

ABDULLAH MUZAHID

Assistant Professor

Computer Science and Engineering

Texas A&M University

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Education

- University of Illinois at Urbana-Champaign (UIUC), PhD, 2012, Department of Computer Science
 - GPA: 3.95/4.00
 - Thesis: *Effective Architectural Support for Debugging Concurrency Bugs*
 - Advisor: Josep Torrellas
- UIUC, Master of Science, 2009, Department of Computer Science
 - GPA: 3.95/4.00
 - Thesis: *Data Race Detection Using Signatures*
 - Advisor: Josep Torrellas
- Bangladesh University of Engineering & Technology (BUET), Bachelor of Science, 2005, Department of Computer Science and Engineering
 - GPA: 3.99/4.00 (**1st** in the whole university)

Employment

- **Associate Professor**, Department of Computer Science and Engineering, Texas A&M University (TAMU), August 2024 - Current.
- **Assistant Professor**, Department of Computer Science and Engineering, Texas A&M University (TAMU), August 2018 - August 2024.
- **Assistant Professor**, Department of Computer Science, University of Texas at San Antonio (UTSA), August 2012 - August 2018.
- **Intern**, Intel Corporation, May 2010 - August 2010.
- **Intern**, Google, May 2008 - August 2008.
- **Research Assistant**, UIUC, August 2007 - August 2012.
- **Research Fellowship**, UIUC, August 2006 - July 2007.
- **Lecturer**, Department of Computer Science, BUET, June 2005 - July 2006.

Awards and Honors

- **CAREER Award**, National Science Foundation (NSF), 2017.
- Member (Invited), Board of Advisors, Intel-NSF Computer Assisted Programming for Heterogeneous Architectures (CAPA) Center (**1 of only 3 faculty**).
- Excellence in Research Award, College of Sciences, UTSA, 2015 & 2017.

- W. J. Poppelbaum Award, UIUC, 2012.
- Intel PhD Fellowship, 2011.
- Mavis Future Faculty Fellowship, UIUC, 2011.
- Intel PhD Fellowship Nomination, UIUC, 2010.
- MICRO Conference Travel Grant, 2010.
- ISCA Conference Travel Grant, 2009.
- Abbasi Fellowship, UIUC, 2006.
- University Fellowship, Ohio State University, 2006 (declined).
- Prime Minister Gold Medal for securing the 1st position in the School of Electrical and Electronics Engineering, BUET, 2006.
- University Gold Medal, BUET, 2006.
- Sharfuddin Gold Medal, Department of Computer Science and Engineering, BUET, 2006.

Research Activities¹

• Journal Papers:

- J1. Kevin Weston*, Vahid Janfaza*, Farabi Mahmud*, **Abdullah Muzahid**. SMARTINDEX: Learning to Index Caches to Improve Performance. In *IEEE Computer Architecture Letters (CAL)*, February 2023.
- J2. Sungkeun Kim, Farabi Mahmud*, Jiayi Huang, Chia-Che Tsai, **Abdullah Muzahid**, Eun Jung Kim. WHISTLE: CPU Abstractions for Hardware and Software Memory Safety Invariants. In *IEEE Transactions on Computers (TC)*, June 2022.
- J3. Riad Akram*, Shantanu Mandal*, and **Abdullah Muzahid**. XMeter: Finding Approximable Functions and Predicting Their Accuracy. In *IEEE Transactions on Computers (TC)*, June 2020.
- J4. Ismail Akturk, Riad Akram*, Mohammad Majharul Islam*, Ulya Karpuzcu, and **Abdullah Muzahid**. Accuracy Bugs: A New Class of Concurrency Bugs to Exploit Algorithmic Noise Tolerance. In *ACM Transactions on Architecture and Code Optimization (TACO)*, December 2016. Also appeared in (**HiPEAC 2017**).

