ANDREA C. ARPACI-DUSSEAU

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Research Interests

Operating Systems, File and Storage Systems, Parallel and Distributed Systems, Computer Science Education

Education

Computer Science Division, University of California, Berkeley. *1991-1998*

Ph.D., December 1998.
Implicit Coscheduling: Coordinated Scheduling with Implicit Information in Distributed Systems

M.S., May 1994. *Modeling Parallel Sorts with LogP on the CM-5*
Advisor: David E. Culler

Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA *1987-1991*

B.S. in Computer Engineering, *Univeristy and College Honors*

Appointments

Professor of Computer Sciences, University of Wisconsin, Madison	*June 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	*Spring 2006-June 2009*
Assistant Professor of Computer Sciences, University of Wisconsin, Madison	*January 2000-Spring 2006*
Instructor and Postdoctoral Researcher, Stanford University	*1998-1999*

Awards and Honors

Catherine A. Erickson Professorship in The School of Computer, Data & Information Sciences	*2023*
UC Berkeley Computer Science Distinguished Alumni Award	*2022*
WARF Named Professorship: Susan Beth Horwitz Professor of Computer Sciences	*2021*
ACM Fellow	*2020*
Carl de Boor Professorship in Computer Sciences	*2018*
ACM SIGOPS Mark Weiser Award	*2018*
UW-Madison Vilas Faculty Mid-Career Investigator Award	*2018-2019*
Fellow of UW-Madison Teaching Academy	*2017*
Carolyn Rosner Award for Excellence in Teaching (CS Department)	*2010, 2017*
UW-Madison Van Hise Outreach Teaching Award	*2017*
UW-Madison Vilas Associate	*2012-2014*
Honored Instructors Award (Division of University Housing)	*2009*
Advised students to PennySort World Record	*2002*
Advised students to Datamation Sorting World Record	*2001*
MinuteSort World Record (Joint with Remzi Arpaci-Dusseau)	*1997, 1998*
Datamation Sorting World Record (Joint with Remzi Arpaci-Dusseau)	*1997, 1998*
Intel Graduate Fellowship	*1995-1997*
National Science Foundation Graduate Fellowship	*1991-1994*

Best Paper Awards

USENIX Test of Time Award for *An Analysis of Data Corruption in the Storage Stack* in FAST'08 *2022*
Symposium on File and Storage Technologies (FAST) *2020*
Symposium on File and Storage Technologies (FAST) *2018*
Symposium on File and Storage Technologies (FAST) *2017*
European Conference on Computer Systems (EuroSys) *2014*
Symposium on File and Storage Technologies (FAST) *2013*
Symposium on Operating Systems Principles (SOSP) *2011*
Symposium on File and Storage Technologies (FAST) *2011*
Symposium on File and Storage Technologies (FAST) *2010*
Usenix Annual Technical Conference (ATC) *2009*
Symposium on File and Storage Technologies (FAST) *2009*
Symposium on File and Storage Technologies (FAST) *2008*
Dependable Systems and Networks (DSN) *2005*
Symposium on File and Storage Technologies (FAST) *2004*

External Service

Virginia Tech Computer Science Department External Review *Fall'21*
ACM SIGOPS Mark Weiser Award Selection Committee *2019-2021*
OSDI Steering Committee *2018-Present*
Panelist for NSF CISE Proposals *2001, 2002, 2004, 2006, 2007, 2008, 2014, 2019, 2020, 2022*
EuroSys Roger Needham Award Review Committee *2019*
Reviewer for Department of Energy SBIR Phase I and II *2018, 2019*
Instructor for College Board Computer Science (CS): Principles Pilot Phase II *2011-2012*
Reviewer for NCWIT-WI Aspirations in Computing Scholarships *2012*
Member of Advisory Committe for NSF CISE *2006-2008*
External Advisory Panelist for NSF LEAD project *October 2006*
Elected as ACM SIGOPS Treasurer *2003*
Reviewer for Natural Sciences and Engineering Resource Council of Canada (NSERC) *2002*

