Mai Zheng

Data Storage Lab @Iowa State

Dept. of Electrical & Computer Engineering
Iowa State University, Ames, IA 50011
☎ *(515) 294-6285*
✉ *mai@iastate.edu*
www.ece.iastate.edu/∼mai

RESEARCH INTERESTS

Data Storage Systems; Data Intensive Computing; Data Integrity & Security.

EMPLOYMENT

2023–present **Associate Professor**, *Department of Electrical and Computer Engineering*.
Iowa State University, Ames, IA

2020–2023 **Harpole-Pentair Assistant Professor**, *Department of Electrical and Computer Engineering*.
Iowa State University, Ames, IA

2018–2020 **Assistant Professor**, *Department of Electrical and Computer Engineering*.
Iowa State University, Ames, IA

2015–2018 **Assistant Professor**, *Department of Computer Science*.
New Mexico State University, Las Cruces, NM

2012, 2013 **Research Intern**, *HP Labs*, Palo Alto, CA.
[HP Labs Mentors: Dr. Joseph Tucek, Dr. Mark Lillibridge, Dr. Kimberly Keeton]

EDUCATION

2009–2015 **Ph.D. in Computer Science**, *The Ohio State University*, Columbus, OH.
[Advisor: Dr. Feng Qin]

2006–2009 **M.S. in Electronic Science & Technology**, *University of Science and Technology of China*, Hefei, China. [Advisor: Dr. Li Guo].

2002–2006 **B.S. in Electronic Science & Technology**, *Qingdao University*, Qingdao, China.

HONORS & AWARDS

2022 **Samsung Global Research Outreach (GRO) Award**, *Samsung Advanced Institute of Technology*

2022 HotStorage Best Paper Nominee, *ACM Hot Topics in Storage & File Systems Program Committee*

2022 Cybersecurity Faculty Fellow, *Iowa State University*

2021 HotStorage Best Paper Nominee, *ACM Hot Topics in Storage & File Systems Program Committee*

2020 Harpole-Pentair Professorship, *Iowa State University*

2020 **NSF CAREER Award**, *National Science Foundation*

2019 IDEMA Research Award, *Western Digital Research & International Disk Drive Equipment and Materials Association*

2018 **FAST Best Paper Honorable Mention**, *USENIX File & Storage Technologies Program Committee*

2018 IDEMA Research Award, *Western Digital Research & International Disk Drive Equipment and Materials Association*

2016 NSF CRII Award, *National Science Foundation*

2009 University Fellowship, *The Ohio State University*

2008 Huawei Fellowship, *University of Science and Technology of China*

RESEARCH PUBLICATIONS & ARTIFACTS (SELECTED)

['***M***' means Mai's mentee & Mai; '**X%**' means Acceptance Rate; '**Y%**' means Best Paper (Nomination) Rate]

Peer-Reviewed Book Chapter

2025 [1] **On Fault Tolerance of Data Storage Systems: A Holistic Perspective.** Duo Zhang[M], Ahmed Dajani[M], and Mai Zheng[M]. *Fault Tolerance in Modern Engineering Systems*, ISBN 978-1-83635-166-5, 2025. *[To appear]*

Peer-Reviewed Journals

TOCS'25 [14] **Analyzing Configuration Dependencies of File Systems**. Tabassum Mahmud[M], Om R. Gatla[M], Duo Zhang[M], Carson Love[M], Ryan Bumann[M], Varun S Girimaji[M], and Mai Zheng[M]. to appear in ACM Transactions on Computer Systems, 2025.

*[**Artifacts**: **ConfD** A framework for analyzing configuration-related issues in storage systems. **BugBench**[k] A curated collection of storage system bugs for improving reliability & security. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**), Samsung Advanced Institute of Technology (**SAIT**)]*

CN'25 [13] **Design and Implementation of ARA Wireless Living Lab for Rural Broadband and Applications**. Taimoor Ul Islam, Joshua Ofori Boateng, Md Nadim, Guoying Zu, Mukaram Shahid, Xun Li, Tianyi Zhang, Salil Reddy, Wei Xu[M], Ataberk Atalar, Vincent Lee, Yung-Fu Chen, Evan Gossling, Elisabeth Permatasari, Christ Somiah, Owen Perrin, Zhibo Meng, Reshal Afzal, Sarath Babu[M], Mohammed Soliman, Ali Hussain; Daji Qiao, Mai Zheng[M], Ozdal Boyraz, Yong Guan, Anish Arora, Mohamed Y. Selim, Arsalan Ahmad, Myra B. Cohen, Mike Luby, Ranveer Chandra, James Gross, Kate Keahey, Hongwei Zhang. International Journal of Computer and Telecommunications Networking, 2025.

*[**Artifact**: **arawireless.org** A multi-city data infrastructure for rural America. Main sponsors: National Science Foundation (**NSF**), National Institute of Food and Agriculture (**NIFA**), **US Ignite**, & **PAWR** Industry Consortium]*

TPDS'24 [12] **PROV-IO+: A Cross-Platform Provenance Framework for Scientific Data on HPC Systems**. Runzhou Han[M], Mai Zheng[M], Suren Byna, Houjun Tang, Bin Dong, Dong Dai, Yong Chen, Dongkyun Kim, Joseph Hassoun, and David Thorsley. IEEE Transactions on Parallel and Distributed Systems, 2024.

*[**Artifact**: **PROV-IO**$^+$ A provenance framework for scientific data. Main sponsors: National Science Foundation (**NSF**), Lawrence Berkeley National Lab (**LBNL**), Samsung Advanced Institute of Technology (**SAIT**)]*

TOS'23 [11] **Understanding Persistent-Memory Related Issues in the Linux Kernel**. Om R. Gatla[M], Duo Zhang[M], Wei Xu[M], and Mai Zheng[M]. ACM Transactions on Storage, 2023.

*[**Artifact**: **BugBench**[k] A curated collection of storage system bugs for improving reliability & security. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**)]*

TC'22 [10] **Data Distribution for Heterogeneous Storage Systems**. Jiang Zhou, Yong Chen, Mai Zheng[M], Weiping Wang. IEEE Transactions on Computers, 2022.

TOS'22 [9] **A Study of Failure Recovery and Logging of High-Performance Parallel File Systems**. Runzhou Han[M], Om R. Gatla[M], Mai Zheng[M], Jinrui Cao[M], Di Zhang, Dong Dai, Yong Chen, and Jonathan Cook. ACM Transactions on Storage, 2022.

*[**Artifact**: **PFault** A framework for analyzing the reliability of large-scale file systems. Main sponsor: National Science Foundation (**NSF**)]*

CPE'21 [8] **Ensuring High Reliability and Performance with Low Space Overhead for Deduplicated and Delta-Compressed Storage Systems**. Chunxue Zuo[M], Fang Wang, Mai Zheng[M], Yuchong Hu, and Dan Feng. Concurrency and Computation: Practice and Experience, 2021.

