Ningfang Mi

Associate Professor
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RESEARCH INTERESTS

Capacity Planning; Resource Management; Storage Systems, MapReduce/Spark Scheduling; Cloud Computing; Performance Evaluation; Workload Characterization; Simulation; Virtualization.

EDUCATION

Ph.D. in Computer Science 2009
College of William and Mary, Williamsburg, VA, USA Supervisor: Evgenia Smirni
M.S. in Computer Science 2004
University of Texas at Dallas, Richardson, TX, USA Supervisor: Ovidiu Daescu
B.S. in Computer Science 2000
Nanjing University, Nanjing, Jiangsu, China Supervisor: Shijie Cai

PROFESSIONAL EXPERIENCE

Associate Professor
Northeastern University, Boston, MA, USA Sept. 2016 - present
Assistant Professor
Northeastern University, Boston, MA, USA Aug. 2009 - Aug. 2016
Research Associate
Hewlett-Packard Laboratories, Palo Alto, CA, USA Jun. 2007 - May 2009
Research Associate
Seagate Research, Pittsburgh, PA, USA Oct. 2006 - Jan. 2007
Research Assistant
College of William and Mary, Williamsburg, VA, USA Aug. 2005 - Aug. 2009
Teaching Assistant
College of William and Mary, Williamsburg, VA, USA Aug. 2004 - Aug. 2005

AWARDS, HONORS, AND FELLOWSHIPS

- 2020 The Outstanding Student Paper Award at IEEE High Performance Extreme Computing Conference (HPEC)
- 2018 The Best Paper Award at IEEE International Conference on Cloud Computing (IEEE CLOUD)

- 2017 The Best Paper Award at 36th IEEE International Performance Computing and Communications Conference (IPCCC)
- 2015 The NSF Faculty Early Career Development (CAREER) Award ($459,588)
- 2014 The Air Force's Young Investigator Research Program (YIP) Award ($353,050)
- 2010 The IBM Faculty Award ($20,000)
- 2015 The Best Student Paper Runner-up Award at the 34rd IEEE International Performance Computing and Communications Conference (IPCCC'15), Nanjing, China, 2015, for the paper titled "OMO: Optimize MapReduce Overlap with a Good Start (Reduce) and a Good Finish (Map)"
- 2010 The Best Student Paper Award at the 22nd International Teletraffic Congress (ITC-22), Amsterdam, The Netherlands, 2010, for the paper titled "Fastrack for Taming Burstiness and Saving Power in Multi-Tiered Systems"
- 2009 The Computer Management Group (CMG) Graduate Fellowship
- 2008 The Best Paper Award at the ACM/IFIP/USENIX 9th International Middleware Conference (Middleware'08), Leuven, Belgium, 2008, for the paper titled "Burstiness in Multi-Tier Applications: Symptoms, Causes, and New Models"
- 2008 Incogen Award for Excellence in Scholarship in the Natural and Computational Sciences at the 7th Annual Graduate Research Symposium of the College of William and Mary
- 2000 The Fujitsu Fellowship for Outstanding Students at Nanjing University
- 1998 The Luopu Fellowship for Outstanding Students at Nanjing University
- 1996 The President Fellowship for Freshman at Nanjing University

GRANTS

- **External Research Grant**

1. **2024 NSF #OAC-2417715 PI**
   "Collaborative Research: CyberTraining: Implementation: Medium: AI4EDU: Cloud Infrastructure-Enabled Training for AI in Educational Research and Assessment"
   Total Value: $1,000,000 (Direct+Indirect) My NEU share: $214,565 (100%)
   Start date: Sept. 01, 2024 Expiration date: Aug. 31, 2028
2. **2020 NSF #CNS-2008072 PI**
   "Collaborative Research: CNS core: OAC core: Small: New Techniques for I/O Behavior Modeling and Persistent Storage Device Configuration"
   Total Value: $500,000 (Direct+Indirect) My NEU share: $244,927 (100%)
   Start date: May 01, 2020 Expiration date: April 30, 2025
3. **2020 Samsung Semiconductor Inc. Research Grant PI**
   "Automatic NVMeOF Zoning Configuration and Adjustment for Ethernet-SSD Based Storage Environments"
   Total Value: $200,000 (Direct+Indirect) My NEU share: $115,000 (100%)
   Start date: September 1, 2020 Expiration date: August 31, 2022
4. **2017 Samsung Semiconductor Inc. Research Grant PI**
   "Dynamic Resource Allocation Scheme for Virtualized Storage with Flash-Memory Resources"
   Total Value: $200,000 (Direct+Indirect) My NEU share: $200,000 (100%)
   Start date: December 1, 2017 Expiration date: November 30, 2019

5. **2015 NSF Faculty Early Career Development (CAREER) Award PI**
   "Capacity Planning Methodologies for Large Clusters with Heterogeneous Architectures and Diverse Applications"
   Total Value: $459,588 (Direct+Indirect) My NEU share: $459,588 (100%)
   Start date: April 1, 2015 Expiration date: March 31, 2022
6. **2015 Mathworks Microgrant PI**
   "Parallel Processing of Machine Learning Algorithms"
   Total Value: $20,000 (Direct) My NEU share: $10,000 (50%)
   Start date: May 1, 2015 Expiration date: December 31, 2015
7. **2014 Air Force's Young Investigator Research Program (YIP) Award PI**
   "Creating An Integrated Management Layer To Administer Heterogeneous Resources in Dynamic Workflow Clusters"
   Total Value: $353,050 (Direct+Indirect) My NEU share: $353,050 (100%)
   Start date: July 1, 2014 Expiration date: June 30, 2017
8. **2012 NSF #CNS-1251129 PI**
   "CSR:EAGER:An Integrated Framework for Performance and Reliability in Large-scaled Computing Systems"
   Total Value: $272,351 (Direct+Indirect) My NEU share: $272,351 (100%)
   Start date: September 1, 2012 Expiration date: August 31, 2014
9. **2010 IBM Faculty Award PI**
   "Temporal Dependence-Based Workload Prediction Techniques For Enterprise Storage Systems"
   Total Value: $20,000 (Direct) My NEU share: $20,000 (100%)
10. **2010 Amazon Web Services in Education Research Grant PI**
    "ArA-C2E: Adaptive Resource Allocation for Cloud Computing Environments under Bursty Workloads"
    Total Value: $7,500 (credits) My NEU share: $7,500 (100%)

- **Internal Research Grant**

1. **2014 Northeastern TIER 1 Internal Research Grant Co-PI**
   "Mining Big Heterogeneous Networks: Scalable Parallel Algorithms and Effective Scheduling"
   Total Value: $47,377 (Direct+Indirect) My share: $15,634 (33%)
   Start date: July 1, 2014 Expiration date: June 30, 2015

- **Hardware Devices Grant**

1. 4 Key Value SSD from Samsung Semiconductor Inc. value $2,800 Received 2019
2. 6 NVMe SSD PM963 from Samsung Semiconductor Inc value $6,522 Received 2018
3. 1 SSD w. M.2 PCIe Base from Samsung Semiconductor Inc value $600 Received 2017

PUBLICATIONS

Refereed Journal Publications

1. Danlin Jia, Geng Yuan, Yingmin Xie, Xue Lin, and Ningfang Mi, "A Data-Loader Tunable Knob to Shorten GPU Idleness for Distributed Deep Learning", accepted, ACM Transactions on Architecture and Code Optimization (TACO), 2024.
2. Danlin Jia , Li Wang, Natalia Valencia, Janki Bhimani, Bo Sheng, and **Ningfang Mi**, "Learning-based Dynamic Memory Allocation Schemes for Apache Spark Data Processing", accepted, IEEE Transactions on Cloud Computing (**TCC**), 12(1): 13-25, 2024.