Program Chair and Committees

ACM Symposium on Operating Systems Principles (SOSP) **(Co-Chair)** *2024*
ACM SIGOPS Asia-Pacific Workshop on Systems (APSys) *2019, 2023*
USENIX Conference on File and Storage Technologies (FAST) *2005, 2008, 2012, 2016, 2018, 2022*
USENIX Symposium on Operating System Design and Implementation (OSDI) *2016, 2020*
USENIX Annual Technical Conference (ATC) *2003, 2005, 2012, 2020*
USENIX Conference on Networked Systems Design and Implementation (NSDI) *2017, 2020*
ACM International Systems and Storage Conference (SYSTOR) *2019*
USENIX Symposium on Operating System Design and Implementation (OSDI) **(Co-Chair)** *2018*
European Conference on Computer Systems (EuroSys) *2013, 2017, 2018*
Workshop on Hot Topics in Storage and File Systems *2013, 2014*
ACM Symposium on Operating Systems Principles (SOSP) *2007, 2009, 2011 (Poster+WIPs)*
ACM SIGMETRICS/Performance *2009*
Conference on Very Large Data Bases (VLDB) *2009*
USENIX Conference on File and Storage Technologies (FAST) (**Co-Chair** w/ Remzi Arpaci-Dusseau) *2007*
Architectural Support for Programming Languages and Operating Systems (ASPLOS) *2006*
Workshop on Hot Topics in Systems Dependability (HotDep) *2006*
International Workshop on Storage Security and Survivability (StorageSS) *2005*
Supercomputing (SC) *2001, 2005*
USENIX Annual Technical Conference (ATC) (**Co-Chair** w/ Remzi Arpaci-Dusseau) *2004*
International Conference on Distributed Computing Systems (ICDCS) *2004*
Autonomic Track at Hawaii International Conference on System Sciences (HICSS) *2004*
ACM Symposium on Principles of Distributed Computing (PODC) *2002*

Workshop on Job Scheduling Strategies for Parallel Processing *1999, 2000, 2001, 2002*
ACM SIGPLAN Workshop on Optimization of Middleware and Distributed Systems *2001*

Community Outreach

Created Weekly CS Afterschool and Weekend Clubs for K-12 Students
- Shorewood Elementary *Fall'09-Present*
- Lowell Elementary *Fall'11-Sp'13, Fall'15-Present*
- Van Hise Elementary *Fall'12-Present*
- Thoreau Elementary *Sp'12-Present*
- Madison Children's Museum (Co-Ed) *Sp'12-Present*
- Randall Elementary *Fall'13-Present*
- Crestwood Elementary *Fall'13-Present*
- Muir Elementary *Sp'14-Present*
- Stephens Elementary *Sp'15-Present*
- Marquette Elementary *Sp'16-Present*
- Olson Elementary *Sp'17-Present*
- Midvale Elementary *Sp'17-Present*
- Emerson Elementary *Fall'17-Present*
- Schenk Elementary *Sp'12, Sp'18-Present*
- Salvation Army *Sp'18-Present*
- Falk Elementary *Sp'16-Fall'16, Sp'19*
- Huegel Elementary *Fall'18-Present*
- Hawthorne Elementary *Fall'18*
- Neighborhood House Community Center *Sp'15-Fall'15, Sum'17, Sum'18*
- Elvehjem Elementary *Sp'17*
- Leopold Elementary *Fall'15-Fall'16*
- Madison Children's Museum (Girls-Only) *Sp'13-Sp'14*
- America Indian Science and Engineering Society (AISES) *Sp'13*
- Nuestro Mundo Elementary *Fall'12-Sp'13*
- Schenk Elementary *Sp'12*
- Hamilton Middle *Sp'11-Sp'12*
- Wright Middle *Fall'11-Sp'12*

Presenter at UW-Madison AP Summer Institute for CS Principles *2016, 2017*
Dean for CS Major at Grandparents Univeristy, UW-Madison *Summer 2011-Present*
Primary Instructor for CS Major at Grandparents Univeristy, UW-Madison *Summers 2011, 2012, 2015*
Created UW-Madison Scratch-a-thon Programming Competition *Sp'13*
Coordinated CS Workshops
- UW-Madison Wisconsin Science Festival *Fall'18*
- John Muir Family Science Night in Portage, WI *Sp'13*
- Science Night at Emerson Elementary *Sp'13*
- Shorewood Elementary Teacher Training *Fall'11*
- Scratch Workshop at Sussex Library *Fall'10*
- Scratch Workshop at Hartland Library *Sp'09*
- Women in Science and Engineering RLC *Sp'09*