TBench'21 [7] **Benchmarking for Observability: The Case of Diagnosing Storage Failures**. Duo Zhang[M], Mai Zheng[M]. BenchCouncil Transactions on Benchmarks, Standards and Evaluations, 2021.

*[**Artifact**: **BugBench**[k] A curated collection of storage system bugs for improving reliability & security. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**)]*

TOS'18 [6] **Towards Robust File System Checkers**.. Om R. Gatla[M], Mai Zheng[M], Muhammad Hameed[M], Viacheslav Dubeyko, Adam Manzanares, Filip Blagojevic, Cyril Guyot, and Robert Mateescu. ACM Transactions on Storage, 2018. *Fast-tracked!*

*[**Artifact**: **RFSCK** A framework for improving the fault resilience of file system checkers. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**)]*

TOCS'16 [5] **Reliability Analysis of SSDs under Power Fault**. Mai Zheng[M], Joseph Tucek, Feng Qin, Mark Lillibridge, Bill W Zhao, and Elizabeth S Yang. *ACM Transactions on Computer Systems*, 2016.

JKSYS'16 [4] **An Adaptive Algorithm for Scheduling Parallel Jobs in Meteorological Cloud**. Yongsheng Hao, Lina Wang, and Mai Zheng[M]. *Journal of Knowledge-based Systems*, 2016.

TPDS'14 [3] **GMRace: Detecting Data Races in GPU Programs via A Low-Overhead Scheme**. Mai Zheng[M], Vignesh T. Ravi, Feng Qin, and Gagan Agrawal. *IEEE Transactions on Parallel and Distributed Systems*, 2014.

JCEA'09 [2] **A Programmable Pixel Shader for Mobile Devices**. Jian Ji, Li Guo, Mai Zheng[M], and Lu Gao. *Journal of Computer Engineering and Applications*, 2009.

JCEA'09 [1] **A Sub-Pixel Image Registration Algorithm in Panoramic Image Mosaics**. Bingqin Wang, Li Guo, and Mai Zheng[M]. *Journal of Computer Engineering and Applications*, 2008.

Peer-Reviewed Conference/Workshop Proceedings

IPDPS'25 [39] **Be Aware of Metadata Corruption in Parallel File System: It Can Be Silent and Catastrophic**. Saisha Kamat, Mai Zheng[M], Bo Fang, and Dong Dai. Proceedings of 39th IEEE International Parallel and Distributed Processing Symposium, 2025.

HotStorage'24 [38] **Revisiting Erasure Codes: A Configuration Perspective**. Runzhou Han[M], Chao Shi[M], Tabassum Mahmud[M], Zeren Yang[M], Vladislav Esaulov, Lipeng Wan, Yong Chen, Jim Wayda, Matthew Wolf, and Mai Zheng[M]. Proceedings of the 16th ACM Workshop on Hot Topics in Storage and File Systems, 2024.

MobiCom'23 [37] **ARA PAWR: Wireless Living Lab for Smart and Connected Rural Communities**. Taimoor U. Islam, Joshua O. Boateng, Guouing Zu, Mukaram Shahid, Md Nadim, Wei Xu[M], Tianyi Zhang, Salil Reddy, Xun Li, Ataberk Atalar, Yung-Fu Chen, Sarath Babu[M], Hongwei Zhang, Daji Qiao, Mai Zheng[M], Yong Guan, Ozdal Boyraz, Anish Arora, Mohamed Selim, Myra B. Cohen. Demo Track, Proceedings of the 29th ACM Annual International Conference on Mobile Computing and Networking, 2023.

*[**Artifact**: **arawireless.org** A multi-city data infrastructure for rural America. Main sponsors: National Science Foundation (**NSF**), National Institute of Food and Agriculture (**NIFA**), **US Ignite**, & **PAWR** Industry Consortium]*

FAST'23 **[23%]** [36] **ConfD: Analyzing Configuration Dependencies of File Systems for Fun and Profit**. Tabassum Mahmud[M], Om R. Gatla[M], Duo Zhang[M], Carson Love[M], Ryan Bumann[M], and Mai Zheng[M]. Proceedings of the 21st USENIX Conference on File and Storage Technologies, 2023.

*[**Artifacts**: **ConfD** A framework for analyzing configuration-related issues in storage systems. **BugBench**[k] A curated collection of storage system bugs for improving reliability & security. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**)]*

ASPLOS'23 **[21%]** [35] **λFS: Elastically Scaling Distributed File System Metadata Service using Serverless Functions**. Benjamin Carver, Runzhou Han[M], Jingyuan Zhang, Mai Zheng[M], and Yue Cheng. Proceedings of the ACM International Conference on Architectural Support for Programming Languages and Operating Systems, 2023.

IPDPS'23 [26%] [34] **Drill: Log-based Anomaly Detection for Large-scale Storage Systems Using Source Code Analysis**. Di Zhang, Chris Egersdoerfer, Tabassum Mahmud[M], Mai Zheng[M], and Dong Dai, Proceedings of 37th IEEE International Parallel and Distributed Processing Symposium, 2023.

IPDPS'23 [26%] [33] **FaultyRank: A Graph-based Parallel File System Checker**. Saisha Kamat, Abdullah Al Raqibul Islam, Mai Zheng[M], and Dong Dai. Proceedings of 37th IEEE International Parallel and Distributed Processing Symposium, 2023.

NVMW'23 [32] **Analyzing Configuration Dependencies of DAX File Systems**. Tabassum Mahmud[M], Om R. Gatla[M], Duo Zhang[M], Carson Love[M], Ryan Bumann[M], and Mai Zheng. The 14th Annual Non-Volatile Memories Workshop, 2023.

WiNTECH'22 [31] **Wireless Guard for Trustworthy Spectrum Management**. Mukaram Shahid, Sarath Babu[M], Hongwei Zhang, Daji Qiao, Yong Guan, Joshua Ofori Boateng, Taimoor Ul Islam, Guoying Zu, Ahmed Kamal, and Mai Zheng[M]. Proceedings of 16th ACM Workshop on Wireless Network Testbeds, Experimental evaluation & CHaracterization at MobiCom. 2022.

NAS'22 [30] **On the Reproducibility of Bugs in File-System Aware Storage Applications**. Duo Zhang[M], Tabassum Mahmud[M], Om R. Gatla[M], Runzhou Han[M], Yong Chen, and Mai Zheng[M]. Proceedings of the 16th IEEE International Conference on Networking, Architecture, and Storage. 2022.