3. Janki Bhimani, Adnan Maruf, **Ningfang Mi**, Rajinikanth Pandurangan, and Vijay Balakrishnan, "Auto-Tuning Parameters for Emerging Multi-Stream Flash-Based Storage Drives Through New I/O Pattern Generations", accepted, in *IEEE Transactions on Computers (**TC**)*, 71(2): 309 - 322, 2022.
4. Janki Bhimani, Zhengyu Yang, Jingpei Yang, Adnan Maruf, **Ningfang Mi**, Rajinikanth Pandurangan, Changho Choi, and Vijay Balakrishnan, "Automatic Stream Identification to Improve Flash Endurance in Data Centers", ACM Transactions on Storage (**TOS**), 18(2): 1-29, 2022.
5. Zhengyu Yang, Manu Awasthi, Mrinmoy Ghosh, Janki Bhimani, and **Ningfang Mi**, "I/O Workload Management for All-Flash Datacenter Storage Systems Based on Total Cost of Ownership", IEEE Transactions on Big Data (**TBDSI**), 8(2): 332-345, 2022.
6. Allen Yang, Jiayin Wang, Ying Mao, Yi Yao, **Ningfang Mi**, and Bo Sheng, "Optimizing Internal Overlaps by Self-Adjusting Resource Allocation in Multi-Stage Computing Systems", IEEE Access, 9: 88805 - 88819, 2021.
7. Yi Yao, Han Gao , Jiayin Wang, Bo Sheng, and **Ningfang Mi**, "New Scheduling Algorithms for Improving Performance and Resource Utilization in Hadoop YARN Clusters", IEEE Transactions on Cloud Computing (**TCC**), 9(3): 1158 - 1171, 2021.
8. Zhengyu Yang, Yi Yao, Han Gao, **Ningfang Mi**, and Bo Sheng, "New YARN Non-Exclusive Resource Management Scheme Through Opportunistic Idle Resource Assignment", IEEE Transactions on Cloud Computing (**TCC**), 9(2): 696-709, 2021.
9. Janki Bhimani, **Ningfang Mi**, Miriam Leeser, and Zhengyu Yang, "New Performance Modeling Methods for Parallel Data Processing Applications", in *ACM Transactions on Modeling and Computer Simulation (**TOMACS**)*, 29(3): 15:1–15:24, 2019.
10. Rundong Li, **Ningfang Mi**, Mirek Riedewald, Yizhou Sun, and Yi Yao, "Abstract cost models for distributed data-intensive computations", in *Distributed and Parallel Databases (**DAPD**)*, 37(3): 411-439, 2019. (impact factor of 1.278)
11. Janki Bhimani, Zhengyu Yang, **Ningfang Mi**, Jingpei Yang, Qiumin Xu, Manu Awasthi, Rajinikanth Pandurangan, and Vijay Balakrishnan, "Docker Container Scheduler for I/O Intensive Applications running on NVMe SSDs", in *IEEE Transactions on Multi-Scale Computing Systems (**TMSCS**)*, 4(3): 313-326, 2018.
12. Zhengyu Yang, Janki Bhimani, Yi Yao, Cho-Hsien Lin, Jiayin Wang, **Ningfang Mi**, and Bo Sheng, "AutoAdmin: Admission Control in YARN Clusters Based on Dynamic Resource Reservation", in *Scalable Computing: Practice and Experience, Special Issue on Advances in Emerging Wireless Communications and Networking (**SCPE**)*, 19(1): 53-67, 2018.
13. Zhengyu Yang, Yufeng Wang, Janki Bhimani, Chiu C. Tan, and **Ningfang Mi**, "EAD: Elasticity Aware Deduplication Manager for Datacenters with Multi-tier Storage Systems", in *Cluster Computing (**CC**)*, 21(3): 1561-1579, 2018.
14. Zhengyu Yang, Janki Bhimani, Jiayin Wang, David Evans, and Ningfang Mi, "Automatic and Scalable Data Replication Manager in Distributed Computation and Storage Infrastructure of Cyber-Physical Systems", in *Scalable Computing: Practice and Experience, Special Issue on Communication, Computing, and Networking in Cyber-Physical Systems (**SCPE**)*, 18(4): 291-312, 2017.
15. Jianzhe Tai, Deng Liu, Zhengyu Yang, Xiaoyun Zhu, Jack Lo, and **Ningfang Mi**, "Improving Flash Resource Utilization at Minimal Management Cost in Virtualized Flash-based Storage Systems", in *IEEE Transactions on Cloud Computing (**TCC**)*, 5(3): 537-549, 2017.
16. Yi Yao, Jiayin Wang, Bo Sheng, Chiu C. Tan, and **Ningfang Mi**, " Self-Adjusting Slot Configurations for Homogeneous and Heterogeneous Hadoop Clusters", in *IEEE Transactions on Cloud Computing (**TCC**)*, 5(2): 344-357, 2017.
17. Yi Yao, Bo Sheng, and **Ningfang Mi**, "A New Packet Scheduling Algorithm for Access Points in Crowded WLANs", in *Journal of Ad Hoc Networks (**Ad Hoc**)*, 36(1):100-110, 2016.

18. Jianzhe Tai, Bo Sheng, Yi Yao, and **Ningfang Mi**, "SLA-Aware Data Migration in A Shared Hybrid Storage Cluster", in *Journal of Cluster Computing (**CC**)*, 18(4):1581-1593, 2015.
19. Yi Yao, Jianzhe Tai, Bo Sheng, and **Ningfang Mi**, "LsPS: A Job Size-Based Scheduler for Efficient Assignments in Hadoop", in *IEEE Transactions on Cloud Computing (**TCC**)*, 3(4):411-424, 2015.
20. Jianzhe Tai, Zhen Li, Jiahui Chen, and **Ningfang Mi**, "Load balancing for cluster systems under heavy-tailed and temporal dependent workloads", in *Simulation Modelling Practice and Theory (**SIMPAT**)*, 44: 63-77, 2014.
21. Giuliano Casale, **Ningfang Mi**, Ludmila Cherkasova, and Evgenia Smirni, "Dealing with Burstiness in Multi-Tier Applications: New Models and Their Parameterization", in *IEEE Transactions on Software Engineering (**TSE**)*, 33(5): 1040-1053, 2012.
22. **Ningfang Mi**, Giuliano Casale, and Evgenia Smirni"ASIdE: Using Autocorrelation-Based Size Estimation for Scheduling Bursty Workloads", in *IEEE Transactions on Network and Service Management (**TNSM**)*, 9(2): 198-212, 2012.
23. **Ningfang Mi**, Giuliano Casale, Ludmila Cherkasova, and Evgenia Smirni, "Sizing Multi-Tier Systems with Temporal Dependence: Benchmarks and Analytic Models", in *Journal of Internet Services and Application (**JISA**)*, 1(2): 117-134, 2010.
24. Giuliano Casale, **Ningfang Mi**, and Evgenia Smirni, "Model-Driven System Capacity Planning Under Workload Burstiness", in *IEEE Transactions on Computers (**TC**)*, 59(1): 66-80, 2010.
25. Alma Riska, **Ningfang Mi**, Evgenia Smirni, and Giuliano Casale, "Feasibility regions: exploiting tradeoffs between power and performance in disk drives", in *ACM SIGMETRICS Performance Evaluation Review*, 37(3):43-48, 2010.
26. Ludmila Cherkasova, Kivanc Ozonat, **Ningfang Mi**, Julie Symons, and Evgenia Smirni, "Automated Anomaly Detection and Performance Modeling of Enterprise Applications", in *ACM Transactions on Computer Systems (**TOCS**)*, Vol. 27, Issue 3, November 2009.
27. **Ningfang Mi**, Alma Riska, Qi Zhang, Evgenia Smirni, and Eric Riedel, "Efficient Management of Idleness in Systems", in *ACM Transactions on Storage (**TOS**)*, Vol. 5, No. 2, Article 4, June 2009.
28. Qi Zhang, Ludmila Cherkasova, **Ningfang Mi**, and Evgenia Smirni, "A Regression-Based Analytic Model for Capacity Planning of Multi-Tier Applications", in *Journal of Cluster Computing*, Vol 11, No. 3, pp. 197-211, 2008.
29. Qi Zhang, **Ningfang Mi**, Alma Riska, and Evgenia Smirni, "Performance-Guided Load (Un)Balancing Under Autocorrelated Flows", in *IEE'E Transactions on Parallel and Distributed Systems (**TPDS**)*, Vol. 19, No. 2, pp. 652-665, 2008.
30. **Ningfang Mi**, Qi Zhang, Alma Riska, Evgenia Smirni, and Eric Riedel, "Performance Impacts of Autocorrelated Flows in Multi-tiered Systems", in *Performance Evaluation*, Vol 64, No. 9-12, pp. 1082-1101, 2007. Also presented at *the 26th International Symposium on Computer Performance, Modeling, Measurements, and Evaluation (**Performance'07**)*, Cologne, Germany, 2007. Acceptance Rate: 20%.
31. Ovidiu Daescu, **Ningfang Mi**, Chan-Su Shin, and Alexander Wolff, "Farthest-point Queries with Geometric and Combinatorial Constraints", in *Computational Geometry: Theory & Applications*, Vol. 33, No. 3, pp. 174-185, 2006.
32. Danny Z. Chen, Ovidiu Daescu, John Hershberger, Peter M. Kogge, **Ningfang Mi**, and Jack Snoeyink, "Polygonal Path Approximation with Angle Constraints", in *Computational Geometry: Theory & Applications*, Vol. 32, No. 3, pp. 173-187, 2005.
33. Ovidiu Daescu, and **Ningfang Mi**, "Polygonal Path Approximation: a Query Based Approach", in *Computational Geometry: Theory & Applications*, Vol. 30, No. 1, pp. 41-58, 2005.

