

REMZI H. ARPACI-DUSSEAU

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Education

- Computer Science Division, University of California, Berkeley 1993–1999
Ph.D., December 1999. *Performance Availability for Networks of Workstations*
M.S., May 1996. *Communication Behavior of a Distributed Operating System*
Advisor: David A. Patterson
- Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor 1989–1993
B.S. in Computer Engineering, *Summa cum laude*

Professional Experience

- Chair of Computer Sciences, University of Wisconsin–Madison 2019–2023
Professor of Computer Sciences (courtesy appt. with ECE), University of Wisconsin–Madison 2009–present
Visiting Scientist, Google, Mountain View 2014–2015
Visiting Professor, Stanford University 2014–2015
Visiting Professor, EPFL, Lausanne Summer 2010
Visiting Professor, University of Michigan, Ann Arbor 2006–2007
Associate Professor of Computer Sciences, University of Wisconsin–Madison 2006–2009
Assistant Professor of Computer Sciences, University of Wisconsin–Madison 2000–2006

Honors and Awards

Research: U.C. Berkeley Computer Science Department Distinguished Alumnus ('23), AAAS Fellow ('23), Vilas Distinguished Achievement Professor ('22), FAST Test of Time ('22), ACM Fellow ('20), ACM SIGOPS Mark Weiser Award ('18), Grace Wahba Professor of Computer Sciences (since Fall '18), FAST Best Paper Award ('20, '18, '17, '13, '11, '10, '09, '08, '04), EuroSys Best Paper Award ('14), SOSP Best Paper Award ('11), USENIX ATC Best Paper Award ('09), NetApp Faculty Fellowship ('23, '18, '11, '09), IBM Faculty Partner Award ('03).

Teaching: UW-Madison Chancellor's Distinguished Teaching Award ('16), SACM Student's Choice Professor of the Year ('18, '16, '13, '11, '10, '09, '00), Division of University Housing Honored Instructor Award ('11), SACM Student's Choice Professor of the Year Runner-up ('03, '02, '01), Carolyn Rosner Excellent Educator Award ('11).

Other: MinuteSort World Record ('97, '98), Datamation World Record ('97, '98, '01–present).

Professional Activities

Program Chair/Editor: SOSP '19 (with Y.Y. Zhou), SOCC '14 (with Johannes Gehrke), Associate Editor for ACM TOCS ('14–'18), OSDI '10 (with Brad Chen), FAST '07 (with A. Arpaci-Dusseau). USENIX ATC '04 (with A. Arpaci-Dusseau).

Program Committees: FAST ('17, '14, '09, '03), OSDI ('14, '12, '08), SOSP ('17), USENIX ('09) Systor ('15, '13), NVMWS ('14), SOCC ('13), DSN ('12), NSDI ('11), HotStorage ('11), SPEED ('08), HPDC ('06, '05, '04, '03), VLDB ('04, '01).

Other Committees: FAST Steering '08–'18, OSDI Steering '10, '11, '12, '20, FAST Test of Time Award Chair '11, '12, '13, NSF Committee of Visitors (CISE CNS) '09,

Refereed Publications

- [1] Vinay Banakar, Kan Wu, Yuvraj Patel, Kimberly Keeton, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. WiscSort: External Sorting For Byte-Addressable Storage. In *Proceedings of the 49th International Conference on Very Large Databases (VLDB 49)*, Vancouver, Canada, August 2023.
- [2] Suli Yang, Jing Liu, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Principled Schedulability Analysis for Distributed Storage Systems Using Thread Architecture Models. *ACM Transactions on Storage (TOS)*, 19(2), 2023.
- [3] Shawn Zhong, Chenhao Ye, Guanzhou Hu, Suyan Qu, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Michael Swift. MadFS: Per-File Virtualization for Userspace Persistent Memory Filesystems. In *Proceedings of the USENIX Annual Technical Conference (USENIX ATC '23)*, Boston, Massachusetts, February 2023.
- [4] Yuvraj Patel, Chenhao Ye, Akshat Sinha, Abigail Matthews, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Michael M. Swift. Using Tratr to tame Adversarial Synchronization. In *Proceedings of the 31st USENIX Security Symposium (Sec '22)*, Boston, Massachusetts, August 2022.
- [5] Kai Mast, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. LambdaObjects: Re-aggregating Storage and Execution for Cloud Computing. In *The Nineteenth Workshop on Hot Topics in Operating Systems (HotOS XIX)*, Providence, Rhode Island, June 2022.
- [6] Kan Wu, Kaiwei Tu, Yuvraj Patel, Rathijit Sen, Kwanghyun Park, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. NyxCache: Flexible and Efficient Multi-tenant Persistent-Memory Caching. In *Proceedings of the 20th USENIX Conference on File and Storage Technologies (FAST '22)*, Santa Clara, California, February 2022.
- [7] Youmin Chen, Xiangyao Yu, Paraschos Koutris, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Jiwu Shu. Plor: General Transactions with Predictable, Low Tail Latency. In *Proceedings of the 2022 ACM SIGMOD International Conference on Management of Data (SIGMOD '22)*, Philadelphia, Pennsylvania, June 2022.
- [8] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Strong and Efficient Consistency with Consistency-aware Durability. *ACM Transactions on Storage (TOS)*, 17(1), 2021.
- [9] Anthony Rebello, Yuvraj Patel, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Can Applications Recover from fsync Failures? *ACM Transactions on Storage (TOS)*, 17(2), 2021.
- [10] Youmin Chen, Youyou Lu, Bohong Zhu, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Jiwu Shu. Scalable Persistent Memory File System with Kernel-Userspace Collaboration. In *Proceedings of the 19th USENIX Conference on File and Storage Technologies (FAST '21)*, Virtual, February 2021.
- [11] Kan Wu, Zhihan Guo, Guanzhou Hu, Kaiwei Tu, Ramnatthan Alagappan, Rathijit Sen, Kwanghyun Park, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. The Storage Hierarchy is Not a Hierarchy: Optimizing Caching on Modern Storage Devices with Orthus. In *Proceedings of the 19th USENIX Conference on File and Storage Technologies (FAST '21)*, Virtual, February 2021.
- [12] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Exploiting Nil-Externality for Fast Replicated Storage. In *Proceedings of the 28th ACM Symposium on Operating Systems Principles (SOSP '21)*, Virtual, October 2021.
- [13] Jing Liu, Anthony Rebello, Yifan Dai, Chenhao Ye, Sudarsun Kannan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Scale and Performance in a Filesystem Semi-Microkernel. In *Proceedings of the 28th ACM Symposium on Operating Systems Principles (SOSP '21)*, Virtual, October 2021.
- [14] Yifan Dai, Yien Xu, Aishwarya Ganesan, Ramnatthan Alagappan, Brian Kroth, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. From WiscKey to Bourbon: A Learned Index for Log-Structured Merge Trees. In *Proceedings of the 14th Symposium on Operating Systems Design and Implementation (OSDI '20)*, Virtual, November 2020.