*[**Artifact**: **BugBench**[k] A curated collection of storage system bugs for improving reliability & security. Main sponsors: National Science Foundation (**NSF**), Samsung Research America (**SRA**)]*

HotStorage'22 [6.4%] [29] **Understanding Configuration Dependencies of File Systems**. Tabassum Mahmud[M], Duo Zhang[M], Om R. Gatla[M], and Mai Zheng[M]. Proceedings of the 14th ACM Workshop on Hot Topics in Storage and File Systems. 2022. *Best Paper Nominee!*

HPDC'22 [19%] [28] **PROV-IO: An I/O-Centric Provenance Framework for Scientific Data on HPC Systems**. Runzhou Han[M], Suren Byna, Houjun Tang, Bin Dong, and Mai Zheng[M]. Proceedings of the 31st International Symposium on High-Performance Parallel and Distributed Computing, 2022.

*[**Artifact**: **PROV-IO** A provenance framework for scientific data. Main sponsors: National Science Foundation (**NSF**), Lawrence Berkeley National Lab (**LBNL**), Samsung Advanced Institute of Technology (**SAIT**)]*

SYSTOR'21 [30%] [27] **A Study of Persistent Memory Bugs in the Linux Kernel**. Duo Zhang[M], Om R. Gatla[M], Wei Xu[M], and Mai Zheng[M]. Proceedings of the 14th ACM International Systems and Storage Conference, 2021.

*[**Artifact**: **BugBench**[k] A curated collection of storage system bugs for improving reliability & security. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**)]*

HotStorage'21 [7.5%] [26] **SentiLog: Anomaly Detecting on Parallel File Systems via Log-based Sentiment Analysis**. Di Zhang, Dong Dai, Runzhou Han[M], and Mai Zheng[M]. Proceedings of the 13th ACM Workshop on Hot Topics in Storage and File Systems. 2021. *Best Paper Nominee!*

WiNTECH'21 [25] **ARA: A Wireless Living Lab Vision for Smart and Connected Rural Communities**. Hongwei Zhang, Yong Guan, Ahmed Kamal, Daji Qiao, Mai Zheng[M], Anish Arora, Ozdal Boyraz, Brian Cox, Thomas Daniels, Matthew Darr, Doug Jacobson, Ashfaq Khokhar, Sang Kim, James Koltes, Jia Liu, Mike Luby, Larysa Nadolny, Joshua Peschel, Patrick Schnable, Anuj Sharma, Arun Somani, Lie Tang. *Proceedings of 15th ACM Workshop on Wireless Network Testbeds, Experimental evaluation & CHaracterization at ACM MobiCom*. 2021.

PDSW'20 [24] **Fingerprinting the Checker Policies of Parallel File Systems**. Runzhou Han[M], Duo Zhang[M], and Mai Zheng[M]. Proceedings of the 5th ACM/IEEE International Parallel Data Systems Workshop at ACM/IEEE Supercomputing Conference. 2020.

ATC'19 [19.9%] [23] **Lessons and Actions: What We Learned from 10K SSD-Related Storage System Failures**. Erci Xu, Mai Zheng[M], Feng Qin, Yikang Xu, and Jiesheng Wu. Proceedings of the USENIX Annual Technical Conference. 2019.

MSST'19 [22] **A Performance Study of Lustre File System Checker: Bottlenecks and Potentials**. Dong Dai, Om R. Gatla[M], and Mai Zheng[M]. Proceedings of the 35th International Conference on Massive Storage Systems and Technology, 2019.

PDSW'18 [21] **Understanding SSD Reliability in Large-Scale Cloud Systems**. Erci Xu, Mai Zheng[M], Feng Qin, Yikang Xu, and Jiesheng Wu, Proceedings of the 3rd ACM/IEEE Joint International Workshop on Parallel Data Storage and Data Intensive Scalable Computing Systems at ACM/IEEE Supercomputing Conference, 2018.

ICS'18 [**18.6%**] [20] **PFault: A General Framework for Analyzing the Reliability of High-Performance Parallel File Systems**. Jinrui Cao[M], Om R. Gatla[M], Mai Zheng[M], Dong Dai, Vidya Eswarappa, Yan Mu, and Yong Chen. Proceedings of the 32nd ACM International Conference on Supercomputing, 2018.

*[**Artifact**: **PFault** A framework for analyzing the reliability of parallel file systems. Main sponsor: National Science Foundation (**NSF**)]*

HPEC'18 [19] **Fault Tolerance Performance Evaluation of Large Scale Distributed Storage Systems: HDFS and Ceph Case Study**. Yehia Arafa, Atanu Barai, Mai Zheng[M], and Abdel-Hameed Badawy. Proceedings of the 22nd IEEE High Performance Extreme Computing Conference, 2018.

FAST'18 [**16.5%**;**3.6%**] [18] **Towards Robust File System Checkers**. Om R. Gatla[M], Muhammad Hameed[M], Mai Zheng[M], Viacheslav Dubeyko, Adam Manzanares, Filip Blagojevic, Cyril Guyot, and Robert Mateescu. Proceedings of the 16th USENIX Conference on File and Storage Technologies, 2018. *Best Paper Nominee!*

*[**Artifact**: **RFSCK** A framework for improving the fault resilience of file system checkers. Main sponsors: National Science Foundation (**NSF**), Western Digital Research (**WD**)]*

IGSC'17 [17] **eDelta: Pinpointing Energy Deviations in Smartphone Apps via Comparative Trace Analysis**. Li Li, Bruce Beitman, Mai Zheng[M], Xiaorui Wang and Feng Qin. Proceedings of the 8th International Green and Sustainable Computing Conference, 2017.

IGSC'17 [16] **Selective Checkpointing for Minimizing Recovery Energy and Efforts of Smartphone Apps**. Li Li, Yunhao Bai, Xiaorui Wang, Mai Zheng[M] and Feng Qin. Proceedings of the 8th International Green and Sustainable Computing Conference, 2017.

HotStorage'17 [15] **Understanding the Fault Resilience of File System Checkers**. Om R. Gatla[M] and Mai Zheng[M]. Proceedings of the 9th USENIX Workshop on Hot Topics in Storage and File Systems, 2017.

ICNC'17 [14] **A Command-Level Study of Linux Kernel Bugs**. Yiliang Shi[M], Danny V. Murillo[M], Simeng Wang[M], Jinrui Cao[M], and Mai Zheng[M]. Proceedings of International Conference on Computing, Networking and Communications, 2017.

PDSW'16 [13] **A Generic Framework for Testing Parallel File Systems**. Jinrui Cao[M], Simeng Wang[M], Dong Dai, Mai Zheng[M], and Yong Chen. Proceedings of the ACM/IEEE Joint International Workshop on Parallel Data Storage and Data Intensive Scalable Computing Systems at ACM/IEEE Supercomputing Conference, 2016.

NAS'16 [12] **Emulating Realistic Flash Device Errors with High Fidelity**. Simeng Wang[M], Jinrui Cao[M], Danny V. Murillo[M], Yiliang Shi[M], and Mai Zheng[M]. Proceedings of the 11th IEEE International Conference on Networking, Architecture, and Storage, 2016.