• Conference Papers:

- C1. Kevin Weston*, Avery Johnson*, Vahid Janfaza*, Farabi Mahmud*, **Abdullah Muzahid**. Customizing Cache Indexing through Entropy Estimation. In *International Symposium on Microarchitecture (MICRO)*, November 2024 (Acceptance Rate 23%).
- C2. Sabuj Lasker, Pranati Majhi, Sungkeun Kim, Farabi Mahmud, **Abdullah Muzahid**, Eun Jung Kim. Enhancing Collective Communication in MCM Accelerator for Deep Learning Training. *International Symposium on High Performance Computer Architecture (HPCA)*, March 2024 (Acceptance Rate 18%).
- C3. Farabi Mahmud*, Sungkeun Kim, Harpreet Singh Chawla, Jiayi Huang, Chia-Che Tsai, Eun Jung Kim, **Abdullah Muzahid**. Attack of the Knights: Non Uniform Cache Side Channel Attack. In *Annual Computer Security Applications Conference (ACSAC)*, December 2023 (Acceptance Rate 23%).

¹(* indicates student advisee)

- C4. Vahid Janfaza*, Shantanu Mandal*, Farabi Mahmud*, **Abdullah Muzahid**. ADA-GP: Accelerating DNN Training By Adaptive Gradient Prediction. In *International Symposium on Microarchitecture (MICRO)*, October 2023 (Acceptance Rate 23%).
- C5. Vahid Janfaza*, Kevin Weston*, Moein Razavi Ghods, Shantanu Mandal*, Farabi Mahmud*, Alex Hilty, **Abdullah Muzahid**. MERCURY: Accelerating DNN Training By Exploiting Input Similarity. In *International Symposium on High Performance Computer Architecture (HPCA)*, February 2023 (Acceptance Rate 25%).
- C6. Jiayi Huang, Pritam Majumder, Sungkeun Kim, **Abdullah Muzahid**, Ki Hwan Yum, Eun Jung Kim. Communication Algorithm-Architecture Co-Design for Distributed Deep Learning. In *International Symposium on Computer Architecture (ISCA)*, June 2021 (Acceptance Rate 18%).
- C7. Shantanu Mandal*, Todd Anderson, Javier Turek, Shengtian Zhou, Justin Gottschlich, **Abdullah Muzahid**. Learning Fitness Functions for Machine Programming. In *Machine Learning and Systems (MLSys)*, April 2021 (Acceptance Rate 23%).
- C8. Sungkeun Kim, Farabi Mahmud*, Jiayi Huang, Pritam Majumder, Neophytos Christou, **Abdullah Muzahid**, Chia-Che Tsai, Eun Jung Kim. ReViCe: Reusing Victim Cache to Prevent Speculative Cache Leakage. In *IEEE Secure Development (SecDev)*, September 2020 (Acceptance Rate 25%).
- C9. Mohammad Mejbah Ul Alam*, Justin Gottschlich, Nesime Tatbul, Javier Turek, Timothy Mattson, **Abdullah Muzahid**. A Zero-Positive Learning Approach for Diagnosing Software Performance Regressions. In *Neural Information Processing Systems (NeurIPS)*, December 2019 (Acceptance Rate 21%).
- C10. Mohammad Majharul Islam* and **Abdullah Muzahid**. Bugaroo: Exposing Memory Model Bugs in Many-core Systems. In *International Symposium on Software Reliability Engineering (ISSRE)*, October 2018 (Acceptance Rate 24%).
- C11. Mohammad Mejbah Ul Alam*, Tongping Liu, Guangming Zeng, and **Abdullah Muzahid**. SyncPerf: Categorizing, Detecting, and Diagnosing Synchronization Performance Bugs. In *The European Conference on Computer Systems (EuroSys)*, April 2017 (Acceptance Rate 20%).
- C12. Mohammad Majharul Islam*, Riad Akram*, and **Abdullah Muzahid**. Hardware-Based Sequential Consistency Violation Detection Made Simpler. In *International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)*, December 2016.
- C13. Riad Akram*, Mohammad Mejbah Ul Alam*, and **Abdullah Muzahid**. Approximate Lock: Trading off Accuracy for Performance by Skipping Critical Sections. In *International Symposium on Software Reliability Engineering (ISSRE)*, October 2016 (Acceptance Rate 34%).
- C14. Mohammad Majharul Islam* and **Abdullah Muzahid**. Detecting, Exposing, and Classifying Sequential Consistency Violations. In *International Symposium on Software Reliability Engineering (ISSRE)*, October 2016 (Acceptance Rate 34%).
- C15. Mohammad Mejbah Ul Alam* and **Abdullah Muzahid**. Production-Run Software Failure Diagnosis via Adaptive Communication Tracking. In *International Symposium on Computer Architecture (ISCA)*, June 2016 (Acceptance Rate 18%).
- C16. Mohammad Shahedul Islam*, Matt Gibson, and **Abdullah Muzahid**. Fast and QoS-Aware Heterogeneous Data Center Scheduling Using Locality Sensitive Hashing. In *International Conference on Cloud Computing Technology and Science (CloudCom)*, December 2015 (Acceptance Rate 25%).