- [15] Anthony Rebello, Yuvraj Patel, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Can Applications Recover from fsync Failures? In *Proceedings of the USENIX Annual Technical Conference (USENIX ATC '20)*, Boston, Massachusetts (Online), July 2020.
- [16] Yuvraj Patel, Leon Yang, Leo Arulraj, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Michael M. Swift. Avoiding Scheduler Subversion using Scheduler-Cooperative Locks. In *Proceedings of the EuroSys Conference (EuroSys '20)*, Heraklion, Greece (Online), April 2020.
- [17] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Strong and Efficient Consistency with Consistency-Aware Durability. In *Proceedings of the 18th USENIX Conference on File and Storage Technologies (FAST '20)*, Santa Clara, California, February 2020.
- [18] Jun He, Kan Wu, Sudarsun Kannan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Read as Needed: Building WiSER, a Flash-Optimized Search Engine. In *Proceedings of the 18th USENIX Conference on File and Storage Technologies (FAST '20)*, Santa Clara, California, February 2020.
- [19] Ibrahim Kettaneh, Ahmed Alquraan, Hatem Takturi, Suli Yang, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Samer Al-Kiswany. The Network-Integrated Storage System. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, August 2019.
- [20] Sudarsun Kannan, Nitish Bhat, Ada Gavrilovska, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Redesigning LSMs for Nonvolatile Memory with NoveLSM. NVMW '19, March 2019.
- [21] Sudarsun Kannan, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, Yuangang Wang, Jun Xu, and Gopinath Palani. Designing a True Direct-Access File System with DevFS. NVMW '19, March 2019.
- [22] Jing Liu, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Sudarsun Kannan. File Systems as Processes. HotStorage '19, July 2019.
- [23] Kan Wu, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Towards an Unwritten Contract of Intel Optane SSD. HotStorage '19, July 2019.
- [24] Kan Wu, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, Rathijit Sen, and Kwanghyun Park. Exploiting Intel Optane SSD for Microsoft SQL Server. DaMoN '19, July 2019.
- [25] Suli Yang, Jing Liu, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Principled Schedulability Analysis for Distributed Storage Systems using Thread Architecture Models. In *Proceedings of the 13th Symposium on Operating Systems Design and Implementation (OSDI '18)*, San Diego, California, October 2018.
- [26] Ramnatthan Alagappan, Aishwarya Ganesan, Jing Liu, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. Fault-Tolerance, Fast and Slow: Exploiting Failure Asynchrony in Distributed Systems. In *Proceedings of the 13th Symposium on Operating Systems Design and Implementation (OSDI '18)*, San Diego, California, October 2018.
- [27] Edward Oakes, Leon Yang, Dennis Zhou, Kevin Houck, Tyler Harter, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. SOCK: Rapid task provisioning with serverless-optimized containers. In *USENIX Annual Technical Conference (USENIX ATC '18)*, Boston, MA, 2018.
- [28] Sudarsun Kannan, Nitish Bhat, Ada Gavrilovska, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. Redesigning lsms for nonvolatile memory with novelsm. In *USENIX Annual Technical Conference (USENIX ATC '18)*, Boston, MA, 2018. USENIX Association.
- [29] Eunji Lee, Youil Han, Suli Yang, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. How to teach an old file system dog new object store tricks. In *10th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '18)*, Boston, MA, 2018.
- [30] Zev Weiss, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Denssefs: a cache-compact filesystem. In *10th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '18)*, Boston, MA, 2018.

- [31] Yuvraj Patel, Mohit Verma, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Revisiting concurrency in high-performance nosql databases. In *10th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '18)*, Boston, MA, 2018.
- [32] Remzi H. Arpaci-Dusseau, Andrea Arpaci-Dusseau, and Venkat Venkataramani. Cloud-native file systems. In *10th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud '18)*, Boston, MA, 2018.
- [33] Jun He, Sudarsun Kannan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. The Unwritten Contract of Solid State Drives. The 9th Non-Volatile Memories Workshop (NVMW '18), March 2018.
- [34] Sudarsun Kannan, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, Yuangang Wang, Jun Xu, and Gopinath Palani. Designing a True Direct-Access File System with DevFS. In *Proceedings of the 16th USENIX Conference on File and Storage Technologies (FAST '18)*, Oakland, California, February 2018.
- [35] Ramnatthan Alagappan, Aishwarya Ganesan, Eric Lee, Aws Albarghouthi, Vijay Chidambaram, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Protocol-Aware Recovery for Consensus-Based Storage. In *Proceedings of the 16th USENIX Conference on File and Storage Technologies (FAST '18)*, Oakland, California, February 2018.
- [36] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Redundancy Does Not Imply Fault Tolerance: Analysis of Distributed Storage Reactions to File-System Faults. *ACM Transactions on Storage (TOS)*, 13(3), September 2017.
- [37] Thanumalayan Sankaranarayana Pillai, Ramnatthan Alagappan, Lanyue Lu, Vijay Chidambaram, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Application crash consistency and performance with ccfs. *ACM Transactions on Storage (TOS)*, 13(3), September 2017.
- [38] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Redundancy Does Not Imply Fault Tolerance: Analysis of Distributed Storage Reactions to Single Errors and Corruptions. *login: The USENIX Magazine*, 42(2), 2017.
- [39] Samer Al-Kiswany, Suli Yang, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. NICE: Network-Integrated Cluster-Efficient Storage. In *The 26th International Symposium on High Performance Parallel and Distributed Computing (HPDC '17)*, June 2017.
- [40] Leo Arulraj, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Improving Virtualized Storage Performance with Sky. In *Proceedings of the 13th ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments, VEE '17*, pages 112–128, 2017.
- [41] Jun He, Sudarsun Kannan, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. The Unwritten Contract of Solid State Drives. In *Proceedings of the EuroSys Conference (EuroSys '17)*, Belgrade, Serbia, April 2017.
- [42] Lanyue Lu, Thanumalayan Sankaranarayana Pillai, Hariharan Gopalakrishnan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. WiscKey: Separating Keys from Values in SSD-Conscious Storage. *ACM Transactions on Storage (TOS)*, 13(1), March 2017.
- [43] Thanumalayan Sankaranarayana Pillai, Ramnatthan Alagappan, Lanyue Lu, Vijay Chidambaram, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Application Crash Consistency and Performance with CCFS. In *Proceedings of the 15th USENIX Conference on File and Storage Technologies (FAST '17)*, Santa Clara, California, February 2017.
- [44] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Redundancy Does Not Imply Fault Tolerance: Analysis of Distributed Storage Reactions to Single Errors and Corruptions. In *Proceedings of the 15th USENIX Conference on File and Storage Technologies (FAST '17)*, Santa Clara, California, February 2017.