Highly Selective Conference Publications

1. Allen Yang, Shiyue Hou, Yiming Xie, Bo Sheng, and Ningfang Mi, "PECO: Probabilistic Evaluation-based Client Selection for Federated Learning with Overlapping Clients", in 27th IEEE International Conference on High Performance Computing and Communications (**HPCC**), Aug, 2025.
2. Shiyue Hou, Pavana Prakash, Rolando Pablo Hong Enriquez, Ningfang Mi, Alex Veprinsky, and Dejan Milojicic, "Carbon Friendly Federated Learning Framework for Optimized Distributed Storage Systems", in AI Crossroads: Systems, Energy, and Applications Workshop at ACM SIGMETRICS, June, 2025.
3. Li Wang, Yankai Jiang, and Ningfang Mi, "Advancing Serverless Computing for Scalable AI Model Inference: Challenges and Opportunities", in 10th International Workshop on Serverless Computing (**WoSC10**), Dec., 2024.
4. Shiyue Hou, Nathan Tallent, Li Wang, and Ningfang Mi, "Performance Analysis of Data Processing in Distributed File Systems with Near Data Processing", in 11th International Symposium on Networks, Computers and Communications (**ISNCC'24**), Oct. 2024.
5. Yiming Xie, Pinrui Yu, Geng Yuan, Xue Lin, and Ningfang Mi, "Adaptive Homogeneity-Based Client Selection Policy for Federated Learning", in 11th International Symposium on Networks, Computers and Communications (**ISNCC'24**), Oct. 2024.
6. Li Wang, Shiyue Hou, Yiming Xie, and Ningfang Mi, "Uncovering The Impact of Bursty Workloads on System Performance in Serverless Computing", in 11th International Symposium on Networks, Computers and Communications (**ISNCC'24**), Oct. 2024. i
7. Manoj Saha, Danlin Jia, Janki Bhimani and **Ningfang Mi**, "MoKE: Modular Key-value Emulator for Realistic Studies on Emerging Storage Devices", in IEEE 16th International Conference on Cloud Computing (**CLOUD'23**), June, 2023. (Work-in-Progress (WiP) Track)
8. Danlin Jia, Yiming Xie, Li Wang, Xiaoqian Zhang, Allen Yang, Xuebin Yao, Mahsa Bayati, Pradeep Subedi, Bo Sheng, and **Ningfang Mi**, "SRC: Mitigate I/O Throughput Degradation in Network Congestion Control of Disaggregated Storage Systems", in 37th IEEE International Parallel & Distributed Processing Symposium (**IPDPS'23**), May 2023. Acceptance Rate: 25.7%.
9. Xiaoqian Zhang, Allen Yang, Danlin Jia, Li Wang, Mahsa Bayati, Pradeep Subedi, Xuebin Yao, Bo Sheng, and **Ningfang Mi**, "DIRS: Dynamic Initial Rate Setting in Congestion Control for Disaggregated Storage Systems", in International Conference on Computing, Networking and Communications (**ICNC'23**), Feb. 2023.
10. Danlin Jia, Geng Yuan, Xue Lin and Ningfang Mi, "A Data-Loader Tunable Knob to Shorten GPU Idleness for Distributed Deep Learning", in IEEE 15th International Conference on Cloud Computing (**CLOUD'22**), July 2022. Acceptance Rate: 22.4%.
11. Danlin Jia, Tengpeng Li, Xiaoqian Zhang, Li Wang, Mahsa Bayati, Ron Lee, Bo Sheng, and **Ningfang Mi**, "SNIS: Storage-Network Iterative Simulation for Disaggregated Storage Systems", in 40th IEEE International Performance Computing and Communications Conference (**IPCCC'21**), Oct. 2021. (Short Paper)
12. Janki Bhimani, Jingpei Yang, **Ningfang Mi**, Changho Choi, Manoj Saha, and Adnan Maruf, "Fine-grained control of concurrency within KV-SSDs", in 14th ACM International Systems and Storage Conference (**SYSTOR'21**), Jun. 2021. Acceptance Rate: 30%.
13. Danlin Jia, Manoj Pravakar Saha, Janki Bhimani, and **Ningfang Mi**, "Performance and Consistency Analysis for Distributed Deep Learning Applications", in *39th IEEE International Performance Computing and Communications Conference (**IPCCC'20**)*, Oct. 2020. Acceptance Rate: 29.3%.
14. Mahsa Bayati, Harsh Roogi, Ron Lee, and **Ningfang Mi**, "Deploying Network Key-Value SSDs to Disaggregate Resources in Big Data Processing Frameworks", in *39th IEEE International Performance Computing and Communications Conference (**IPCCC'20**)*, Oct. 2020. Acceptance Rate: 29.3%.

15. Danlin Jia, Mahsa Bayati, Ron Lee, and **Ningfang Mi**, "RITA: Efficient Memory Allocation Scheme for Containerized Parallel Systems to Improve Data Processing Latency", in *the IEEE International Conference on Cloud Computing (**IEEE CLOUD'20**)*, 2020. Acceptance Rate: 20.7%.

16. Mahsa Bayati, Miriam Leeser, and **Ningfang Mi**, "Exploiting GPU Direct Access to Non-Volatile Memory to Accelerate Big Data Processing", in *IEEE High Performance Extreme Computing Conference (**HPEC'20**)*, Waltham, MA, 2020. (**Outstanding Student Paper Award**)

17. Janki Bhimani, Rajinikanth Pandurangan, **Ningfang Mi** and Vijay Balakrishnan, "Emulate Processing of Assorted Database Server Applications on Flash-Based Storage in Datacenter Infrastructures", in *38th IEEE International Performance Computing and Communications Conference (**IPCCC'19**)*, London, United Kingdom, Oct. 2019. Acceptance Rate: 28.4%.