Volunteer for Imaginary Worlds Camp at Calvin College *Summer 2007*

University Service

L&S Faculty Appeals *Summer'22*
L&S Academic Planning Council *Fall'21-Sp'23*
Mercile J. Lee Scholars Program Mentor *Fall'20-Sp'23*
Panelist, WISELI Celebrating Grant Review *Summer'15-Summer'22*
Kemper K. Knapp Bequest Committee *Fall'18-Sp'23*
UW-Madison Sophomore Research Fellowship Committee *Sp'19, Sp'20, Sp'22*

Distinguished Teaching Awards Committee	*Fall'19-Sp'22*
Cluster Advising Committee (CAC)	*Sp'20*
Graduate Student Support Competition Committee	*Fall'18*
L&S Physical Sciences Divisional Committee	*Fall'15-Sp'18*
UW-Madison CIO Search Committee	*2018*
Chair, Physics Department Academic Programs Review Committee	*Fall'13*
Faculty Advisor, Alpha Phi Omega, National Service Fraternity	*Sp'11-Sp'13*
Faculty Co-Director of UW-Madison WISE Residential Learning Community	*Fall'08 - Sp'10*
Committee Member of ECE Department's Ten-Year Review	*Sp'08*

Departmental Service

Chair, CS Department Graduate Student Admissions Committee	*Fall'18-Sp'23*
Faculty Advisor, ACM-Women Chapter	*Sp'11-Present*
Diversity Committee	*Fall'19-Sp'23*
CS Department Salary/Merit Committee	*Fall'22, Fall'23*
CS Department Budget Committee	*Fall'07-Sp'10, Fall'15-Sp'17, Fall'19-Sp'21*
Associate Chair, Department of Computer Sciences	*Fall'10-Summer'14*
CS Department Curriculum Committee	*Fall'10-Spring'14*
Chair of CS Department Graduate Advising Committee	*Fall'08-Sp'10*
Co-Chair of CS Department Graduate Advising Committee	*Fall'07-Sp'08*
CS Department Graduate Advising Committee	*Fall'02 - Sp'03*
CS Department Distinguished Lecture Series	*Fall'04-Sp'05*
CS Women Distinguished Lecture Series	*Sp'03*
CS Department Graduate Student Admissions Committee	*Sp'01, Sp'02, Sp'04, Sp'06*
CS Department Faculty Recruiting Committee	*Sp'00*
CS Department OS Qualifying Exam Committee	*Sp'00-Present*

Courses Created and Taught

Introducing CS to K-12 Students (CS 402)	*Fall'12 (Created), Sp'13, Fall'13, Sp'14, Sp'16, Sp'17 Sum'17, Fall'17, Sum'18, Fall'18, Sum'19, Fall'21, Sp'22, Fall'22, Sp'23*
Distributed Systems (CS739)	*Sp'05, Sp'06, Sp'08, Sp'09, Sp'22, Sp'23*
Introduction to Operating Systems (CS537)	*Sp'00, Sp'01, Sp'03, Fall'04, Fall'05, Fall'07 Fall'15, Fall'16, Fall'19, Sp'21*
Advanced Operating Systems (CS 736)	*Fall'01, Sp'02, Fall'13, Sp'18, Sp'19, Fall'20*
Introduction to Computation (CS 202)	*Fall'09 (Created), Sp'10, Fall'10, Fall'11, Fall'12 (Honors)*
Service-learning: Afterschool Computer Science Clubs (Bio 375)	*Sp'11 (Created), Fall'11, Sp'12*
Special Topics in Operating Systems: Gray-Box Systems (CS838)	*Fall'02 (Created)*

Students

Ph.D. Student Matriculation (w/ Remzi Arpaci-Dusseau):

Kan Wu, Ph.D., *Evolving the System Stack for Persistent Memory: Device Characterization, Caching, and Sharing Perspectives* *Summer'22*

Yuvraj Patel, Ph.D., *Fair and Secure Synchronization for Non-Cooperative Concurrent Systems* *Summer'21*