- [45] Ramnatthan Alagappan, Aishwarya Ganesan, Yuvraj Patel, Thanumalayan Sankaranarayana Pillai, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Correlated Crash Vulnerabilities. In *Proceedings of the 12th Symposium on Operating Systems Design and Implementation (OSDI '16)*, Savannah, Georgia, November 2016.
- [46] Scott Hendrickson, Stephen Sturdevant, Tyler Harter, Venkateshwaran Venkataramani, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Serverless Computation with OpenLambda. In *The Eighth USENIX Workshop on Hot Topics in Cloud Computing (HotCloud'16)*, Denver, Colorado, June 2016.
- [47] Suli Yang, Kiran Srinivasan, Kishore Udayashankar, Swetha Krishnan, Jingxin Feng, Yupu Zhang, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Tombolo: Performance Enhancements for Cloud Storage Gateways. In *Proceedings of the 32nd IEEE Conference on Massive Data Storage (MSST '16)*, Santa Clara, California, June 2016.
- [48] Ivo Jimenez, Carlos Maltzahn, Jay F. Lofstead, Adam Moody, Kathryn Mohror, Remzi H. Arpaci-Dusseau, and Andrea C. Arpaci-Dusseau. Characterizing and Reducing Cross-Platform Performance Variability Using OS-Level Virtualization. IPDPS Workshop '16, 2016.
- [49] Lanyue Lu, Thanumalayan Sankaranarayana Pillai, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. WiscKey: Separating Keys from Values in SSD-conscious Storage. In *Proceedings of the 14th USENIX Conference on File and Storage Technologies (FAST '16)*, Santa Clara, California, February 2016.
- [50] Tyler Harter, Brandon Salmon, Rose Liu, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Slacker: Fast Distribution with Lazy Docker Containers. In *Proceedings of the 14th USENIX Conference on File and Storage Technologies (FAST '16)*, Santa Clara, California, February 2016.
- [51] Suli Yang, Tyler Harter, Nishant Agrawal, Salini Selvaraj Kowsalya, Anand Krishnamurthy, Samer Al-Kiswany, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Split-Level I/O Scheduling. In *Proceedings of the 25th ACM Symposium on Operating Systems Principles (SOSP '15)*, Monterey, California, October 2015.
- [52] Zev Weiss, Sriram Subramanian, Swaminathan Sundararaman, Vinay Sridhar, Nisha Talagala, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Mjolnir: Collecting Trash in a Demanding New World. In *Interactions of NVM/Flash with Operating-Systems and Workloads (INFLOW '15)*, Monterey, California, October 2015.
- [53] Ramnatthan Alagappan, Vijay Chidambaram, Thanumalayan S. Pillai, Aws Albarghouthi, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Beyond Storage APIs: Provable Semantics for Storage Stacks. In *The Fifteenth Workshop on Hot Topics in Operating Systems (HotOS XV)*, Kartause Ittingen, Switzerland, May 2015.
- [54] Yiyang Zhang, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Removing the Costs and Retaining the Benefits of Flash-Based SSD Virtualization with FSDV. In *Proceedings of the 31st IEEE Conference on Massive Data Storage (MSST '15)*, Santa Clara, California, May 2015.
- [55] Thanumalayan Sankaranarayana Pillai, Vijay Chidambaram, Ramnatthan Alagappan, Samer Al-Kiswany, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Crash Consistency: Rethinking the Fundamental Abstractions of the File System. *ACM Queue*, 13(7), July 2015.
- [56] Thanumalayan Sankaranarayana Pillai, Vijay Chidambaram, Ramnatthan Alagappan, Samer Al-Kiswany, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Crash Consistency. *Communications of the ACM*, 58(10), October 2015.
- [57] Zev Weiss, Sriram Subramanian, Swaminathan Sundararaman, Nisha Talagala, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. ANViL: Advanced Virtualization for Modern Non-Volatile Memory Devices. In *Proceedings of the 13th USENIX Conference on File and Storage Technologies (FAST '15)*, Santa Clara, California, February 2015.

- [58] Jun He, Duy Nguyen, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Reducing File System Tail Latencies with Chopper. In *Proceedings of the 13th USENIX Conference on File and Storage Technologies (FAST '15)*, Santa Clara, California, February 2015.
- [59] Sriram Subramanian, Swaminathan Sundararaman, Nisha Talagala, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Snapshots in a Flash with ioSnap. In *Proceedings of the EuroSys Conference (EuroSys '14)*, Amsterdam, Netherlands, April 2014.
- [60] Thanumalayan Sankaranarayana Pillai, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Fractured Processes: Adaptive, Fine-Grained Process Abstractions. In *Proceedings of the 2014 Conference on Timely Results in Operating Systems (TRIOS '14)*, Broomfield, Colorado, October 2014.
- [61] Thanumalayan Sankaranarayana Pillai, Vijay Chidambaram, Ramnathan Alagappan, Samer Al-Kiswany, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. All File Systems Are Not Created Equal: On the Complexity of Crafting Crash-Consistent Applications. In *Proceedings of the 11th Symposium on Operating Systems Design and Implementation (OSDI '14)*, Broomfield, Colorado, October 2014.
- [62] Lanyue Lu, Yupu Zhang, Thanh Do, Samer Al-Kiswany, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Physical Disentanglement in a Container-Based File System. In *Proceedings of the 11th Symposium on Operating Systems Design and Implementation (OSDI '14)*, Broomfield, Colorado, October 2014.
- [63] Tyler Harter, Dhruva Borthakur, Siying Dong, Amitanand Aiyer, Liyin Tang, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Analysis of HDFS Under HBase: A Facebook Messages Case Study. In *Proceedings of the 12th USENIX Symposium on File and Storage Technologies (FAST '14)*, Santa Clara, California, February 2014.
- [64] Lanyue Lu, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Shan Lu. A Study of Linux File System Evolution. *ACM Transactions on Storage*, 10(1), Feb 2014.
- [65] Ao Ma, Chris Dragg, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. ffsck: The Fast File System Checker. *ACM Transactions on Storage*, 10(1), Feb 2014.
- [66] Vijay Chidambaram, Thanumalayan Sankaranarayana Pillai, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Optimistic Crash Consistency. In *Proceedings of the 24th ACM Symposium on Operating Systems Principles (SOSP '13)*, Nemacon Woodlands Resort, Farmington, Pennsylvania, October 2013.
- [67] Zev Weiss, Tyler Harter, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. ROOT: Replaying Multi-threaded Traces with Resource-Oriented Ordering. In *Proceedings of the 24th ACM Symposium on Operating Systems Principles (SOSP '13)*, Nemacon Woodlands Resort, Farmington, Pennsylvania, October 2013.
- [68] Lanyue Lu, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, and Shan Lu. A Study of Linux File System Evolution. *login: The USENIX Magazine*, 38(3), June 2013.
- [69] Yupu Zhang, Chris Dragg, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. StrongBox: Towards Reliability and Consistency in Cloud-Based File Synchronization Services. In *5th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '13)*, San Jose, CA, June 2013.
- [70] Lanyue Lu, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Fault Isolation And Quick Recovery in Isolation File Systems. In *5th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '13)*, San Jose, CA, June 2013.
- [71] Yupu Zhang, Daniel S. Myers, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Zettabyte Reliability with Flexible End-to-end Data Integrity. In *Proceedings of the 29th IEEE Conference on Massive Data Storage (MSST '13)*, Long Beach, California, May 2013.
- [72] Yiying Zhang, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau. Warped Mirrors for Flash. In *Proceedings of the 29th IEEE Conference on Massive Data Storage (MSST '13)*, Long Beach, California, May 2013.