18. Danlin Jia, Janki Bhimani, Nam Nguyen, Bo Sheng and **Ningfang Mi**, "ATuMm: Auto-tuning Memory Manager in Apache Spark", in *38th IEEE International Performance Computing and Communications Conference (**IPCCC'19**)*, London, United Kingdom, Oct. 2019. Acceptance Rate: 28.4%.

19. Janki Bhimani, Tirthak Patel, **Ningfang Mi**, and Devesh Tiwari, "What does Vibration do to Your SSD?", in *2019 Design Automation Conference (**DAC'19**)*, Las Vegas, NV, 2019. Acceptance Rate: 24.3%.

20. Mahsa Bayati, Janki Sharadkumar Bhimani, Ronald Lee and **Ningfang Mi**, "Exploring Benefits of NVMe SSDs for Big Data Processing in Enterprise Data Centers", in *5th International Conference on Big Data Computing and Communications (**BIGCOM'19**)*, Qingdao, China 2019.

21. Janki Bhimani, **Ningfang Mi**, Zhengyu Yang, Jingpei Yang, Rajinikanth Pandurangan, Changho Choi and Vijay Balakrishnan, "Feature Based I/O Stream Identification for Improving Endurance of Multi-Stream SSDs", in *the IEEE International Conference on Cloud Computing (**IEEE CLOUD'18**)*, San Francisco, CA, 2018. Acceptance Rate: 15%. (**Best Paper Award**)

22. Zhengyu Yang, Danli Jia, Stratis Ioannidis, **Ningfang Mi**, and Bo Sheng, "Intermediate Data Caching Optimization for Multi-Stage and Parallel Big Data Frameworks", in *the IEEE International Conference on Cloud Computing (**IEEE CLOUD'18**)*, San Francisco, CA, 2018. Acceptance Rate: 15%.

23. Janki Bhimani, **Ningfang Mi**, and Bo Sheng, "BloomStream: Data Temperature Identification for Flash Based Memory Storage Using Bloom Filters", in *the IEEE International Conference on Cloud Computing (**IEEE CLOUD'18**)*, San Francisco, CA, 2018. Acceptance Rate: 15%.

24. Nam Son Nguyen, Teng Wang, Tengpeng Li, Xiaoqian Zhang, Bo Sheng, **Ningfang Mi**, and Bin Zhao, "OWLBIT: Orchestrating Wireless Transmissions for Launching Big Data Platforms in an Internet of Things Environment", in *the IEEE International Conference on Cloud Computing (**IEEE CLOUD'18**)*, San Francisco, CA, 2018. Acceptance Rate: 15%.

25. Teng Wang, Son Nam Nguyen, Jiayin Wang, Tengpeng Li, Xiaoqian Zhang, **Ningfang Mi**, Bin Zhao, and Bo Sheng, "ROVER: Robust and Verifiable Erasure Code for Hadoop Distributed File Systems", in *the 27th International Conference on Computer Communications and Networks (**ICCCN'18**)*, Hangzhou, China, 2018. Acceptance rate: 25%

26. Zhengyu Yang, Morteza Hoseinzadeh, Ping Wong, John Artoux, Clay Mayers, David Thomas Evans, Rory Thomas Bolt, Janki Bhimani, **Ningfang Mi**, and Steven Swanson, "H-NVMe: A Hybrid Framework of NVMe-based Storage System in Cloud Computing Environment", in *36th IEEE International Performance Computing and Communications Conference (**IPCCC'17**)*, 2017. (**Best Paper Award**)

27. Zhengyu Yang, Morteza Hoseinzadeh, Allen Andrews, Clay Mayers, David Thomas Evans, Rory Thomas Bolt, Janki Bhimani, **Ningfang Mi**, and Steven Swanson, "AutoTiering: Automatic Data Placement Manager in Multi-Tier All-Flash Datacenter", in *36th IEEE International Performance Computing and Communications Conference (**IPCCC'17**)*, 2017.

28. Rundong Li, **Ningfang Mi**,, Mirek Riedewald, Yizhou Sun, and Yi Yao, "A Case for Abstract Cost Models for Distributed Execution of Analytics Operators", in *19th International Conference on Big Data Analytics and Knowledge Discovery (**DaWaK'17**)*, Lyon, France, 2017.

29. Han Gao, Zhengyu Yang, Janki Bhimani, Teng Wang, Jiayin Wang, **Ningfang Mi**, and Bo Sheng, "AutoPath: Harnessing Parallel Execution Paths for Efficient Resource Allocation in Multi-Stage Big Data Frameworks", in *26th International Conference on Computer Communications and Networks (**ICCCN'17**)*, Vancouver, Canada, July 2017. Acceptance Rate: 25.0%.

30. Teng Wang, Jiayin Wang, Son Nam Nguyen, Zhengyu Yang, **Ningfang Mi**, and Bo Sheng, "EA2S2 : An Efficient Application-Aware Storage System for Big Data Processing in Heterogeneous Clusters", in *26th International Conference on Computer Communications and Networks (**ICCCN'17**)*, Vancouver, Canada, July 2017. Acceptance Rate: 25.0%.

31. Janki Bhimani, Ningfang Mi, Miriam Leeser, and Zhengyu Yang, "FiM: Performance Prediction for Parallel Computation in Iterative Data Processing Applications", in *IEEE International Conference on Cloud Computing (**Cloud'17**)*, Honolulu, Hawaii, June 2017. (Applications Track)

32. Jiayin Wang, Teng Wang, Zhengyu Yang, Ying Mao, **Ningfang Mi**, and Bo Sheng, "SEINA: A Stealthy and Effective Internal Attack in Hadoop Systems", in *25th International Conference on Computing, Networking and Communication (**ICNC'17**)*, Silicon Valley, USA, Jan. 2017. Acceptance Rate: 29.0%.

33. Baiyu Chen, Zhengyu Yang, Siyu Huang, Xianzhi Du, Zhiwei Cui, Janki Bhimani, Xin Xie, and **Ningfang Mi**, "Cyber-Physical System Enabled Nearby Traffic Flow Modelling for Autonomous Vehicles", in *36th IEEE International Performance Computing and Communications Conference, Special Session on Cyber Physical Systems: Security, Computing, and Performance (**IPCCC-CPS'17**)*, 2017.

34. Janki Bhimani, Zhengyu Yang, Miriam Leeser, and **Ningfang Mi**, "Accelerating Big Data Applications Using Lightweight Virtualization Framework on Enterprise Cloud", in *IEEE High Performance Extreme Computing Conference (**HPEC'17**)*, Waltham, MA, 2017.

35. Zhengyu Yang, Jianzhe Tai, Janki Bhimani, Jiayin Wang, **Ningfang Mi**, and Bo Sheng, "GREM: Dynamic SSD Resource Allocation In Virtualized Storage Systems With Heterogeneous IO Workloads", in *35th IEEE International Performance Computing and Communications Conference (**IPCCC'16**)*, Las Vegas, NV, Dec. 2016. Acceptance Rate: 24.7%.

36. Janki Bhimani, Jingpei Yang, Zhengyu Yang, **Ningfang Mi**, Qiumin Xu, Manu Awasthi, Rajinikanth Pandurangan, and Vijay Balakrishnan, "Understanding Performance of I/O Intensive Containerized Applications for NVMe SSDs", in *35th IEEE International Performance Computing and Communications Conference (**IPCCC'16**)*, Las Vegas, NV, Dec. 2016. Acceptance Rate: 24.7%.

37. Jiayin Wang, Teng Wang, Zhengyu Yang, **Ningfang Mi**, and Bo Sheng, "eSplash: Efficient Speculation in Large Scale Heterogeneous Computing Systems", in *35th IEEE International Performance Computing and Communications Conference (**IPCCC'16**)*, Las Vegas, NV, Dec. 2016. Acceptance Rate: 24.7%.