CSCI'15 [11] **Towards efficient service composition in multi-cloud environment**. Junwen Lu, Yongsheng Hao, Lina Wang, Mai Zheng[M]. Proceedings of the 2015 International Conference on Computational Science and Computational Intelligence, 2015.

OSDI'14 [**18.4%**] [10] **Torturing Databases for Fun and Profit**. Mai Zheng[M], Joseph Tucek, Dachuan Huang, Feng Qin, Mark Lillibridge, Elizabeth S. Yang, Bill W. Zhao, and Shashank Singh. Proceedings of the 11th USENIX Symposium on Operating Systems Design and Implementation, 2014.

FAST'13 [**18.8%**] [9] **Understanding the Robustness of SSDs under Power Fault**. Mai Zheng[M], Joseph Tucek, Feng Qin, and Mark Lillibridge. Proceedings of the 11th USENIX Conference on File and Storage Technologies, 2013.

MASCOTS'13 [8] **LiU: Hiding Disk Access Latency for HPC Applications with a New SSD-Enabled Data Layout**. Dachuan Huang, Xuechen Zhang, Wei Shi, Mai Zheng[M], Song Jiang, and Feng Qin. Proceedings of the 21st IEEE International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems, 2013.

HiPC'13 [7] **GMProf: A Low-Overhead, Fine-Grained Profiling Approach for GPU Programs**. Mai Zheng[M], Vignesh T. Ravi, Wenjing Ma, Feng Qin, and Gagan Agrawal. Proceedings of the 19th IEEE International Conference on High Performance Computing, 2012.

WCRE'12 [6] **Modeling Software Execution Environment**. Dawei Qi, William Sumner, Feng Qin, Mai Zheng[M], Xiangyu Zhang and Abhik Roychoudhury. Proceedings of the 19th Working Conference on Reverse Engineering, 2012.

ASPLOS'11 [**21%**] [5] **2ndStrike: Towards Manifesting Hidden Concurrency Typestate Bugs**. Qi Gao, Wenbin Zhang, Zhezhe Chen, Mai Zheng[M], and Feng Qin. Proceedings of the 16th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, 2011.

PPoPP'11 [**15.7%**] [4] **GRace: A Low-Overhead Mechanism for Detecting Data Races in GPU Programs**. Mai Zheng[M], Vignesh T. Ravi, Feng Qin, and Gagan Agrawal. Proceedings of the 16th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming, 2011.

ICSP'08 [3] **A Phase-Fitting Method for Sub-pixel Displacement Measurements Using Digital Speckle Images**. Mai Zheng[M], Jian Ji, Li Guo, and Junzhu Zhu. Proceedings of the 9th IEEE International Conference on Signal Processing, 2008.

ICCSIT'08 [2] **Image Stitching of Scenes with Large Misregistration**. Mai Zheng[M], Antai Guo, Wei Zhong, and Li Guo, Proceedings of the 1st IEEE International Conference on Computer Science and Information Technology, 2008.

ISVC'08 [1] **Stitching Video from Webcams**. Mai Zheng[M], Xiaolin Chen, and Li Guo, Proceedings of the 4th International Symposium on Visual Computing, 2008.

Other Peer-Reviewed Work (Position Papers/Work-in-Progress Reports/Extended Abstracts/Posters)

PDSW'24 -wip [16] **Silent Errors to Scientific Applications: Impacts of PFS Metadata Corruptions**. Saisha Kamat, Dong Dai, Mai Zheng[M], Bo Fang. Work-in-Progress (WiP) Session, The 9th International Parallel Data Systems Workshop (PDSW), held in conjunction with SC24: The International Conference for High Performance Computing, Networking, Storage, and Analysis, 2024.

MSST'24 -poster [15] **Revisiting Computational Storage for Data Integrity and Security**. Chao Shi[M], Anthony Manschula[M], Tabassum Mahmud[M], Zeren Yang[M], Mai Zheng[M], Yong Chen, Jim Wayda, Matthew Wolf, Byungwoo Bang. Poster Session, Proceedings of the 38th International Conference on Massive Storage Systems and Technology, 2024.

HUG'23 [14] **PROV-IO+: A Cross-Platform Provenance Framework for Scientific Data on HPC Systems** . Runzhou Han[M], Mai Zheng[M], Suren Byna, Houjun Tang, Bin Dong, Dong Dai, Yong Chen, Dongkyun Kim, Joseph Hassoun, David Thorsley, Matthew Wolf. HDF5 User Group (HUG) Meeting, 2023.

FAST'23 -wip [13] **On the Scalability of Testing the Crash Consistency of PM Systems**. Duo Zhang[M], Om R. Gatla[M], Abdullah Al Raqibul Islam, Dong Dai, and Mai Zheng[M]. Work-in-Progress (WiP) & Poster Sessions, 21th USENIX Conference on File and Storage Technologies, 2023.

DOEData'22 [12] **Towards Unified FAIR Metadata Services for Scientific Data.** Mai Zheng[M], Runzhou Han[M], Houjun Tang. Department of Energy (DOE) ASCR Workshop on the Management and Storage of Scientific Data, 2022.

FAST'22 -wip [11] **Understanding Configuration Issues in Storage Systems**. Tabassum Mahmud[M], Mai Zheng[M]. Work-in-Progress (WiP) & Poster Sessions, 20th USENIX Conference on File and Storage Technologies, 2022.

FAST'22 -poster [10] **Towards A Practical Provenance Framework for Scientific Data on HPC Systems**. Runzhou Han[M], Suren Byna, Mai Zheng[M]. Work-in-Progress (WiP) & Poster Sessions, The 20th USENIX Conference on File and Storage Technologies, 2022.

HotStorage'20 -position [9] **Position: On Failure Diagnosis of the Storage Stack**. Duo Zhang[M], Om R. Gatla[M], Runzhou Han[M], Mai Zheng. Position Paper & Poster Sessions, The 12th USENIX Workshop on Hot Topics in Storage and File Systems, 2020.

FAST'20 -wip [8] **A Cross-Layer Approach for Diagnosing Storage System Failures**. Duo Zhang[M], Chander B. Gupta[M], Mai Zheng[M], Adam Manzanares, Filip Blagojevic, and Cyril Guyot, Work-in-Progress (WiP) & Poster Sessions, The 18th USENIX Conference on File and Storage Technologies, 2020.

FAST'19 -poster [7] **Let the Device Talk**. Om R. Gatla[M], Yealim Sung[M], and Mai Zheng[M]. Work in Progress (WiP) & Poster Sessions, The 17th USENIX Conference on File and Storage Technologies, 2019.

FAST'19 -poster [6] **On the Recoverability of Persistent Memory Systems**. Ryan Chatier[M], Om R. Gatla[M], Mai Zheng[M], and Henry Duwe. Work in Progress (WiP) & Poster Sessions, 17th USENIX Conference on File and Storage Technologies, 2019.