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- [74] Mohit Saxena, Yiyang Zhang, Michael M. Swift, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Getting Real: Lessons in Transitioning Research Simulations into Hardware Systems. In *Proceedings of the 11th USENIX Symposium on File and Storage Technologies (FAST '13)*, San Jose, California, February 2013.
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- [77] Thanh Do, Tyler Harter, Yingchao Liu, Haryadi S. Gunawi, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. HARDFS: Hardening HDFS with Selective and Lightweight Versioning. In *Proceedings of the 11th USENIX Symposium on File and Storage Technologies (FAST '13)*, San Jose, California, February 2013.
- [78] Nitin Agrawal, Leo Arulraj, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Emulating Goliath Storage Systems with David. *ACM Transactions on Storage*, 7(4), Jan 2012.
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Patents

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- [2] Muthian Sivathanu, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Computer Storage Device Providing Implicit Detection of Block Liveness. U.S. Patent No. 7,536,521, May 2007. Granted July, 2009.

Invited Lectures and Presentations

- [1] Systems Fundamentals: It's Still About Caching. University of Illinois-ECE Distinguished Lecture, April 2023.
- [2] 25 Years of Storage Research and Education: A Retrospective. Iowa State Distinguished Lecture, April 2022.
- [3] 25 Years of Storage Research and Education: A Retrospective. FAST '22 Keynote, February 2022.
- [4] Storage Systems: Then and Now. *Keynote at POEM '21*, November 2021.
- [5] Storage Systems: Then and Now. *Distinguished Seminar at Yale*, November 2021.
- [6] Measure, Then Build. *Keynote at USENIX Annual Technical Conference*, July 2019.
- [7] Measure, Then Build. *Distinguished Lecture at Penn State University*, January 2019.
- [8] Measure, Then Build. *Keynote at MASCOTS '18*, September 2018.
- [9] Isolation in the Datacenter. *Invited Lecture at U. Chicago*, November 2016.
- [10] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Data@Scale Event*, June 2016.
- [11] Your Storage Is Broken. *Invited Talk at Huawei*, May 2016.
- [12] Isolation in the Datacenter. *Distinguished Lecture at Purdue*, November 2015.
- [13] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Pure Storage*, June 2015.
- [14] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at EMC*, June 2015.
- [15] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Datos*, June 2015.
- [16] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Facebook*, June 2015.
- [17] Performance vs. Correctness in the Local Storage Stack. *Keynote at Veritas Internal Conference*, May 2015.
- [18] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Infosys*, May 2015.
- [19] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Cloudera*, April 2015.
- [20] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Nutanix*, April 2015.
- [21] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at Meraki*, April 2015.
- [22] Performance vs. Correctness in the Local Storage Stack. *Invited Talk at U.C. San Diego*, February 2015.
- [23] The Application/Storage Interface: We're Still Doing It Wrong. *Keynote at HotStorage '14*, June 2014.
- [24] Crash Consistency and the Cloud. *Invited Talk at IBM T.J. Watson Labs*, June 2013.
- [25] Crash Consistency and the Cloud. *Invited Talk at NEC Labs*, June 2013.
- [26] The Write Stuff. *Invited Talk at University of Minnesota*, May 2013.
- [27] The Write Stuff. *Invited Talk at Seagate*, May 2013.
- [28] The Write Stuff. *Invited Talk at Stonybrook*, March 2013.
- [29] Software-defined Storage Systems. *Invited Talk at VMware*, September 2012.
- [30] Software-defined Storage Systems. *Invited Talk at Google (Madison)*, September 2012.

- [31] Software-defined Storage Systems. *Invited Talk at EMC*, July 2012.
- [32] Software-defined Storage Systems. *Invited Talk at Cloudera*, July 2012.
- [33] Software-defined Storage Systems. *Invited Talk at VMware*, July 2012.
- [34] Five Years of Reliability Research. *Invited Talk at Apple*, August 2012.
- [35] Trust in the Storage Stack. *Keynote at SYSTOR '12*, June 2012.
- [36] Trust in the Storage Stack. *Invited Talk at Fusion-IO*, February 2012.
- [37] Five Years of Reliability Research. *Invited Talk at U.C. Berkeley*, December 2010.
- [38] Five Years of Reliability Research. *Distinguished Lecture at Illinois*, October 2010.
- [39] Five Years of Reliability Research. *Invited Talk at EPFL*, June 2010.
- [40] Five Years of Reliability Research. *Invited Talk at Google (Seattle)*, September 2010.
- [41] The Next Great Systems Language. *Keynote at NSF Workshop on Future Directions in Computer Systems Research*, March 2010.
- [42] Five Years of Reliability Research. *Invited Talk @ facebook*, February 2010.
- [43] Five Years of Reliability Research. *Invited Talk at Columbia*, April 2010.
- [44] Five Years of Reliability Research. *Invited Talk at Purdue*, February 2010.
- [45] Five Years of Reliability Research. *Invited Talk at Northwestern*, March 2010.
- [46] Removing the Costs of Flash Indirection with Nameless Writes. *HotStorage '10*, June 2010.
- [47] Systems Research: Past and Future. *Google (Madison)*, August 2009.
- [48] Wisconsin HaRD. *NSF HECURA Meeting*, August 2009.
- [49] File Systems Are Broken. *Microsoft Invited Seminar*, June 2009.
- [50] An Overview of Storage Research at Wisconsin. *IBM Almaden Tech Talk*, February 2009.
- [51] On Reliability. *NSF HECURA Meeting*, August 2008.
- [52] An Overview of Storage Research at Wisconsin. *Symantec Tech Talk*, October 2008.
- [53] Declarative File System Checking. *Network Appliance Tech Talk*, September 2008.
- [54] File Systems Are Broken. *Invited Talk: Waterloo Database Seminar*, November 2007.
- [55] The Wisconsin PASS Project. *NSF HECURA Meeting*, August 2007.
- [56] Beyond IRON File Systems. *Invited Talk: SUNY-Stonybrook Systems Seminar*, May 2007.
- [57] Beyond IRON File Systems. *Invited Talk: Cornell Systems Seminar*, April 2007.
- [58] Making Beautiful Graphs with Zplot. *14th Annual Tcl Workshop*, September 2007.
- [59] IRON File Systems. *Network Appliance Technical Talk*, November 2006.
- [60] IRON File Systems. *Carnegie Mellon University (Systems Seminar)*, February 2006.
- [61] Living in a Layered World. *Invited Lecture at Network Appliance*, August 2005.