38. Zhengyu Yang, Manu Awasthi, Mrinmoy Ghosh, and **Ningfang Mi**, "A Fresh Perspective on Total Cost of Ownership Models for Flash Storage in Datacenters", in *8th IEEE International Conference on Cloud Computing Technology and Science (**CloudCom'16**)*, Luxembourg, Dec. 2016. Acceptance Rate: 25.9%.

39. Yi Yao, Han Gao, Jiayin Wang, **Ningfang Mi**, and Bo Sheng, "OPERA: Opportunistic and Efficient Resource Allocation in Hadoop YARN by Harnessing Idle Resources", in *25th International Conference on Computer Communication and Networks (**ICCCN'16**)*, Waikoloa, Hawaii, Aug. 2016. Acceptance Rate: 30%.

40. Zhengyu Yang, Jiayin Wang, David Evans, and **Ningfang Mi**, "AutoReplica: Automatic Data Replica Manager in Distributed Caching and Data Processing Systems", in *First International*

*workshop on Communication, Computing, and Networking in Cyber Physical Systems (**CCN-CPS'16**)*, Las Vegas, NV, Dec. 2016.

41. Janki Bhimani, Miriam Leeser, and **Ningfang Mi**, "Performance Prediction Techniques for Scalable Large Data Processing in Distributed MPI Systems", in *35th IEEE International Performance Computing and Communications Conference (**IPCCC'16**)*, Las Vegas, NV, Dec. 2016. Poster.
42. Janki Bhimani, Miriam Leeser, and **Ningfang Mi**, "Design Space Exploration of GPU Accelerated Cluster Systems for Optimal Data Transfer Using PCIe Bus", in *IEEE High Performance Extreme Computing Conference (**HPEC'16**)*, Waltham, MA, Sept. 2016.
43. Jiayin Wang, Yi Yao, Ying Mao, Bo Sheng, and **Ningfang Mi**, "OMO: Optimize MapReduce Overlap with a Good Start (Reduce) and a Good Finish (Map)", in *IEEE International Performance Computing and Communications Conference (**IPCCC'15**)*, Nanjing, China, Dec. 2015. Acceptance Rate: 29.0%. (**Best Student Paper Runner-up Award**)
44. Janki Bhimani, Miriam Leeser, and **Ningfang Mi**, "Accelerating K-Means Clustering with Parallel Implementations and GPU Computing", in *IEEE High Performance Extreme Computing Conference (**HPEC'15**)*, Waltham, MA, Sept. 2015.
45. Yi Yao, Jason Lin, Jiayin Wang, **Ningfang Mi**, and Bo Sheng, "Admission Control in YARN Clusters Based on Dynamic Resource Reservation", in *the IFIP/IEEE Integrated Network Management Symposium (**IM'15**)*, Ottawa, Canada, May 2015. (Short paper)
46. Yi Yao, Jiayin Wang, Bo Sheng, Jason Lin, and **Ningfang Mi**, "HaSTE: Hadoop YARN Scheduling Based on Task-Dependency and Resource-Demand", in *the IEEE International Conference on Cloud Computing (**Cloud'14**)*, Anchorage, AK, June 2014. Acceptance Rate: 20.0%.
47. Jiayin Wang, Yi Yao, Ying Mao, Bo Sheng, and **Ningfang Mi**, "FRESH: Fair and Efficient Slot Configuration and Scheduling for Hadoop Clusters", in *the IEEE International Conference on Cloud Computing (**Cloud'14**)*, Anchorage, AK, June 2014. Acceptance Rate: 30.0%. (Applications and Industry Track)
48. Yufeng Wang, Chiu Tan, and **Ningfang Mi**, "Using Elasticity to Improve Inline Data Deduplication Storage Systems", in *the IEEE International Conference on Cloud Computing (**Cloud'14**)*, Anchorage, AK, June 2014. Acceptance Rate: 30.0%. (Applications and Industry Track)
49. Deng Liu, Jianzhe Tai, Jack Lo, Ningfang Mi and Xiaoyun Zhu, "vFRM: Flash Resource Manager in VMware ESX Server", in *the IFIP/IEEE Network Operations and Management Symposium (**NOMS'14**)*, Krakow, Poland, May 2014. Acceptance Rate: 29.0%.
50. Jianzhe Tai, Bo Sheng, Yi Yao, and Ningfang Mi, "Live Data Migration For Reducing SLA Violations In Multi-tiered Storage Systems", in *the IEEE International Workshops on Cloud Analytics (**IWCA'14**)*, Boston, MA, March, 2014.
51. Yi Yao, Jiayin Wang, Bo Sheng and **Ningfang Mi**, "Using a Tunable Knob for Reducing Makespan of MapReduce Jobs in a Hadoop Cluster", in *the Proceedings of the IEEE International Conference on Cloud Computing (**Cloud'13**)*, pp. 1-8, Santa Clara Marriott, CA, June 2013. Acceptance Rate: 19.0%.
52. Yi Yao, Jianzhe Tai, Bo Sheng, and **Ningfang Mi**, "Scheduling Heterogeneous MapReduce Jobs for Efficiency Improvement in Enterprise Clusters", in *the IFIP/IEEE Integrated Network Management Symposium (**IM'13**)*, Ghent, Belgium, May 2013. (Short paper)
53. Zhen Li, Jianzhe Tai, Jiahui Chen, and **Ningfang Mi**, "ADUS:Adaptive Resource Allocation in Cluster Systems under Heavy-Tailed and Bursty Workloads", in *the IEEE International Conference on Communications (**ICC'12**)*, Ottawa, Canada, June, 2012. Acceptance Rate: 37.0%.
54. Yi Yao, Bo Sheng and **Ningfang Mi**, "DAT: An AP Scheduler using Dynamically Adjusted Time Windows for Crowded WLANs", in *the IEEE International Performance Computing and Communications Conference (**IPCCC'11**)*, Orlando, Florida, Nov., 2011. Acceptance Rate: 34.8%.

55. Juemin Zhang, **Ningfang Mi**, Jianzhe Tai and Waleed Meleis, "Decentralized Scheduling of Bursty Workload on Computing Grids", in *the IEEE International Conference on Communications (**ICC'11**)*, Kyoto, Japan, June 5-9, 2011. Acceptance Rate: 38.5%.

56. Jianzhe Tai, Juemin Zhang, Jun Li, Waleed Meleis and **Ningfang Mi**, "ArA: Adaptive Resource Allocation for Cloud Computing Environments under Bursty Workloads", in *the IEEE International Performance Computing and Communications Conference (**IPCCC'11**)*, Orlando, Florida, Nov., 2011. Acceptance Rate: 27.9%.

57. Andrew Caniff, Lei Lu, **Ningfang Mi**, Ludmila Cherkasova, and Evgenia Smirni, "Fastrack for Taming Burstiness and Saving Power in Multi-Tiered Systems", in *the 22nd International Teletraffic Congress (**ITC'10**)*, pp. 1-8, Amsterdam, The Netherlands, Sept., 2010. Acceptance Rate: 30%. (**Best Student Paper Award**)

58. Andrew Caniff, Lei Lu, **Ningfang Mi**, Ludmila Cherkasova, and Evgenia Smirni, "Efficient Resource Allocation and Power Saving in Multi-Tiered Systems", in *the 19th International World Wide Web Conference (**WWW'2010**)*, Raleigh, North Carolina, USA, April 26-30, 2010.

59. Lei Lu, Ludmila Cherkasova, V. de Nitto PersonÒ, **Ningfang Mi**, and Evgenia Smirni, "AWAIT: Efficient Overload Management for Busy Multi-tier Web Services under Bursty Workloads", in *the 10th International Conference on Web Engineering (**ICWE'10**)*, pp. 81-97, Vienna, Austria, July, 2010. Acceptance Rate: 20%.