CoDA'18 -poster [5] **Analysis and Prediction of Storage Error Events for High Performance Computing Systems**. Panika Valecha, Huiping Cao, Qixu Gong, Mai Zheng[M], Feng Yan, Xing Lin and Art Harkin. Poster Session, Department of Energy (DOE) Conference on Data Analysis, 2018.

FAST'17 -wip [4] **On Fault Resilience of File System Checkers**. Om R. Gatla[M] and Mai Zheng[M]. Work in Progress (WiP) & Poster Sessions, The 15th USENIX Conference on File and Storage Technologies, 2017.

NVMW'17 -poster [3] **Do Not Blame Devices for All Failures**. Simeng Wang[M], Jinrui Cao[M], Om R. Gatla[M], Muhammad Hameed[M], and Mai Zheng. The 8th Annual Non-Volatile Memories Workshop, 2017.

DOENet'16 [2] **Rethinking Networking in a Non-volatile, Heterogeneous World**. Satyajayant Misra and Mai Zheng[M]. Department of Energy (DOE) Workshop on Network Research Problems and Challenges 2025, 2016.

NSFCloud'14 [1] **A Reliability Analysis Framework for Cloud Storage Systems**. Mai Zheng[M], Joseph Tucek, Feng Qin, and Mark Lillibridge. National Science Foundation (NSF) Workshop on Experimental Support for Cloud Computing, 2014.

Public Technical Reports

arXiv'25 [8] **Analyzing Configuration Dependencies of File Systems**. Tabassum Mahmud[M], Om R. Gatla[M], Duo Zhang[M], Carson Love[M], Ryan Bumann[M], Varun S Girimaji[M], and Mai Zheng[M]. arxiv.org/abs/2504.15293, 2025.

arXiv'25 [7] **Revisiting Computational Storage for Data Integrity and Security**. Chao Shi[M], Anthony Manschula[M], Tabassum Mahmud[M], Zeren Yang[M], Mai Zheng[M], Yong Chen, Jim Wayda, Matthew Wolf, Byungwoo Bang. arxiv.org/abs/2504.15293, 2025.

arXiv'23 [6] **PROV-IO+: A Cross-Platform Provenance Framework for Scientific Data on HPC Systems**. Runzhou Han[M], Mai Zheng[M], Suren Byna, Houjun Tang, Bin Dong, Dong Dai, Yong Chen, Dongkyun Kim, Joseph Hassoun, David Thorsley, Matthew Wolf. arxiv.org/abs/2308.00891, 2023.

arXiv'23 [5] **Understanding Persistent-Memory Related Issues in the Linux Kernel**. Om R. Gatla[M], Duo Zhang[M], Wei Xu[M], and Mai Zheng[M]. arxiv.org/abs/2307.040953, 2023.

Dagstuhl'22 [4] **Towards Bug-Free DBMS Ecosystems**. Mai Zheng[M], Jack Clark, and Miryung Kim. Report of Dagstuhl Seminar 21442: Ensuring the Reliability and Robustness of Database Management Systems, Volume 11, Issue 10, 2022.

arXiv'20 [3] **On Failure Diagnosis of the Storage Stack**. Duo Zhang[M], Om R. Gatla[M], Runzhou Han[M], and Mai Zheng[M]. arXiv: 2005.02547v1 [cs.OS], 2020.

arXiv'19 [2] **Nature of System Calls in CPU-centric Computing Paradigm**. Viacheslav Dubeyko, Om R. Gatla[M], and Mai Zheng[M]. arXiv: 1903.04075v1 [cs.OS], 2019.

NSF-Storage'18 [1] **Data Storage Research Vision 2025**. George Amvrosiadis, Ali R. Butt, Vasily Tarasov, Erez Zadok, Ming Zhao, Irfan Ahmad, Remzi H. Arpaci-Dusseau, Feng Chen, Yiran Chen, Yong Chen, Yue Cheng, Vijay Chidambaram, Dilma Da Silva, Angela Demke-Brown, Peter Desnoyers, Jason Flinn, Xubin He, Song Jiang, Geoff Kuenning, Min Li, Carlos Maltzahn, Ethan L. Miller, Kathryn Mohror, Raju Rangaswami, Narasimha Reddy, David Rosenthal, Ali Saman Tosun, Nisha Talagala, Peter Varman, Sudharshan Vazhkudai, Avani Waldani, Xiaodong Zhang, Yiying Zhang, and Mai Zheng[M]. Technical Report on NSF Visioning Workshop on Data Storage Research, 2018.

STUDENT MENTORING & WORKFORCE DEVELOPMENT

[1 Postdoc, 9 Ph.D. Mentees, 19 Master Mentees, 22 Undergraduate Interns, 10 Senior Design Teams]

Current Students

Ph.D. Chao Shi
Wei Xu
Roop Kiran
Ahmed Tayseer Fouad Dajani

Master Varun S. Girimaji
Joshua John
Vidhya Mannathu Parambil

Undergraduate Aaron Trelstad
Zeren Yang (University of Wisconsn-Madison)

Former Students

Postdoc [1] Sarath Babu, 2021 - 2025 (Co-advise with Dr. Hongwei Zhang for **arawireless.org**)

Ph.D. [5] Tabassum Mahmud, Ph.D.(ISU) 2025
[4] Runzhou Han, Ph.D.(ISU) 2024
[3] Duo Zhang, Ph.D.(ISU) 2023 [→ Postdoc Scholar@University of California, Merced]
[2] Om R. Gatla, Ph.D.(ISU) 2022 [→ SK Hynix]
[1] Jinrui Cao, Ph.D.(NMSU) 2020 [→ Tenure-Track Assistant Professor@The State University of New York (SUNY) at Plattsburgh]

Master [16] Roop Kiran, M.S. program, 2024-2025 [→ Ph.D. Program @ISU]
[15] Manish Manepalli, M.S. program, 2023 [→ Ph.D. Program @ISU]
[14] Jacob Betsworth, M.S.(ISU) 2023 [→ Wittern Group]
[13] Kajal Kattige, M.S.(ISU) 2022 [→ ASML]
[12] Haolun Ping, M.S.(ISU) 2022 [→ Fortinet]
[11] Nidhi Milind Dalvi, M.S.(ISU) 2022 [→ Inspire Medical Systems]
[10] Siyuan Lu, M.S.(ISU) 2021 [→ ASML]
[9] Prakhar Bansal, M.S.(ISU) 2020 [→ AeroSpike]
[8] Chander B. Gupta, M.S.(ISU) 2020 [→ Intel]
[7] Satya Prakash, M.S.(ISU) 2020 [→ Qualcomm]
[6] Ryan Chartier, M.S.(NMSU) 2019 [→ Allscripts]
[5] Chase Gilbert, M.S.(NMSU) 2018 [→ Honeywell Aerospace]
[4] Yuan Xu, M.S.(NMSU) 2018 [→ Microsoft]
[3] Muhammad Hameed, M.S.(NMSU) 2018 [→ Self-Employed]
[2] Simeng Wang, M.S.(NMSU) 2017 [→ Meituan]
[1] Om R. Gatla, M.S.(NMSU) 2017 [→ Ph.D. Program @ISU]

