar 2019*
- Outstanding Teaching Assistant Award, ShanghaiTech University *Jan 2019*
- Meritorious Winner, Mathematical Contest in Modelling (MCM) *Apr 2018*