60. Giuliano Casale, **Ningfang Mi**, and Evgenia Smirni, "CWS: a Model-Driven Scheduling Policy for Correlated Workloads", in *the 2010 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (**SIGMETRICS'10**)*, pp. 251-262, June, 2010. Acceptance Rate: 16%.

61. **Ningfang Mi**, Giuliano Casale, Alma Riska, Qi Zhang, and Evgenia Smirni, "Autocorrelation-Driven Load Control in Distributed Systems", in *the IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (**MASCOTS'09**)*, London, U.K., September 2009. Acceptance Rate: 20%.

62. **Ningfang Mi**, Giuliano Casale, Ludmila Cherkasova, and Evgenia Smirni,"Injecting Realistic Burstiness to a Traditional Client-Server Benchmark", in *the International Conference on Autonomic Computing and Communications (**ICAC'09**)*, pp. 149-158, Barcelona, Spain, 2009. Acceptance Rate: 16%

63. **Ningfang Mi**, Alma Riska, Xin Li, Evgenia Smirni, and Erik Riedel, "Restrained Utilization of Idleness for Transparent Scheduling of Background Tasks", in *the 2009 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (**SIGMETRICS'09**)*, pp. 205-216, Seattle, WA, 2009. Acceptance Rate: 15%

64. **Ningfang Mi**, Giuliano Casale, Ludmila Cherkasova, and Evgenia Smirni, "Burstiness in Multi-Tier Applications: Symptoms, Causes, and New Models", in *ACM/IFIP/USENIX 9th International Middleware Conference (**Middleware'08**)*, pp. 265-286, Leuven, Belgium, 2008. Acceptance Rate: 18%. (**Best Paper Award**)

65. **Ningfang Mi**, Giuliano Casale, and Evgenia Smirni, "Scheduling for Performance and Availability in Systems with Temporal Dependent Workloads", in *the International Conference on Dependable Systems and Networks (**DSN'08**)*, pp. 336-345, Anchorage, AK, 2008. Acceptance Rate: 25%.

66. **Ningfang Mi**, Alma Riska, Evgenia Smirni, and Erik Riedel, "Enhancing Data Availability through Background Activities", in *the International Conference on Dependable Systems and Networks (**DSN'08**)*, pp. 492-501, Anchorage, AK, 2008. Acceptance Rate: 25%.

67. Ludmila Cherkasova, Kivanc Ozonat, **Ningfang Mi**, Julie Symons, and Evgenia Smirni, "Anomaly? Application Change? or Workload Change?", in *the International Conference on Dependable Systems and Networks (**DSN'08**)*, pp. 452-461, Anchorage, AK, 2008. Acceptance Rate: 25%.

68. Giuliano Casale, **Ningfang Mi**, and Evgenia Smirni, "Bound Analysis of Closed Queueing Networks with Workload Burstiness", in *the 2008 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems (**SIGMETRICS'08**)*, pp. 13-24, Annapolis, MD, 2008. Acceptance Rate: 18%.

69. Giuliano Casale, **Ningfang Mi**, Ludmila Cherkasova, and Evgenia Smirni, "How to Parameterize Models with Bursty Workloads", in *the First Workshop on Hot Topics in Measurement & Modeling of Computer Systems (**HotMetrics'08**)*, Annapolis, MD, 2008. Acceptance Rate: 27%.

70. **Ningfang Mi**, Ludmila Cherkasova, Kivanc Ozonat, Julie Symons, and Evgenia Smirni, "Analysis of Application Performance and Its Change via Representative Application Signatures", in *IEEE/IFIP Network Operations and Management Symposium (**NOMS'08**)*, pp. 216-223, Salvador, Brazil, 2008. Acceptance Rate: 27%.

71. Giuliano Casale, **Ningfang Mi**, and Evgenia Smirni, "Versatile Models of Systems Using MAP Queueing Networks", in *the IEEE International Parallel and Distributed Processing Symposium (**IPDPS'08**), Next Generation Software (**NGS**) Workshop*, 2008.

72. Evgenia Smirni, Qi Zhang, **Ningfang Mi**, Alma Riska, and Giuliano Casale, "New Results on the Performance Effects of Autocorrelated Flows in Systems", in *IEEE International Parallel and Distributed Processing Symposium (**IPDPS'08**), Next Generation Software (**NGS**) Workshop*, pp. 1-6, Long Beach, CA, 2007.

73. **Ningfang Mi**, Qi Zhang, Alma Riska, and Evgenia Smirni, "Load Balancing for Performance Differentiation in Dual-Priority Clustered Servers", in *the 3rd International Conference on the Quantitative Evaluation of Systems (**QEST'06**)*, pp. 385-394, Riverside, CA, 2006.

74. Qi Zhang, **Ningfang Mi**, Alma Riska, and Evgenia Smirni, "Load Unbalancing to Improve Performance under Autocorrelated Traffic", in *the 26th International Conference on Distributed Computing Systems (**ICDCS'06**)*, pp. 20, Lisboa, Portugal, 2006. Acceptance Rate: 14%.

75. Qi Zhang, Alma Riska, **Ningfang Mi**, Erik Riedel, and Evgenia Smirni, "Evaluating the Performability of Systems with Background Jobs", in *the International Conference on Dependable Systems and Networks (**DSN'06**)*, pp. 495-504, Philadelphia, PA, 2006. Acceptance Rate: 18%.

76. Ovidiu Daescu, **Ningfang Mi**, Chan-Su Shin, and Alexander Wolff, "Farthest-point Queries with Geometric and Combinatorial Constraints", in *the Japan Conference on Discrete and Computational Geometry (**JCDCG'04**)*, pp. 62-75, 2004.

77. Ovidiu Daescu, and **Ningfang Mi**, "Polygonal Path Approximation: a Query Based Approach", in *the 14th Annual International Symposium on Algorithms and Computation (**ISAAC'03**)*, pp. 36-46, 2003.

PATENTS

1. "Using Transaction Latency Profiles For Characterizing Application Updates", *Hewlett-Packard Laboratories*, US Patent NO. US20090307347 A1, Dec., 2009.
2. "Capacity Planning Of Multi-tiered Applications From Application Logs", *Hewlett-Packard Laboratories*, US Patent NO. US20100094992 A1, April, 2010.
3. "Data Storage Device with Histogram of Idle Time and Scheduling of Background and Foreground Jobs", *Seagate Research*, US Patent NO. US7904673 B2, March, 2011.
4. "Using Application Performance Signatures For Characterizing Application Updates", *Hewlett-Packard Laboratories*, US Patent NO. US8224624 B2, July, 2012.

TEACHING

- EECE3326 Optimization Methods: Fall 2009, Fall 2010, Spring 2012, Fall 2013, Fall 2014
- EECE7366 Simulation and Performance Evaluation: Spring 2010, Spring 2011, Fall 2011, Spring 2013
- EECE2560 Fundamental of Engineering Algorithms: Spring 2016, Spring 2017, Fall 2018, Fall 2019, Fall 2020, Summer 2021, Fall 2021, Fall 2022, Fall 2023, Summer 2024, Summer 2025, Fall 2025
- EECE5643 Simulation and Performance Evaluation: Spring 2014, Spring 2015, Fall 2015, Fall 2016, Spring 2019, Spring 2020, Spring 2021, Spring 2022, Spring 2023, Spring 2024, Spring 2025

PROFESSIONAL ACTIVITIES

Service as Editorial Board Member

- Associate Editor on the Editorial Board for IEEE Transactions on Cloud Computing (TCC). 2025-present
- Associate Editor on the Editorial Board for Journal of Big Data. 2019-present
- Associate Editor on the Editorial Board of Frontiers in High Performance Computing - Big Data and AI. 2025 - present
- Review Editor on the Editorial Board of Frontiers in High Performance Big Data Systems (specialty section of Frontiers in High Performance Computing). 2022 - 2023
- Guest Editor for an article collection entitled "The Future of High Performance Big Data Systems: An Early Career Scientists' Perspective". 2022 - 2023
- Section Topical Advisory Panel Member for 'Computer Science & Engineering"of Journal of Electronics. 2021 - 2022
- Editorial board member of Simulation Modeling Practice and Theory. 2011-2020.