Undergraduate	[20] Taylor Bauer (ISU), Spring 2025
	[19] Jashwanth Kumar Komanabelli (ISU), Fall 2024
	[18] Hang Thang (ISU), Summer 2024
	[17] Ella Cook (ISU), Fall 2023
	[16] Varun Advani (ISU), Summer 2023
	[15] Michael Less (ISU), Summer 2023
	[14] Varun S. Girimaji (PES University), Summer 2023, [→ MS Program @ISU]
	[13] Carson Love (ISU, NSF REU), 2022 – 2023 [→ PwC]
	[12] Ryan Bumann (ISU, NSF REU), 2022 – 2023 [→ Vermeer]
	[11] Katie Wolf (ISU), 2021
	[10] Aaron Goff (ISU), 2021 [→ ITS @ISU]
	[9] Joshua Kalyanapu (ISU), 2021 [→ Ph.D. Program @NCSU]
	[8] Philip Ma (Grinnell College), 2021 [→Columbia University]
	[7] Jesrik Gomez (ISU), 2020 [→ Western Digital]
	[6] Zhenyu Zhao (ISU), 2019 [→ Google]
	[5] Yealim Sung (ISU), 2019 [→ TTA]
	[4] Chelsea Deane (George Washington Univ., NSF REU), 2017
	[3] Kristopher Chesney (California State Univ., NSF REU), 2017
	[2] Danny V. Murillo (Mesa Community College, NSF REU), 2016
	[1] Yiliang Shi (U. of Utah, NSF REU), 2016 [→ Ph.D. Program @Columbia University]
Senior Design Team	[10] sdmay25-38 (7 students), [9] sddec24-09 (4 students), [8] sdmay24-41 (7 students), [7] sddec22-09 (4 students), [6] sdmay22-22 (7 students), [5] sddec21-03 (5 students), [4] sddec20-07 (6 students), [3] sdmay20-02 (5 students), [2] sddec19-11 (5 students), [1] sdmay19-02 (5 students)
Visitor	Chunxue Zuo, Visiting PhD Student (HUST), 2019 – 2020
	Xining Yuan, M.S. Intern (Northwestern University), 2023

TEACHING

[Student Course Surveys: All above departmental average]

ISU CprE3080	Operating Systems: Principles and Practice (Fall'18 - present)
ISU CprE5630	Advanced Data Storage Systems (Spring'20 - present)
ISU CprE5880	Embedded Computer Systems (Spring'19)
NMSU CS579	Special Topics: Reliable Storage Systems (Fall'17)
NMSU CS579	Special Topics: Modern Storage Systems: Flash, Cloud, & Beyond (Spring'16)
NMSU CS574	Operating Systems II (Spring'17, Spring'18)
NMSU CS474	Operating Systems I (Fall'15, Fall'16)
NMSU CS573	Computer Architecture II (Fall'17)
NMSU CS473	Computer Architecture I (Spring'18)
NMSU CS491	Parallel Programming (Fall'16)
OSU CSE4251	The UNIX Programming Environment (Fall'14, Spring'15)
OSU CSE5433	Operating Systems Labs (Spring'13)
USTC EE4303	Embedded Systems Labs (Spring'08)

GOVERNMENT & INDUSTRY FUNDING

2024 **National Science Foundation (NSF)**: *Collaborative Research: CSR: Medium: A System Perspective of Blockchain Fault Tolerance: Foundations, Modeling, and Measurement*. ISU PI Mai Zheng, Co-PI Myra B. Cohen; UW-Madison PI Remzi H. Arpaci-Dusseau. 2024 - 2028.

2023 **US Ignite**: *ARA Launchpad: Open Wireless Platforms, Data and Co-Prototyping for Integrative Research and Community Building*. PI Hongwei Zhang, Co-PIs Daji Qiao, Mohamed Selim, Mai Zheng, Yong Guan. 2023 - 2026.

2023 **CloudBank**: Commercial Cloud Research Credits. PI Mai Zheng, 2023 - 2024.

2022 **Samsung Advanced Institute of Technology (SAIT)**: *Samsung Global Research Outreach (GRO) Award: Analyzing the Blast Radius Problem of SSD Failures on HPC Systems*. Sole PI Mai Zheng, 2022 - 2023.

2022 **CloudBank**: Commercial Cloud Research Credits. Sole PI Mai Zheng, 2022 - 2023.

2022 **Google**: Google Cloud Platform (GCP) Research Credits. Sole PI Mai Zheng, 2022.

2021 **National Science Foundation (NSF)**, **National Institute of Food and Agriculture (NIFA)**, **US Ignite**, & **PAWR Industry Consortium**: *ARA: Wireless Living Lab for Smart and Connected Rural Communities*. PI Hongwei Zhang, Co-PIs Ahmed Kamal, Daji Qiao, Mai Zheng, Yong Guan. 2021 - 2026.

2020 **National Science Foundation (NSF)**: *CAREER: Towards Full-Stack Crash Consistency*. Sole PI Mai Zheng, 2020 - 2025.

2020 **National Science Foundation (NSF)** & **US Ignite**: *Planning: ARA: Wireless Living Lab for Smart and Connected Rural Communities*. PI Hongwei Zhang, Co-PIs Ahmed Kamal, Daji Qiao, Mai Zheng, Yong Guan. 2020.

2019 **Western Digital Research (WD) & International Disk Drive Equipment and Materials Association**: IDEMA Research Award. Sole PI Mai Zheng, 2019.

2019 **National Science Foundation (NSF)**: *Collaborative Research: A Parallel Graph-Based Paradigm for HPC Parallel File System Checkers*. ISU PI Mai Zheng; UNCC PI Dong Dai. 2019 - 2023.

2018 **Western Digital Research (WD) & International Disk Drive Equipment and Materials Association**: IDEMA Research Award. Sole PI Mai Zheng, 2018.

2017 **National Science Foundation (NSF)**: *Collaborative Research: Uncovering Vulnerabilities in Parallel File Systems for Reliable High Performance Computing*. NMSU/ISU PI Mai Zheng; TTU PI Yong Chen, Co-PI Dong Dai. 2017 - 2021.

2016 **National Science Foundation (NSF)**: *CRII: Towards Pinpointing the Root Causes of Failures in Flash-based Storage Systems*. Sole PI Mai Zheng, 2016 - 2020.

PROFESSIONAL TALKS

ACCORD [20] **Analyzing Configuration Dependencies of File Systems for Fun and Profit.** *Host: Dr. Myra Cohen & Dr. Paul Gazzillo, The 1st Workshop on A Community for Configurability Open Research and Development (ACCORD)*, Zoom, March, 2024.