- [62] Predictable Computing Systems. *NSF Grand Challenge Workshop*, September 2005.
- [63] Improving Availability with D-GRAID. *Invited Lecture at SNIA CIFS Conference*, August 2005.
- [64] IRON File Systems. *Distinguished Lecture at Florida International University*, April 2005.
- [65] An Overview of Autonomic Computing. *Workshop on Storage Devices and Systems*, April 2004.
- [66] Autonomic Computing: Research Directions. *Workshop on Storage Devices and Systems*, April 2004.
- [67] Semantically-smart Disk Systems. *Carnegie Mellon University*, May 2003.
- [68] Knowledge is Power. *HP Research Labs*, April 2003.
- [69] Knowledge is Power. *IBM Almaden Research Lab (Off-site Retreat)*, April 2003.
- [70] Semantically-smart Disk Systems. *Second Annual Conference on File And Storage Technologies (FAST '03)*, March 2003.
- [71] Semantically-Smart Disk Systems. *University of Michigan Systems Seminar*, November 2002.
- [72] Semantically-Smart Disk Systems. *Joint Duke/North Carolina Systems Seminar*, October 2002.
- [73] Informed File Systems. *IBM Almaden Research Lab*, June 2002.
- [74] Storage Research at Wisconsin. *IBM Almaden Research Lab*, April 2001.
- [75] Fail-Stutter Fault Tolerance. *Workshop on Hot Topics in Operating Systems (HotOS 8)*, May 2001.
- [76] Manageable Storage via Adaptation in WiND. *International Symposium on Cluster Computing and the Grid (CC-Grid'2001)*, April 2001.
- [77] Performance Issues in Component-Based Systems. *National Storage Industries Council*, May 1999.
- [78] Cluster I/O with River: Making the Fast Case Common. *IOPADS '99*, May 1999.
- [79] Consistent versus Peak Performance: Challenges in Cluster I/O. *Hewlett-Packard Laboratories*, February 1998.
- [80] The Architectural Costs of Streaming I/O: A Comparison of Workstations, Clusters, and SMPs. *HPCA '98*, February 1998.
- [81] Searching for the Sorting Record: Experiences in Tuning NOW-Sort. *SPDT '98*, August 1998.
- [82] High-Performance Sorting on Networks of Workstations. *SIGMOD '97, IBM Almaden Research Center*, May 1997.
- [83] Empirical Evaluation of the CRAY-T3D: A Compiler Perspective. *ISCA-22*, June 1995.

Research Funding and Equipment Grants

- [1] Remzi H. Arpaci-Dusseau. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2022. *\$328,000*.
- [2] Remzi H. Arpaci-Dusseau. NetApp Research Grant. Next-generation Storage Systems, 2023. *\$110,000*.
- [3] Remzi H. Arpaci-Dusseau and Jignesh Patel. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2022. *\$328,000*.
- [4] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Research Gift. Distributed Storage Research (Seagate), 2020. *\$50,000. Cash Donation*.
- [5] Remzi H. Arpaci-Dusseau and Jignesh Patel. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2021. *\$328,000*.
- [6] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Research Gift. Blockchain Research (Facebook), 2020. *\$50,000. Cash Donation*.
- [7] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Research Gift. Optane Research (Intel), 2020. *\$50,000. Cash Donation*.
- [8] Remzi H. Arpaci-Dusseau and Jignesh Patel. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2020. *\$328,000*.
- [9] Remzi H. Arpaci-Dusseau and Jignesh Patel. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2019. *\$328,000*.
- [10] Remzi Arpaci-Dusseau, Aditya Akella, Suman Banerjee, Kassem Fawaz, and Shiv Venkataraman. ECDI: Computation, Communication, and Storage Infrastructure For The Roaming Edge. NSF/VMware Research Grant, 2018. *\$3,000,000.00*.
- [11] Aditya Akella, Mike Swift, and Andrea Arpaci-Dusseau. Security and Isolation in the Era of Microservices. NSF Research Grant, 2018. *\$1,200,000.00*. R. Arpaci-Dusseau is senior personnel.
- [12] Remzi H. Arpaci-Dusseau and Jignesh Patel. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2018. *\$328,000*.
- [13] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Research Gift. NetApp Gift, 2018. *\$50,000. Cash Donation*.
- [14] Remzi H. Arpaci-Dusseau and Jignesh Patel. Microsoft Research Grant. Grant from Microsoft Through Gray Systems Laboratory, 2017. *\$328,000*.
- [15] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Research Gift. VMWare Gift, 2016. *\$72,000. Cash Donation*.
- [16] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Research Gift. Huawei Research Gift, 2016. *\$100,000. Cash Donation*.
- [17] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Matthew Curry, and Nathan DeBardeleben. Modeling Reliability in Storage Systems. DOE Grant, 2016. *\$1,350,000*.
- [18] Robert Ricci, Brig Chip Elliott, Michael Zink, Kuang-Ching Wang, and Srinivasa Akella. CloudLab: Flexible Scientific Infrastructure to Support Fundamental Advances in Cloud Architectures and Applications. NSF Research Grant, 2014. *\$10,000,000.00*.