Aishwarya Ganesan, Ph.D., *Consistency-Aware Durability* *Fall'20*

Ram Alagappan, Ph.D., *Protocol- and Situation-Aware Distributed Storage Systems* *Summer'19*

Jun He, Ph.D., *Beyond Storage Interfaces: Finding and Exploiting Unwritten Contracts in Storage Devices* *Fall'18*

Zev Weiss, Ph.D., *Hardware Driven Evolution in Storage Software* *Summer'18*

Leo Arulraj, Ph.D., *Non-Invasive I/O Classification Techniques and Applications* *Sp'18*

Suli Yang, Ph.D., *Schedulability in Local and Distributed Storage Systems* *Fall'17*

Thanumalayan Sankaranarayana Pillai, Ph.D., *Application Crash Consistency* (Google) *Fall'16*

Tyler Harter, Ph.D., *Measurement-Driven Storage: a Study of Apple Desktop Applications, Facebook Messages, and Docker Containers* (Microsoft Gray Systems Lab) *Sp'16*

Lanyue Lu, Ph.D., *Physical Separation in Modern Storage Systems* (Google) *Sp'16*

Vijay Chidambaran, Ph.D., *Orderless and Eventually Durable File Systems* (UT-Austin) *Fall'15*
Thanh Do, Ph.D., *Towards Reliable Cloud Systems* (Microsoft Gray Systems Lab) *Sp'14*
Yupu Zhang, Ph.D., *Integrated Data Protection* (HP Labs) *Sp'14*
Yiying Zhang, Ph.D., *Indirection in Storage Stacks* (Purdue) *Sp'13*
Sriram Subramanian, Ph.D., *Revisiting the Storage Interface for Flash* (Fusion-IO) *Sp'13*
Swami Sundararaman, Ph.D., *Recovery Techniques to Improve File System Reliability* (Fusion-IO) *Sp'11*
Joe Meehean, Ph.D., *Towards Transparent CPU Scheduling* (Professor at Lynchburg) *Sp'11*
Haryadi Gunawi, Ph.D., *Towards Reliable Storage Systems* (U of Chicago) *Fall'09*
Nitin Agarwal, Ph.D., *Enabling Realistic and Practical File-System Benchmarking* (NEC Labs) *Fall'09*
Lakshmi Bairavasundaram, Ph.D., *Characteristics, Impact, and Tolerance of Partial Disk Failures* (NetApp) *Sp'08*
Florentina Popovici, Ph.D., *Data-Driven Models in Storage System Design* (Google) *Sp'07*
Todd Jones, Ph.D., *Implicit Operating System Awareness in a VMM* (Sandia National Labs) *Sp'07*
Tim Denehy, Ph.D., *Information and Collaboration in the Storage Stack* (Google) *Sp'06*
Nathan Burnett, Ph.D., *Information and Control in File System Buffer Management* (VmWare) *Sp'06*
Vijayan Prabhakaran, Ph.D., *IRON File Systems* (Microsoft Research) *Sp'06*
John Bent, Ph.D., *Data-driven Batch Scheduling* (Los Alamos National Labs) *Sp'05*
Muthian Sivathanu, Ph.D., *Semantically-smart Disk Systems* (Google) *Sp'05*

Masters Student Matriculation (w/ Remzi Arpaci-Dusseau):

Chris Dragga *(M.S., 2013)*, Ao Ma *(M.S., 2012)*, Ishani Ahuja *(M.S., 2011)*, Deepak Ramamurthi *(M.S. 2011)*), Abhishek Rajimwale *(M.S., 2009)*, Swetha Krishnan *(M.S., 2007)*, Meenali Rungta *(M.S., 2006)*, James Nugent *(M.S., 2005)*, Camille Fournier *(M.S. 2005)*, Brian Forney *(M.S., 2003)*, Stirling Martin *(M.S., 2002)*, Sambavi Muthukrishnan *(M.S., 2001)*

Undergraduate Students:

