GUANZHOU HU

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EDUCATION

University of Wisconsin—Madison *Aug 2020 - Present*
Ph.D. Student, Computer Science *Madison, WI, USA*

- GPA: 4.0 / 4.0
- Advised by Prof. Andrea Arpaci-Dusseau and Prof. Remzi Arpaci-Dusseau
- Research area: Distributed storage systems, Operating systems, File systems
- Current focus: Distributed consensus protocols and Database transaction processing
- Relevant coursework: Advanced Operating Systems, Advanced Distributed Systems

ShanghaiTech University *Sep 2016 - Jul 2020*
B. Eng., Computer Science & Technology *Shanghai, China*

- GPA: 3.9 / 4.0
- Honors: President's Scholarship (2017, 2018), Dean's Scholarship (2019)
- Relevant coursework: Operating systems, Computer architecture III, Parallel computing

Massachusetts Institute of Technology *Sep 2019 - Jun 2020*
Special Student Program, Electrical Engineering & Computer Science *Cambridge, MA, USA*

- GPA: 4.0 / 4.0
- Relevant coursework: Distributed systems, Computer networks, Computer systems security

PUBLICATIONS & PATENTS

MEFS: 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). USENIX Association.

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). USENIX Association.

Dorylus: Affordable, Scalable, and Accurate GNN Training over Billion-Edge Graphs. 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). USENIX Association.

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.

A Storage System Management Policy Based on Data Content Locality. Yin, S. and Hu, G. 2019. CN. Patent number ZL 2019 1 0499391.9, licensed November 25, 2022.

RESEARCH EXPERIENCE

Exploring Distributed Consensus Protocols & Implications on Storage *Sep 2022 - Present*
Ph.D. Student, UW-Madison, with Prof. Andrea & Remzi Arpaci-Dusseau *Madison, WI, USA*

- Ongoing Ph.D. research at UW-Madison Advanced Systems Lab.

Non-Hierarchical Caching on Modern Storage Devices *Aug 2020 - Sep 2022*
Ph.D. Student, UW-Madison, with Prof. Andrea & Remzi Arpaci-Dusseau *Madison, WI, USA*

- Implemented non-hierarchical caching (NHC), an adaptive in-kernel block cache admission policy for modern storage hierarchies involving ultra-fast, low-latency SSDs and Optane SSDs, and achieved up to 1.5x throughput improvement.

Scalable & Affordable GCNs with Serverless Computing *Jul 2019 - Oct 2019*
CSST Research Intern, UCLA, with Prof. Harry Xu *Los Angeles, CA, USA*

- Integrated serverless computing into graph processing to build an affordable, efficient, and scalable graph convolutional networks (GCNs) computation platform without dedicated GPUs.
- Implemented the first workable prototype with AWS Lambda service, and reached linear scalability and elastic cost-efficiency.

Active I/O: Building a Parallel Content-Aware File System *Jan 2019 - Aug 2019*
Research Assistant, ShanghaiTech, with Prof. Shu Yin *Shanghai, China*

- Designed a high-performance, parallel file system which digs out the "content locality" within highly-structured data formats, by smart clustering of data by topics.
- Tested with Robot Operating System bag files, and achieved 6.5x performance improvement on opening and at least 1.4x on reading.

TEACHING EXPERIENCE

Teaching Assistant in Operating Systems *Jan 2021 - May 2021*
CS537, Computer Sciences Department, UW-Madison *Madison, WI, USA*

Teaching Assistant in Computer Architecture *Aug 2020 - Dec 2020*
CS552, Computer Sciences Department, UW-Madison *Madison, WI, USA*

Teaching Assistant in Computer Architecture *Feb 2019 - Apr 2019*
CS110, School of Information Science & Technology, ShanghaiTech *Shanghai, China*

Teaching Assistant in Operating Systems *Sep 2018 - Jan 2019*
CS130, School of Information Science & Technology, ShanghaiTech *Shanghai, China*

Teaching Assistant in Discrete Mathematics *Mar 2018 - Jul 2018*
SI120, School of Information Science & Technology, ShanghaiTech *Shanghai, China*

PRIZES & AWARDS

Outstanding Research Award, CSST Program 2019, UCLA *Sep 2019*

Second Class Prize, ASC Supercomputing Competition 2019 (GeekPie_HPC team leader) *Mar 2019*

Outstanding Teaching Assistant Award, ShanghaiTech University *Jan 2019*

Meritorious Winner, Mathematical Contest in Modelling (MCM) 2018 *Apr 2018*

MISCELLANEOUS

- **Skills**: System programming, C/C++, Rust, Go, Python, Linux dev/ops, x86, TLA+
- **Languages**: English (fluent), Chinese (native)