- [19] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). EMC Research Gift, 2014. *\$50,000. Cash Donation.*
- [20] Remzi H. Arpaci-Dusseau. CSR:CC:Small:Application-Level Consistency for Cloud-based Computing. NSF CSR Research Grant, 2014. *\$499,753.00.*
- [21] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). NetApp Research Gift, 2014. *\$100,000. Cash Donation.*
- [22] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Storage Research. Research Grant, 2014. *\$150,000. Research Grant.*
- [23] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Storage Research. Huawei Research Gift, 2014. *\$136,000. Cash Donation.*
- [24] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Storage Research. Research Grant, 2014. *\$80,000. Research Grant.*
- [25] Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Storage Research. Research Grant, 2014. *\$80,000. Research Grant.*
- [26] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). VMware Research Gift, 2013. *\$50,000. Cash Donation.*
- [27] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). NetApp Research Gift, 2013. *\$100,000. Cash Donation.*
- [28] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). Facebook Research Gift, 2013. *\$75,000. Cash Donation.*
- [29] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). Huawei Research Gift, 2013. *\$50,000. Cash Donation.*
- [30] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). Fusion-io Research Gift, 2013. *\$50,000. Cash Donation.*
- [31] Remzi H. Arpaci-Dusseau, Andrea C. Arpaci-Dusseau, Aditya Akella, Paul Barford, Somesh Jha, Tom Ristenpart, and Michael Swift. Wisconsin Institute on Software-defined Datacenters Of Madison (WISDOM). EMC Research Gift, 2012. *\$50,000. Cash Donation.*
- [32] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. The Wisconsin Specialized Support for Storage Clouds (WiS3C) Project. NSF CSR Research Grant, 2012. *\$440,000.00.*
- [33] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Mobile Storage Workloads: Analysis and Storage-System Support. Sandia National Laboratories Research Grant, 2012. *\$100,000.*
- [34] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Wisconsin Next Generation Benchmarks (WiNG). NSF CSR Research Grant, 2010. *\$499,440.00.*

- [35] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. HDFS Security Analysis. Sandia National Laboratories Research Grant, 2010. *\$50,000*.
- [36] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Wisconsin HaRD. Network Appliance Faculty Fellowship, 2009. *\$40,000. Cash Donation*.
- [37] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Wisconsin HaRD: Hierarchically-Decoupled, Redundant Storage. Google Research Gift, 2009. *\$50,000. Cash Donation*.
- [38] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Wisconsin HaRD: Hierarchically-Decoupled, Redundant Storage. NSF HECURA Grant, 2009. *\$680,000*.
- [39] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Declarative File System Checking. Network Appliance Research Gift, 2009. *\$45,000. Cash Donation*.
- [40] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Wisconsin Arrays in Software Project (WASP). NSF Grant, 2008. *\$420,000*.
- [41] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Wisconsin Lie Detection (LID). NSF Grant, 2008. *\$350,000*.
- [42] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. The RAW Project. Network Appliance Research Gift, 2007. *\$100,000. Cash donation*.
- [43] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Robust Storage Systems. Network Appliance Research Gift, 2006. *\$100,000*.
- [44] Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, Ben Liblit, Miron Livny, and Michael Swift. HEC: Formal Failure Analysis for Storage Systems. NSF HECURA, 2006-2009. *\$951,044*.
- [45] Remzi H. Arpaci-Dusseau, Mark Hill, and David Wood. Sun Machine Donation: Cluster of Machines. Sun Hardware Gift, 2006. *Cluster of machines valued at \$100,000*.
- [46] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. *EMC Centera Storage Research*. EMC Gift, 2005. *\$25,000*.
- [47] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. *EMC Centera Storage Research*. EMC Hardware Donation, 2005. *One Centera machine valued at \$100,000*.
- [48] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. Improving Failure-Handling and Performance of Modern File Systems with Virtual Machine Technology. Network Appliance Research Gift, 2005. *\$25,000*.
- [49] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. CSR-PDOS: Semantic Failure Analysis and Management. NSF CNS Computer Systems, 2005-2008. *\$700,000*.
- [50] Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, Paul Barford, Jeffrey Naughton, and David Dewitt. *EMC Centera Storage Research*. EMC Gift, 2004. *\$100,000*.
- [51] Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau, Paul Barford, Jeffrey Naughton, and David Dewitt. *EMC Centera Storage Research*. EMC Hardware Donation, 2004. *Two Centera machines valued at \$300,000*.
- [52] Remzi Arpaci-Dusseau. *Achieving High Availability Through Semantically-Smart Disk Systems*. IBM Faculty Partner Award, 2003. *\$30,000*.
- [53] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. ITR: NSF-02-168 Wisconsin Semantic Disks (WiSe). NSF ITR Medium Group Grants, 2003-2006. *\$600,000*.

- [54] Juan J. De Pablo, David C. Schwartz, Paul Barford, Miron Livny, Remzi H. Arpaci-Dusseau, Paul M. DeLuca Jr., Robert Jeraj, Sridhara R. Dasu, Francis Halzen, Albrecht Karle, Don Reeder, and Wesley Smith. Acquisition of the GLOW Distributed Computing System at the University of Wisconsin - Madison. NSF MRI, 2003-2006. \$1,186,405.
- [55] Remzi H. Arpaci-Dusseau and Paul Barford. *Storage Research in the WAIL Environment: Equipment*. EMC Systems Donation, 2002. \$700,000 (est.).
- [56] Remzi H. Arpaci-Dusseau and Paul Barford. *Storage Research in the WAIL Environment: Cash Gift*. EMC Cash Donation, 2002. \$30,000.
- [57] Remzi Arpaci-Dusseau. *Self-Managing Storage through Informed Systems*. IBM Faculty Partner Award, 2002. \$30,000.
- [58] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. *Building Operating System Services with Gray-Box Techniques*. HP/Intel Itanium-Based System Grant, 2001. \$129,177.
- [59] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. *Networking Support for Data-Intensive Clusters*. Intel, 2000. \$128,000.
- [60] Remzi H. Arpaci-Dusseau. *The Linux Profiling Infrastructure*. Usenix Undergraduate Research Funding, 2001. \$3,000.
- [61] Ian Foster and Paul Avery. *GriPhyN: Towards Petascale Virtual Datagrids*. NSF ITR/ACS, 2001-2006. \$1,995,546.
- [62] Andrea C. Arpaci-Dusseau and Remzi H. Arpaci-Dusseau. *Manageable Network-Attached Storage Via Adaptation*. NSF OS CCR-0098274, 2001-2004. \$310,000.
- [63] Remzi H. Arpaci-Dusseau. *Robust Adaptive Cluster Programming Environments*. NSF Career CCR-0092840, 2001-2006. \$250,000.