- C17. **Abdullah Muzahid**. Hardware Support for Production Run Diagnosis of Performance Bugs. Short Paper in *International Conference on Computer Design (ICCD)*, October 2015.
- C18. Mohammad Shahedul Islam*, Matt Gibson, and **Abdullah Muzahid**. A Fast and Accurate Workload Characterization Technique Using Locality Sensitive Hashing. Invited Paper in *International Conference on Embedded Software and Systems (ICESS)*, August 2015.
- C19. Shanxiang Qi, **Abdullah Muzahid**, Wonsun Ahn, and Josep Torrellas. Dynamically Detecting and Tolerating IF-Condition Data Races. In *International Symposium on High Performance Computer Architecture (HPCA)*, February 2014 (Acceptance Rate 25%).
- C20. Yuelu Duan, **Abdullah Muzahid**, and Josep Torrellas. WeeFence: Toward Making Fences Free in TSO. In *International Symposium on Computer Architecture (ISCA)*, June 2013 (Acceptance Rate 19%).
- C21. **Abdullah Muzahid**, Shanxiang Qi, and Josep Torrellas. Vulcan: Architectural Support for Dynamically Detecting Sequential Consistency Violations in Programs. In *International Symposium on Microarchitecture (MICRO)*, December 2012 (Acceptance Rate 17%).
- C22. Shanxiang Qi, Norimasa Otsuki, Lois Nogueira, **Abdullah Muzahid**, and Josep Torrellas. Pacman: Tolerating Asymmetric Data Races with Unintrusive Hardware. In *International Symposium on High Performance Computer Architecture (HPCA)*, February 2012 (Acceptance Rate 17%).
- C23. **Abdullah Muzahid**, Norimasa Otsuki, and Josep Torrellas. AtomTracker: A Comprehensive Approach to Atomic Region Inference and Violation Detection. In *International Symposium on Microarchitecture (MICRO)*, December 2010 (Acceptance Rate 17%).
- C24. **Abdullah Muzahid**, Dario Suarez, Shanxiang Qi, and Josep Torrellas. SigRace: Signature-Based Data Race Detection. In *International Symposium on Computer Architecture (ISCA)*, June 2009 (Acceptance Rate 20%).
- C25. **Abdullah Muzahid**, Ahmed Khurshid, Md. Mostofa Akbar, and Masud Karim Khan. Reservation Based Adaptive Uplink Admission Control for WCDMA. In *International Conference on Next Generation Wireless Systems (ICNEWS)*, January 2006.

- **Community Report:**

- CR1. **Abdullah Muzahid** and Others. Program Synthesis for Scientific Computing. Sponsored by the *Department of Energy*, August 2020.

- **Refereed Workshop Papers:**

- W1. Mohammad Majharul Islam* and **Abdullah Muzahid**. Concurrency Characterizing Real World Bugs Causing Sequential Consistency Violations. In *Hot Topics in Parallelism (HotPar)*, June 2013.
- W2. Mejbah Ul Alam*, Rehana Begam, Sabidur Rahman, and **Abdullah Muzahid**. Concurrency Bug Detection and Avoidance Through Continuous Learning of Invariants Using Neural Networks in Hardware. In *Workshop on Dynamic Analysis (WODA)*, March 2013.