Samsung [19] **Scrutinizing Latent Defects in HPC Storage Systems for RAS Optimizations.** *Host: Dr. Yong Chen, Samsung*, Zoom, March, 2024.

Tsinghua [18] **A Bug's Life vs. A Byte's Life: Systems Approaches to Enhance Data Integrity and Understandability.** *Host: Dr. Youyou Lu, Tsinghua University*, January, 2024.

Samsung [17] **ECFault: A Systematic Framework for Analyzing Erasure Coded Storage Systems.** *Host: Dr. Yong Chen, Samsung*, Zoom, July, 2023.

Alibaba [16] **A Bug's Life vs. A Byte's Life: Systems Approaches to Enhance Data Integrity and Understandability.** *Host: Dr. Qing Li, Alibaba*, Virtual, Feb, 2023.

ByteDance [15] **A Bug's Life vs. A Byte's Life: Systems Approaches to Enhance Data Integrity and Understandability.** *Host: Dr. Tongping Liu, ByteDance & UMass Amherst*, Virtual, Nov, 2022.

UW-Madison [14] **A Bug's Life vs. A Byte's Life: Systems Approaches to Enhance Data Integrity and Understandability.** *Host: Dr. Remzi Arpaci-Dusseau, Department of Computer Sciences, University of Wisconsin - Madison*, Madison, WI, Oct, 2022.

Samsung [13] **Analyzing the Blast Radius Problem of SSD Failures on HPC Storage Systems via Holistic Testbed Framework.** *Host: Dr. Yong Chen, Samsung*, Zoom, July, 2022.

IDEMA -virtual [12] **Heterogenous Memory Management: Design Tradeoffs for Performance & Durability.** *Host: Dr. Cyril Guyot, IDEMA Advanced Storage Research Committee (ASRC) Spring Meeting*, Virtual, 2020.

IDEMA -WD [11] **Heterogenous Memory Management.** *Host: Dr. Cyril Guyot, IDEMA Advanced Storage Research Committee (ASRC) Spring Meeting at Western Digital (WD) Research*, Milpitas, CA, October 2019.

IDEMA-Seagate [10] **System Performance Improvements through DRAM Replacement by NVM.** *Host: Dr. Cyril Guyot, IDEMA Advanced Storage Research Committee (ASRC) Spring Meeting at Seagate*, Fremont, CA, March 2019.

PDSW [9] **Understanding SSD Reliability in Large-Scale Cloud Systems.** *The 3rd ACM/IEEE Joint International Workshop on Parallel Data Storage and Data Intensive Scalable Computing Systems (PDSW-DISCS) at ACM/IEEE Supercomputing (SC)*, Dallas, TX, 2018.

Linux Summit [8] **Robustness of File System Checkers.** *USENIX Research in Linux File and Storage Technologies Summit (Linux FAST Summit)*, Santa Clara, CA, 2017.

DOE-Net [7] **Rethinking Networking in a Non-volatile, Heterogeneous World.** *Department of Energy (DOE) Workshop on Network Research Problems and Challenges*, Bethesda, MD, 2016.

SDC [6] **Torturing Databases for Fun and Profit.** *SNIA Storage Developer Conference (SDC)*, Santa Clara, CA, 2015.

NSF-Cloud [5] **A Reliability Analysis Framework for Cloud Storage Systems.** *National Science Foundation (NSF) Workshop on Experimental Support for Cloud Computing*, Arlington, VA, 2014.

OSDI [4] **Torturing Databases for Fun and Profit.** *The 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, Broomfield, CO, 2014.

FAST [3] **Understanding the Robustness of SSDs under Power Fault.** *The 11th USENIX Conference on File and Storage Technologies (FAST)*, San Jose, CA, 2013.

HP Labs [2] **Understanding the Robustness of SSDs under Power Fault.** *Host: Dr. Joseph Tucek, HP Labs*, Palo Alto, CA, 2013.

PPoPP [1] **GRace: A Low Overhead Mechanism for Detecting Data Races in GPU Programs.** *The 16th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming (PPoPP)*, San Antonio, TX, 2011.

PROFESSIONAL SERVICES

Book: Reviewer & Question Writer

MOS Modern Operating Systems (5th edition) by Andrew S. Tanenbaum and Herbert Bos, Publisher: Pearson (ISBN-13: 9780137618880), 2022.

Journal: Editorial Board

TBench BenchCouncil Transactions on Benchmarks, Standards and Evaluations, since 2022.

Journal: Reviewer

CSUR [46] ACM Computing Surveys, Jun. 2025.

TOS [45] ACM Transactions on Storage, Feb. 2025.

TC [44] IEEE Transactions on Computers, Dec 2024.
JSC [43] The Journal of Supercomputing, Dec 2024.
TOCS [42] ACM Transactions on Computer Systems, Nov 2024.
TACO [41] ACM Transactions on Architecture and Code Optimization, Nov 2024.
TCC [40] IEEE Transactions on Cloud Computing, Oct 2024.
TACO [39] ACM Transactions on Architecture and Code Optimization, Oct 2024.
TACO [38] ACM Transactions on Architecture and Code Optimization, Jul 2024.
TCC [37] IEEE Transactions on Cloud Computing, Jun 2024.
TOPS [36] ACM Transactions on Privacy and Security, Mar 2024.
TSC [35] IEEE Transactions on Services Computing, Nov 2023.
JPDC [34] Journal of Parallel and Distributed Computing, Nov 2023.
TR [33] IEEE Transactions on Reliability, Nov 2023.
TOS [32] ACM Transactions on Storage, Aug 2023.
TR [31] IEEE Transactions on Reliability, Jun 2023.
TPDS [30] IEEE Transactions on Parallel and Distributed Systems, Jun 2023.
TR [29] IEEE Transactions on Reliability, 2022.
TCC [28] IEEE Transactions on Cloud Computing, 2021.
TPDS [27] IEEE Transactions on Parallel and Distributed Systems, 2021.
TCC [26] IEEE Transactions on Cloud Computing, 2020.
TR [25] IEEE Transactions on Reliability, 2020.
TON [24] ACM/IEEE Transactions on Networking, 2020.
TMPECS [23] ACM Transactions on Modeling and Performance Eval. of Comp. Systems, 2020.
TCC [22] IEEE Transactions on Cloud Computing, 2020.
COMMAG [21] IEEE Communications Magazine, Aug 2020.
COMMAG [20] IEEE Communications Magazine, May 2020.
TR [19] IEEE Transactions on Reliability, Dec 2019.
TPDS [18] IEEE Transactions on Parallel and Distributed Systems, Aug 2019.
TR [17] IEEE Transactions on Reliability, May 2019.
TPDS [16] IEEE Transactions on Parallel and Distributed Systems, Feb 2019.
JPDC [15] Journal of Parallel and Distributed Computing, 2019.
TR [14] IEEE Transactions on Reliability, 2018.
TPDS [13] IEEE Transactions on Parallel and Distributed Systems, Nov 2018.
TPDS [12] IEEE Transactions on Parallel and Distributed Systems, Sept 2018.
TPDS [11] IEEE Transactions on Parallel and Distributed Systems, Aug 2018.
JPDC [10] Journal of Parallel and Distributed Computing, 2018.
TPDS [9] IEEE Transactions on Parallel and Distributed Systems, 2017.
IET [8] IET Computers & Digital Techniques, 2017.
TOS [7] ACM Transactions on Storage, 2016.
TPDS [6] IEEE Transactions on Parallel and Distributed Systems, 2016.
TECS [5] ACM Transactions on Embedded Computer Systems, 2015.
TC [4] IEEE Transactions on Computers, 2015.
TPDS [3] IEEE Transactions on Parallel and Distributed Systems, 2015.
TC [2] IEEE Transactions on Computers, 2014.
TPDS [1] IEEE Transactions on Parallel and Distributed Systems, 2013.