Classes Taught

Undergraduate Operating Systems (CS 537)	Fall 2023 (6.75/7)
Undergraduate Operating Systems (CS 537)	Fall 2022 (6.7/7)
Machine-Learning-Optimized Systems Seminar and Lab (CS 838)	Fall 2021
Edge Computing Laboratory (CS 838)	Fall 2020
Undergraduate Operating Systems (CS 537)	Spring 2018 (6.75/7)
Graduate Distributed Systems (CS 739)	Fall 2017 (6.25/7)
Introduction to Systems (CS 354)	Spring 2017 @ Epic
Graduate Distributed Systems (CS 739)	Fall 2016 (6.17/7)
Undergraduate Operating Systems (CS 537)	Spring 2016 (6.92/7)
Graduate Distributed Systems (CS 739)	Fall 2015 (4.50)
Graduate Operating Systems (CS 736)	Spring 2014 (4.78)
Undergraduate Operating Systems (CS 537)	Fall 2013 (4.86)
Virtualization (CS 838)	Spring 2013 (4.59)
Starting a Software Company (CS 638)	Spring 2013
Introduction to Systems (CS 354)	Fall 2012 (5.00)
Starting a Software Company (CS 638)	Fall 2012
Undergraduate Operating Systems (CS 537)	Spring 2012 (4.98)
Undergraduate Operating Systems (CS 537)	Fall 2011 (4.93)
Undergraduate Operating Systems (CS 537)	Spring 2011 (4.94)
Graduate Operating Systems (CS 736)	Fall 2010 (5.00)
Undergraduate Operating Systems (CS 537)	Spring 2010 (4.96)
Undergraduate Operating Systems (CS 537)	Fall 2009 (4.88)
Undergraduate Operating Systems (CS 537)	Spring 2009 (4.94)
Undergraduate Operating Systems (CS 537)	Fall 2008 (4.92)
Graduate Operating Systems (CS 736)	Spring 2008 (4.95)
Graduate Operating Systems (CS 736)	Fall 2007 (4.95)
Building a Brain (CS 838)	Fall 2007
Graduate Storage Systems (CS 838)	Spring 2006 (4.50)
Graduate Operating Systems (CS 736)	Spring 2005 (4.80)
Undergraduate Operating Systems (CS 537)	Fall 2004 (4.63)
Graduate Distributed Systems (CS 739)	Spring 2004 (4.93)
Graduate Operating Systems (CS 736)	Fall 2003 (4.85)
Graduate Distributed Systems (CS 739)	Spring 2003 (4.29)
Graduate Operating Systems (CS 736)	Fall 2002 (4.56)
Undergraduate Operating Systems (CS 537)	Spring 2002 (4.79)
Integrating Networks and Storage (CS 838)	Fall 2001 (4.86)
Undergraduate Operating Systems (CS 537)	Spring 2001 (4.44)
Graduate Operating Systems (CS 736)	Fall 2000 (4.59)
Graduate Operating Systems (CS 736)	Spring 2000 (4.76)

Post-Doctoral Matriculation

Sudarsun Kannan *	Spring '16 (Professor @ Rutgers)
Samer Al-kiswany *	Summer '18 (Professor @ Waterloo)
Shaohua Doan *	Summer '23 (Professor @ Washington State)

Ph.D. Student Matriculation

Kan Wu *, Ph.D., <i>Evolving the System Stack for Persistent Memory</i>	Fall '22 (Google)
Aishwarya Ganesan *, Ph.D., <i>Consistency-Aware Durability</i>	Fall '20 (Professor at UIUC)
Yuvraj Patel *, Ph.D., <i>Concurrency In Modern Systems</i>	Fall '21 (Professor at University of Edinburgh)
Ram Alagappan *, Ph.D., – <i>Distributed Storage Systems</i>	Summer '19 (Professor at UIUC)
Jun He *, Ph.D., – <i>Performance Techniques for Storage</i>	Spring '19 (Google)
Zev Weiss *, Ph.D., <i>Systems Support for Evolving Hardware</i>	Spring '18 (SimpleMachines)
Leo Arulraj*, Ph.D., <i>Non-Invasive I/O Classification Techniques and Applications</i>	Spring '18 (Datrium)
Suli Yang *, Ph.D., <i>Schedulability in Storage Systems</i>	Fall '18 (Alibaba)
Thanu Sankaranarayanan *, Ph.D., <i>Crash Consistency in Modern Applications</i>	Spring '16 (Google)
Tyler Harter *, Ph.D., <i>Measurement-based Systems Design</i>	Spring '16 (Teaching Professor at UW-Madison)
Lanyue Lu *, Ph.D., <i>Physical Separation in Modern Storage Systems</i>	Fall '15 (Google)
Vijay Chidambaran *, Ph.D., <i>Orderless and Eventually Durable File Systems</i>	Spring '15 (Professor @ Texas–Austin)
Thanh Do *, Ph.D., <i>Towards Reliable Cloud Systems</i>	Spring '14 (Microsoft)
Yupu Zhang *, Ph.D., <i>Integrated Data Protection</i>	Spring '14 (HP Labs)
Yiying Zhang *, Ph.D., <i>Indirection in Storage Stacks</i>	Spring '13 (Professor @ Purdue)
Sriram Subramanian *, Ph.D., <i>Revisiting the Storage Interface for Flash</i>	Spring '13 (Fusion-IO)
Swami Sundararaman *, Ph.D., <i>Recovery Techniques to Improve File System Reliability</i>	Spring '11 (Fusion-IO)
Joe Meehan ⁺ , Ph.D., <i>Towards Transparent CPU Scheduling</i> ,	Spring '11 (Professor @ Lynchburg)
Haryadi Gunawi *, Ph.D., <i>Towards Reliable Storage Systems</i> ,	Fall '09 (Professor @ U. Chicago)
Nitin Agarwal *, Ph.D., <i>Enabling Realistic and Practical File-System Benchmarking</i>	Fall '09 (NEC Labs)
Lakshmi Bairavasundaram *, Ph.D., <i>Characteristics, Impact, and Tolerance of Disk Failures</i>	Spring '08 (NetApp)
Florentina Popovici *, Ph.D., <i>Data-Driven Models in Storage System Design</i>	Spring '07 (Google)
Todd Jones *, Ph.D., <i>Implicit Operating System Awareness in a VMM</i>	Spring '07 (Sandia National Labs)
Tim Denehy *, Ph.D., <i>Information and Collaboration in the Storage Stack</i>	Spring '06 (Google)
Nathan Burnett *, Ph.D., <i>Information and Control in File System Buffer Management</i>	Spring '06 (VmWare)
Vijayan Prabhakaran *, Ph.D., <i>IRON File Systems</i>	Spring '06 (Microsoft Silicon Valley)
John Bent ⁺ , Ph.D., <i>Data-driven Batch Scheduling</i>	Spring '05 (Los Alamos National Labs)
Muthian Sivathanu *, Ph.D., <i>Semantically-smart Disk Systems</i>	Spring '05 (Google)