Aaron Darling (Fall'00), Julio Lauritz (Fall'00), Yenny Rusli (Fall'00), Andy Lesmana (Sp'01), Vishal Soni (Fall'01), Leslie Cheung (Fall'01 - Sp'02), Madhava Walpola (Sp'02), Tom Hennen (Fall'01 and Fall'02), Andrew Hochhaus (Summer'03), Hendro Riyadi (Summer'03), Greg Sawyer(Summer'03), Dan Hawk (URS: Fall'07-Sp'08), Tu Anh Lam Vo (URS: Fall'07-Sp'08), Arizona Jaramillo (URS: Fall'07-Sp'08), Aaraon Scott (Summer 2008), Pa Kou Vang (URS: Fall'08-Sp'09), Phoua Xiong (URS: Fall'08-Sp'09), Erin Gonzalez (URS: Fall'08-Sp'09), Victor Bittorf (Sp'11), Cara Lauriten (Sp'12), Michael Ahlm (Sp'14), Pavle Kostovi (Sp'17), Kevin Houck (Sp'17)

Refereed Conference Publications

[1] Yifan Dai, Jing Liu, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. Symbiosis: The art of application and kernel cache cooperation. In *22nd USENIX Conference on File and Storage Technologies (FAST 24)*, pages 51–69, Santa Clara, CA, February 2024.

[2] Vinay Banakar, Kan Wu, Yuvraj Patel, Kimberly Keeton, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Wiscsort: External sorting for byte-addressable storage. *Proc. VLDB Endow.*, 16(9):2103–2116, 2023.

[3] Shawn Zhong, Chenhao Ye, Guanzhou Hu, Suyan Qu, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau, and Michael Swift. MadFS: Per-File Virtualization for Userspace Persistent Memory Filesystems. In *21st USENIX Conference on File and Storage Technologies (FAST 23)*, pages 265–280, Santa Clara, CA, 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 (USENIX Security '22)*, August 2022.

[5] Kan Wu, Kaiwei Tu, Yuvraj Patel, Rathijit Sen, Kwanghyun Park, Andrea C. Arpaci-Dusseau, and Remzi H. 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)*, February 2022.

[6] 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 *SIGMOD '22: Proceedings of the 2022 International Conference on Management of Data*, page 19–33, June 2022.

[7] 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.

[8] 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.

[9] 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 *19th USENIX Conference on File and Storage Technologies (FAST '21)*, February 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 *19th USENIX Conference on File and Storage Technologies (FAST '21)*, February 2021.

[11] Yifan Dai, Yien Xu, Aishwarya Ganesan, Ramnatthan Alagappan, Brian Kroth, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. From WiscKey to Bourbon: A Learned Index for Log-Structured Merge Trees. In *14th USENIX Symposium on Operating Systems Design and Implementation (OSDI'20)*, October 2020.

[12] Anthony Rebello, Yuvraj Patel, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Can applications recover from fsync failures? In *The 2020 USENIX Annual Technical Conference (USENIX ATC '20)*. USENIX Association, July 2020.

[13] 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 *Fifteenth European Conference on Computer Systems (EuroSys '20)*, Heraklion, Greece, April 2020.

[14] Aishwarya Ganesan, Ramnatthan Alagappan, Andrea C. Arpaci-Dusseau, and Remzi H. Arpaci-Dusseau. Strong and Efficient Consistency with Consistency-aware Durability. In *18th USENIX Conference on File and Storage Technologies (FAST 20)*, Santa Clara, CA, February 2020. USENIX Association.

[15] 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 *18th USENIX Conference on File and Storage Technologies (FAST '20)*, Santa Clara, CA, February 2020.

[16] 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.

[17] 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.

[18] 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 *2018 USENIX Annual Technical Conference (USENIX ATC 18)*, Boston, MA, 2018.

[19] Sudarsun Kannan, Nitish Bhat, Ada Gavrilovska, Andrea Arpaci-Dusseau, and Remzi Arpaci-Dusseau. Redesigning LSMs for Nonvolatile Memory with NoveLSM. In *2018 USENIX Annual Technical Conference (USENIX ATC 18)*, Boston, MA, 2018. USENIX Association.

[20] 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.

[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. In *Proceedings of the 16th USENIX Conference on File and Storage Technologies (FAST '18)*, Oakland, California, February 2018.

[22] 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.

[23] 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.

[24] 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.

[25] 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.

[26] 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.

[27] 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.

[28] 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.

[29] 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.

[30] 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.

[31] 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.

[32] 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.

[33] Yiying 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.

[34] 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.

[35] 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.

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