Conference: Technical Program Committee

PDSW	[39] International Parallel Data Systems Workshop (PDSW) at International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), Nov 2025
ATC	[38] External Review Committee, USENIX Annual Technical Conference (ATC), Jul 2025
HPDC-PERMAVOST	[37] Workshop on Performance EngineeRing, Modelling, Analysis, and VisualizatiOn STrategy (PERMAVOST) at ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Jul 2025
ICDCS	[36] Cloud Computing Track, IEEE International Conference on Distributed Computing Systems, Jul 2025
ICDCS	[35] Distributed Operating Systems and Middleware Track, IEEE International Conference on Distributed Computing Systems, Jul 2025
SC	[34] Research/ACM SRC Posters Committee, International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), Nov 2024
PDSW	[33] International Parallel Data Systems Workshop (PDSW) at International Conference for High Performance Computing, Networking, Storage, and Analysis (SC), Nov 2024
SYSTOR	[32] The ACM International Systems and Storage Conference, Sep 2024.
FAST	[31] Artifact Evaluation Committee, USENIX Conference on File and Storage Technologies (FAST), Feb 2024
REX-IO	[30] Workshop on Re-envisioning Extreme-Scale I/O for Emerging Hybrid HPC Workloads, held in conjunction with IEEE Cluster, Oct 2023.
ICDCS	[29] IEEE International Conference on Distributed Computing Systems, Jul 2023.
IPDPS	[28] IEEE International Parallel & Distributed Processing Symposium, May 2023.
NAS	[27] IEEE International Conference on Networking, Architecture, and Storage, 2022.
REX-IO	[26] Workshop on Re-envisioning Extreme-Scale I/O for Emerging Hybrid HPC Workloads, held in conjunction with IEEE Cluster, 2022.
ICDCS	[25] IEEE International Conference on Distributed Computing Systems, 2022.
IPDPS	[24] IEEE International Parallel & Distributed Processing Symposium, 2022.
REUNS	[23] National Workshop for REU Research in Networking and Systems, 2022.
ICDCS	[22] IEEE International Conference on Distributed Computing Systems, 2021.
HiPC	[21] IEEE International Conference on High Performance Computing, Data, and Analytics, 2021.
Bench	[20] BenchCouncil International Symposium on Benchmarking, Measuring and Optimizing, 2021.
REUNS	[19] National Workshop for REU Research in Networking and Systems, 2021.
CCGrid	[18] ACM/IEEE International Symposium on Cluster, Cloud and Internet Computing, 2020.
IPDPS	[17] IEEE International Parallel & Distributed Processing Symposium, 2019.
DAAC	[16] International Workshop on Data-center Automation, Analytics, and Control, held in conjunction with ACM/IEEE Supercomputing (SC), 2019.
REUNS	[15] National Workshop for REU Research in Networking and Systems, 2019.
DAAC	[14] International Workshop on Data-center Automation, Analytics, and Control, held in conjunction with ACM/IEEE Supercomputing (SC), 2018,
HiPC	[13] IEEE International Conference on High Performance Computing, Data, and Analytics, 2018.
MLCS	[12] Workshop on Machine Learning for Computing Systems, 2018.
FiCloud	[11] IEEE International Conference on Future Internet of Things and Cloud, 2018.
FMEC	[10] IEEE International Conference on Fog and Mobile Edge Computing, 2018.
REUNS	[9] National Workshop for REU Research in Networking and Systems, 2018.
HiPC	[8] IEEE International Conference on High Performance Computing, Data, and Analytics, 2017.

IWQoS [7] ACM/IEEE International Symposium on Quality of Service, 2017.

UCC [6] ACM/IEEE International Conference on Utility and Cloud Computing, 2017.

REUNS [5] National Workshop for REU Research in Networking and Systems, 2017.

CCWC [4] IEEE Annual Computing and Communication Workshop and Conference, 2017.

IWQoS [3] ACM/IEEE International Symposium on Quality of Service, 2016.

REUNS [2] National Workshop for REU Research in Networking and Systems, 2016.

DIBS [1] Workshop on Data-Centric Infrastructure for Big Data Science, held in conjunction with IEEE BigData, 2015.

Conference: Organization Committee

HotStorage [9] Sponsorship Co-Chair, ACM Workshop on Hot Topics in Storage and File Systems, 2025

SYSTOR [8] Session Chair (ML & Security), The ACM International Systems and Storage Conference, 2024.

MSST [7] Posters Committee Chair & Session Chair (Flashy Session), 38th International Conference on Massive Storage Systems and Technology, June 2024.

ARA [6] Session Chair, ARA Public Launch Program, Sept 2023.

HPDC [5] Publicity Co-Chair, ACM International Symposium on High-Performance Parallel and Distributed Computing, Jun 2023.

IPDPS [4] Session Chair, IEEE International Parallel & Distributed Processing Symposium, May 2023.

NVMW [3] Session Chair, Annual Non-Volatile Memories Workshop, Mar 2023

HPDC [2] Proceedings Chair, ACM International Symposium on High-Performance Parallel and Distributed Computing, 2018.

DAAC [1] Proceedings Chair, International Workshop on Data-center Automation, Analytics, and Control, 2018.

Grant Reviewer/Panelist

NSF [9] National Science Foundation, 2025.

NSF [8] National Science Foundation, 2024-c.

NSF [7] National Science Foundation, 2024-b.

NSF [6] National Science Foundation, 2024-a.

NSF [5] National Science Foundation, 2020-b.

NSF [4] National Science Foundation, 2020-a.

NSF [3] National Science Foundation, 2018.

NSF [2] National Science Foundation, 2016.

KSEF [1] Kentucky Science & Engineering Foundation, 2016.

Others

Campus Representative of USENIX Association at ISU, 2018 – 2025.

Campus Representative of USENIX Association at NMSU, 2016 – 2018.

Member of ACM, IEEE, USENIX.