Professional Activities

- Steer Committee for IEEE International Performance Computing and Communications Conference (IPCCC) 2022-present
- Program Co-Chair of the Doctoral Symposium and Early Career Track at IEEE/ACM international Symposium on Cluster, Cloud and Internet Computing (CCGrid) 2024
- Publication Co-Chair of International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc) 2024
- Session Chair of ACM International Systems and Storage Conference (SYSTOR) 2024
- Program Co-Chair of ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC) 2023
- Co-General Chair of ACM Workshop on Hot Topics in Storage and File Systems (HotStorage) 2023
- Publications Chair of 2023 ACM SIGMETRICS conference 2023
- Session Chair of ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC) 2023
- Session Chair of ACM Workshop on Hot Topics in Storage and File Systems (HotStorage) 2023
- Co-General Chairs of IEEE International Performance Computing and Communications Conference (IPCCC) 2022

- Co-General Vice-Chairs of IEEE International Performance Computing and Communications Conference (IPCCC) 2021
- Session Chair of IEEE International Parallel & Distributed Processing Symposium (IPDPS) 2021
- Keynote Session Chair of IEEE International Performance Computing and Communications Conference (IPCCC) 2021
- Co-General Vice-Chairs of IEEE International Performance Computing and Communications Conference (IPCCC) 2020
- Local Chair of ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS) 2020
- Program Co-chair of IEEE International Performance Computing and Communications Conference (IPCCC) 2019
- Session Chair of IEEE International Performance Computing and Communications Conference (IPCCC) 2019
- Poster Session Chair of IEEE International Performance Computing and Communications Conference (IPCCC) 2018
- Publicity Chairs for IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT) 2017
- Session Chair of IEEE International Performance Computing and Communications Conference (IPCCC) 2017
- Session Chair of IEEE International Performance Computing and Communications Conference (IPCCC) 2016
- Track Co-Chair of International Conference on Computer Communication and Networks (ICCCN) 2016
- Session Chair of International Conference on Computer Communication and Networks (ICCCN) 2016
- Served in AFOSR proposal external review 2016
- Publicity Co-Chair for IEEE International Conference on Cloud Engineering (IC2E) 2016
- Publicity Co-Chair of International ACM/IEEE/Usenix Conference on Autonomic Computing (ICAC) 2015
- Local Chair for IEEE International Conference on Networking, Architecture and Storage (NAS) 2015
- Served in NSF proposal panel 2013
- Session Chair for IEEE International Conference on Cloud Computing (Cloud) 2013
- Demo/Poster Chair for ACM International Conference on Performance Engineering (ICPE) 2012
- Session Chair for IEEE International Performance Computing and Communications Conference (IPCCC) 2011
- Publicity Co-Chair for ACM/IFIP/USENIX International Middleware Conference (Middleware) 2010
- Reviewer for Grant Funding Award
  - External proposal reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant Proposal 2022, 2024
  - National Science Foundation (NSF) Panels 2013, 2015, 2017, 2023, 2024, 2025.
  - Air Force Office of Scientific Research (AFOSR) Proposal External Review 2015, 2016.

Service as Invited Technical Program Committee Member

- TPC for International Conference on Artificial Intelligence and Advanced Autonomous Systems (AIAAS) 2026
- TPC for the SIGMETRICS Doctoral Dissertation Award Committee (DDA) 2025
- TPC for ACM International Systems and Storage Conference (SYSTOR) 2024
- TPC for USENIX Conference on File and Storage Technologies (FAST) 2024
- TPC for ACM International Symposium on High Performance Computing (HPDC) 2019, 2020, 2021, 2022, 2024, 2025
- TPC for IEEE International Symposium on Cluster, Cloud and Grid Computing (CCGrid) 2013, 2014, 2015, 2023, 2024
- TPC for ACM SIGMETRICS conference 2023
- TPC for Doctoral Showcase Poster Track at Supercomputing (SC) 2023
- TPC for Supercomputing (SC) 2020
- TPC for IEEE International Conference on Cloud Computing (IEEE CLOUD) 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022
- TPC for IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2017, 2020, 2021, 2022
- TPC for International Conference on Performance Engineering (ICPE) 2017, 2018, 2019, 2022, 2023
- TPC for IEEE International Parallel & Distributed Processing Symposium (IPDPS) 2021,2922, 2023
- TPC for IEEE International Conference on Big Data (IEEE BigData) 2013, 2014, 2015, 2016, 2017, 2018, 2020, 2021, 2022, 2023, 2025
- TPC for International Conference on Distributed Computing Systems (ICDCS) 2021
- TPC for IEEE International Conference on Machine Learning and Applications 2021
- TPC for International Conference on Cloud Computing Technologies and Applications (CloudTech) 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2025
- TPC for International Conference on Smart Grids and Green IT Systems (SMARTGREENS) 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021
- TPC for SPEC Kaivalya Dixit Distinguished Dissertation Award 2019
- TPC for IEEE International Symposium on Reliable Distributed Systems (SRDS) 2019
- TPC for International Conference on Computer Communication and Networks (ICCCN) 2018, 2019
- TPC for ACM/IEEE/USENIX International Conference on Autonomic Computing (ICAC) 2015, 2017, 2019
- TPC for International Conference on Future Internet of Things and Cloud (FiCloud) 2015, 2016, 2017, 2018, 2019
- TPC for International Workshop on Big Data and Cloud Performance (DCPerf) 2016, 2017, 2018, 2019
- TPC for International Conference on Massive Storage Systems and Technology (MSST) 2015, 2016
- TPC for Boston Area Architecture Workshop (BARC) 2016
- TPC for Big Data Management and Analytics (BIDMA) 2016, 2017, 2018
- TPC for IEEE International Conference on Networking, Architecture, and Storage (NAS) 2016

- TPC for Workshop on Interactions of NVM/Flash with Operating Systems and Workloads (INFLOW) 2016
- TPC for International Conference on Parallel and Distributed Systems (ICPADS) 2016
- TPC for International Conference on Smart City (SmartCity) 2016
- TPC for International Workshop on Sustainable High Performance Computing (SHPC) 2014, 2015
- TPC for International Symposium on Foundations and Applications of Big Data Analytics (FAB) 2015
- TPC for International Congress on Big Data (BigData) 2014, 2017
- TPC for National Workshop for REU Research in Networking and Systems (REUNS) 2014
- TPC for IEEE International Workshop on Cloud Analytics (IWCA), 2014
- TPC for Workshop of Middleware for Pervasive Systems (MiPS) 2013
- TPC for International Symposium on Cloud Computing and Services for High Performance Computing Systems (InterCloud-HPC) 2013
- TPC for International Conference on the Quantitative Evaluation of Systems (QEST) 2010, 2011
- Shadow TPC for International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS) 2010

Peer Review

- IEEE Transactions on Dependable and Secure Computing
- IEEE Transactions on Computers
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Software Engineering
- IEEE Transactions on Cloud Computing
- IEEE Transactions on Big Data
- IEEE Transactions on Services Computing
- IEEE Transactions on Computers Special Section on Emerging Non-volatile Memory Technologies
- IEEE Access
- ACM Transactions on Storage
- ACM Transactions on Modeling and Performance Evaluation of Computing Systems
- ACM Transactions on Multimedia Computing Communications and Applications
- ACM Transactions on Architecture and Code Optimization
- ACM Transactions on Sensor Networks
- ACM Transactions on Internet Technology
- ACM Performance Evaluation Review
- Parallel Computing
- International Journal Performance Evaluation
- International Journal of Modeling, Simulation, and Scientific Computing
- The Computer Journal
- Journal of Applied Computing and Informatics
- Journal of Systems and Software
- Journal of Parallel and Distributed Computing