Masters Student Matriculation

Surabhi Gupta * –	Fall '22 (Google) Arrived: Spring '21:
Leon Yang *, M.S.	Spring '19 (Facebook)
Dennis Zhou *, M.S.	Spring '18 (Facebook)
Brandon Davis *, M.S.	Spring '15 (Pure Storage)
Chris Dragga *, M.S.	Spring '13 (NetApp)
Ao Ma *, M.S.	Spring '12 (EMC)
Ishani Ahuja *, M.S.	Spring '12 (LinkedIn)
Deepak Ramamurthi *, M.S.	Spring '11 (Google)
Laxman Visampalli *, M.S.	Spring '10 (QualComm)
Abhishek Rajimwale *, M.S.	Fall '09 (Data Domain)
Shweta Krishnan *, M.S.	Spring '07 (Cisco)

Meenali Rungta*, M.S.
 James Nugent*, M.S.
 Camille Fournier*, M.S.
 Brian Forney*, M.S.
 Venkateshwaran Venkataramani (with M. Livny)
 Stirling Martin*, M.S.
 Omer Zaki, M.S.
 Matt McCormick, M.S.
 Jonathan Ledlie, M.S.
 Sambavi Muthukrishnan*, M.S.

Spring '06 (Google)
 Summer '05
 Spring '05 (Goldman Sachs)
 Spring '03 (Cassatt)
 Spring '02 (Oracle, Facebook)
 Spring '02 (Epic)
 Spring '01 (IBM Almaden, Amazon)
 Spring '01 (Microsoft)
 Spring '01 (Harvard for Ph.D.)
 Fall '00 (Oracle, Facebook)

Graduate Student Researchers and Postdocs

Jing Liu* – Arrived: Fall '16
 Anthony Rebello* – Arrived: Fall '16
 Yifan Dai* – Arrived: Fall '19
 Kaiwei Tu* – Arrived: Fall '20:
 Guanzhou Hu* – Arrived: Fall '20:
 Kai Mast (postdoc)* – Arrived: Fall '20
 Chenhao Ye* – Arrived: Fall '20:
 Vinay Banakar* – Arrived: Fall '21:

Key: * (co-advised with A. Arpaci-Dusseau), + (co-advised with A. Arpaci-Dusseau and Miron Livny)

Undergraduate Researchers

Jerry Yu, <i>DenseFS</i>	Summer '20
David Chen, <i>DenseFS</i>	Summer '18
Matt Parker, <i>DenseFS</i>	Summer '18
Yien Xu, <i>DenseFS</i>	Summer '18
Peng Cheng, <i>SSD-Aware Systems</i>	Summer '18
Tianyu Zhang, <i>SSD-Aware Systems</i>	Summer '18
Tanvi Bhagwat, <i>Device File Systems</i>	Summer '18
Tianyi Shan, <i>Device File Systems</i>	Summer '18
Abigail Matthews, <i>Device File Systems</i>	Summer '18
Weiping Zhou, <i>High-Performance Python</i>	Summer '18
Leon Yang, <i>Microservices</i>	Spring '17
Kevin Houck, <i>Microservices</i>	Spring '17
Peter van Sandt, <i>Faster Key-Value Storage</i>	Spring '17
Ed Oakes, <i>Microservices</i>	Summer '16–Spring '17
Jon Morton, <i>Flash-based KV Store</i>	Spring '14
Junjue Wang, <i>Flash-based KV Store</i>	Spring '14
Alan Liu, <i>Flash-based KV Store</i>	Spring '14
Jordan Friendshuh, <i>Flash-based KV Store</i>	Spring '14
Huanchen Zhang, <i>Faster File System Checking</i>	Summer '12
Yanlei Dao, <i>Faster File System Checking</i>	Summer '12
Alex Tessmer, <i>Memcache Scaling</i>	Summer '10
David Capel, <i>Memcache Scaling</i>	Summer '10
Rustam Lalkaka, <i>Memcache Scaling</i>	Summer '10
Michael Vaughn, <i>iBench</i>	Summer '09

Tyler Harter, <i>iBench</i>	Summer '09
Andrew Krioukov, <i>Parity Lost and Regained</i>	Summer '07
Andrew Konwinski, <i>iLife Fault Injection</i>	Fall '06
Andrew Krioukov, <i>Iron File Systems</i>	Fall '05
William Umboh, <i>Apple File System Study</i>	Fall '05
Tjahjono Tjandra, <i>Tracing AFS</i>	Summer '04 through Spring '05
Yahya Cahyadi, <i>Congestion-controlled UDP</i>	Fall '04 through Spring '05
Venu Bolisetty, <i>Virtualizing NFS</i>	Summer '03
Haryadi Gunawi, <i>Quantifying the Overhead of TCP/IP</i>	Spring '00 through Spring '02
Henri Tandradinata, <i>The Costs of Encrypted Communication</i>	Spring '02
Michael Christie, <i>Software-based AutoRAID</i>	Summer '02
Jason Knaster, <i>Visualizing a Disk Scheduler</i>	Summer '01
Siddarth Sawkar, <i>Disk Fingerprints</i>	Summer '01 through Fall '01
Yenni Rueslin, <i>Performance of the Ext2fs File System</i>	Fall '00
Julio Lauritz, <i>Performance of the Ext2fs File System</i>	Fall '00
Aaron Darling, <i>Secure, Fast Remote Execution</i>	Fall '00
James Olson, <i>Gigabit Ethernet Performance</i>	Fall '00

Departmental Service

Chair	'19-'23
Associate Chair	'17-'19
Data Science Ad Hoc Committee	'18-'19
Chancellor's Task Force on Computing	'17-'18
Budget Committee	'17-'18
Merit Committee	'17-'18
Curriculum Committee	'17-'18
Curriculum Committee	'16-'17
Curriculum Committee	'15-'16
Curriculum Committee (Chair)	'12-'13
Budget Committee	'12-'13
Merit Committee	'12-'13
Recht Mid-Tenure Review (Chair)	'11-'12
Budget Committee	'11-'12
Merit Committee	'11-'12
Curriculum Committee (Chair)	'11-'12
Curriculum Committee (Chair)	'10-'11
Swift Mid-Tenure Review	'09-'10
Curriculum Committee (Chair)	'09-'10
Akella Mid-Tenure Review (Chair)	'08-'09
Graduate Admissions Committee (Chair)	'08-'09
Merit Committee	'09
Graduate Admissions Committee (Co-Chair)	'07-'08
Merit Committee	'08
Graduate Advising Committee	'05-'06
Departmental Distinguished Lecture Series (with A. Arpaci-Dusseau)	'04-'05
Curriculum Committee	'04-'05
Curriculum Committee (Chair)	'03-'04
Curriculum Committee (Chair)	'02-'03
Curriculum Committee (Chair)	'01-'02
Student Admissions	'99-'00
Rosser Lecture (Henry Fuchs)	'00-'01