- Journal of Simulation Modelling Practice and Theory
- Journal of Computing
- KSII Transactions on Internet and Information Systems
- Journal of Systems Science and Systems Engineering
- Journal of Internet Services and Applications
- Special Issue on Modeling and Simulation of Smart and Green Computing Systems
- SIGMETRICS, IPCCC, ICPE, CCGrid, Globecom, MILCOM, ISCA, ICDCS, MASCOTS, FeBID/IM, QEST, IWQoS, WASA, ANSS, AMSTA, EPEW, Euro-Par

Northeastern Internal Service

- Co-Chair of the Northeastern ECE Undergraduate Studies Committee 2025 - 2026
- Member of the Northeastern ECE Graduate Affair Committee, 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024 2024-2025 2025-2026
- Member of the Northeastern ECE Tenure and Promotion Committee, 2017-2018, 2024-2025, 2025-2026
- Member of the Northeastern ECE Teaching Group Coordinator 2024-2025, 2025-2026
- Member of the Northeastern Institute for Experiential AI (IEAI) 2021-present
- Member of the Northeastern ECE the Alsaif fellowship faculty committee 2024
- Member of the Northeastern EAI PhD Fellowship faculty committee 2024
- Member of the Northeastern ECE Top-up Committee, 2023
- Member of the Northeastern EAI Student Scholarship Committee 2023-2024
- Member of the Northeastern COE Diversity, Equity, and Inclusion (DEI) Committee 2022-2023
- Member of the Northeastern ECE Diversity, Equity, and Inclusion (DEI) Committee 2022-2023
- Member of the Northeastern COE Tenure and Promotion Committee, 2018-2019, 2019-2020, 2020-2021, 2021-2022
- Member of the Northeastern ECE Hiring Committee 2021-2022
- Member of the Northeastern ECE Appeals Committee 2021-2022
- Member of the Northeastern COE Diversity and Inclusion Committee, 2018-2019, 2019-2020
- Member of the Northeastern ECE Computer Engineering Course Coordinator, 2019-2020
- Member of the Northeastern ECE Computer Engineering Teaching Assignment Coordinator, 2019-2020
- Member of the Northeastern ECE Committee of COE 2020 outstanding RA/TA awards, 2020
- Member of the Northeastern ECE Committee of Microsoft Ada Lovelace Fellowship, 2020
- Member of the Northeastern COE Sabbatical Committee, 2018-2019
- Member of the Northeastern ECE Graduate Affair Committee, 2015-2016, 2016-2017, 2017-2018
- Member of the Northeastern ECE TA/HCA Assignment Committee, 2017-2018
- Member of the Northeastern ECE Faculty Hiring Committee, 2016-2017
- Member of the Northeastern ECE Awards Committee, 2017
- Member of the Northeastern ECE Computer Engineering Faculty Search Committee, 2015-2016
- Member of the Northeastern ECE Faculty Evaluation Committee, 2015-2016
- Faculty Mentor for the Northeastern ECE PhD Student Seminar Series Organizing Committee, 2015-2016, 2016-2017

- Member of the Northeastern ECE Resilient and Efficient Energy Systems Faculty Search Committee, 2013-2014
- Member of the Northeastern Software Engineering Program Committee, 2013
- Member of the Northeastern ECE Computer Engineering Faculty Hiring Committee, 2011-2012
- Member of the Northeastern Gordon Engineering Leadership Program Committee, 2010-2014
- Member of 9 Ph.D. Thesis Committees and 14 M.S. Project/Thesis Committees
- Presenter in ECE Industrial Advisory Summit 2016, EMC Visiting Day 2016, Northeastern RISE Forum, Northeastern IEEE chapter meeting, IBM & Northeastern Partnership Workshop, and MathWorks-Northeastern Collaboration Workshop
- Coordinator of the ECE Ph.D. Qualifying Exam in Computer Engineering (CE) track, 2015

Community Service

- Member of the Participant Engagement Committee of Women of Color in the Academy Conference (WOCIA), 2022, 2023, 2024, 2025
- Participate the Northeastern UPLIFT (Undergraduate Program for Leaders In Future Transformation) program 2022-2023
- Participate the 2021 Northeastern ECE Forum/Open House
- Panelist of a panel discussion "Navigating an Academic Job Search during the COVID-19 Pandemic", an extension of the 2020 New England Future Faculty Workshop
- Member of the Organization Committee of 2019 Women of Color in the Academy Conference (WOCIA)
- Participate the 2018 Summer REU-D3 and ALERT REU Program
- Participate the 2017 Annual Resume/Curriculum Vitae Speed-Dating Event hosted by the Graduate Women in Science and Engineering (GWISE) at Northeastern
- Participate the 2016 Annual Resume/Curriculum Vitae Speed-Dating Event hosted by the Graduate Women in Science and Engineering (GWISE) at Northeastern
- Participate the 2015 Annual Resume/Curriculum Vitae Speed-Dating Event hosted by the Graduate Women in Science and Engineering (GWISE) at Northeastern
- Participate the 2013 Summer Enrichment Program of Boston Area Girls STEM Collaborative at Northeastern

ACADEMIC SUPERVISION

Graduated Ph.D. Students (Thesis Advisees)

1. Danlin Jia (graduated in Dec. 2022, Samsung Memory Solutions Lab)
2. Mahsa Bayati (graduated in Dec. 2020, Samsung Memory Solutions Lab)
3. Janki Bhimani (graduated in Aug. 2019, Florida International University)
4. Zhengyu Yang (graduated in Aug. 2018, Samsung Semiconductor)
5. Yi Yao (graduated in Aug. 2015, Google)
6. Jianzhe Tai (graduated in 2014, Uber)

Graduated M.S. Students (Thesis/Project Advisees)

1. Danlin Jia (graduated in 2018)
2. Dominic Catalano (graduated in 2017)
3. Han Gao (graduated in 2017)
4. Chohsien Lin (graduated in 2014, Acer)
5. Chen Mao (graduated in 2013)
6. Jun Li (graduated in 2013, Amazon)
7. Wei Cai (graduated in 2013, Seagate Technology)
8. Anoop Raghunathan (graduated in 2013, Motolora Mobility)
9. Yuqing Lin (graduated in 2013, EMC)
10. Zhen Li (graduated in 2011)
11. Jiahui Chen (graduated in 2011, Virgin HealthMiles)

Current Graduate Students (Thesis Advisees)

1. Li Wang (Ph.D. student)
2. Shiyue Hou (Ph.D. student)
3. Yiming Xie (Ph.D. student)

Undergraduate and K-12 Students

1. Abdulrazaq Surakat (Northeastern) Independent Study 2025
2. Trevor-Max Smith (Northeastern) Directed Research 2023
3. Emma Vonbuelow (Northeastern) UPLIFT Program 2022-2023
4. Allen Jian Chen (Northeastern) Research Project 2022
5. Kayshihant Shankar (Northeastern) Honor Research 2021-2022
6. Jasper Kimball (Northeastern) Summer Research 2021
7. YuXuan Zhao (Northeastern) Directed Research 2021
8. Sultan Mohamed Ahmed (Northeastern) Directed Research 2020
9. John Alling (Northeastern) Independent Study 2020
10. MaryAshley Etefia (University of Georgia) NSF REU Program 2018
11. Henry Santer (University of Oklahoma) NSF REU Program 2018