- **Refereed Posters:**

- P1. Phat Nguyen*, Abhishek Taur*, Arnav Kansal, Mohamed Zahran and **Abdullah Muzahid**. Forecaster: A Continuous Learning Approach to Improve Hardware Efficiency. In *International Symposium on Code Generation and Optimization (CGO)*, February 2020.
- P2. Riad Akram* and **Abdullah Muzahid**. Approximeter: Finding and Quantifying Code Sections for Approximation. In *International Symposium on Workload Characterization (IISWC)*, October 2017.
- P3. Mohammad Mejbah Ul Alam* and **Abdullah Muzahid**. Cassandra: A Neural Network Based Software Bug Detection Scheme. In *International Conference on Parallel Architectures and Compilation Techniques (PACT)*, October 2015.
- P4. Mohammad Majharul Islam*, Riad Akram*, and **Abdullah Muzahid**. Dissector: A Lightweight Sequential Consistency Violation Detector for TSO. In *College of Science Research Conference*, October 2015.
- P5. Mohammad Shahedul Islam*, Matt Gibson, and **Abdullah Muzahid**. A Fast and Accurate Workload Characterization Technique Using Locality Sensitive Hashing. In *College of Science Research Conference*, October 2014. Won the best student presentation award.
- P6. Deepti Gupta and **Abdullah Muzahid**. A Novel Exit Policy Using Machine Learning for Transactional Memory. In *College of Science Research Conference*, April 2013.
- P7. Mohammad Mejbah Ul Alam* and **Abdullah Muzahid**. Concurrency Bug Detection and Avoidance Through Continuous Learning of Invariants Using Neural Networks in Hardware. In *Computer Science Research Poster Presentation*, November 2012.
- P8. **Abdullah Muzahid**, Dario Suarez, Shanxiang Qi, and Josep Torrellas. Architectural Support for Detecting Data Races and Atomicity Violations. In *Intel Developer Forum (IDF)*, September 2009.
- P9. **Abdullah Muzahid** and Le-Chun Wu. Performance Evaluation of Dynamic Thread Balancing in Google's Threading Library. In *Google Summer Poster Show*, August 2008.
- **PhD Thesis:**
Effective Architectural Support for Detecting Concurrency Bugs
 Advisor: Josep Torrellas
 Department of Computer Science, UIUC, July 2012
 - **Master's Thesis:**
Data Race Detection Using Signatures
 Advisor: Josep Torrellas
 Department of Computer Science, UIUC, May 2009
 - **Undergraduate Thesis:**
Reservation Based Adaptive Uplink Admission Control for WCDMA
 Advisor: Md. Mostofa Akbar
 Department of Computer Science and Engineering, BUET, May 2005

Scholarly Presentations

- **Invited Presentations:**
 - IP1. "Pre-Silicon Software Hardware Analysis Using Deep Learning". At Intel Brown Bag Seminar, January 2023.

- IP2. *"Improving System Reliability and Efficiency using Machine Learning"*. At Georgia Tech University, Atlanta, GA, January 2021.
- IP3. *"Improving System Reliability and Efficiency using Machine Learning"*. At University of Wisconsin, Madison, WA, December 2020.
- IP4. *"Improving System Reliability and Efficiency using Machine Learning"*. At University of California, Riverside, CA, October 2020.
- IP5. *"Learning Fitness Function for Machine Programming"*. At Workshop on Program Synthesis for Scientific Computing, Argonne National Laboratory, August 2020.
- IP6. *"Improving System Reliability and Efficiency using Machine Learning"*. At Texas A&M University, College Station, TX, April 2018.
- IP7. *"Detecting and Eliminating Sequential Consistency Violation"*. At IBM T.J. Watson Research Center, Yorktown Heights, NY, October 2013.
- IP8. *"Detecting and Eliminating Sequential Consistency Violation"*. At Auburn University, Auburn, AL, October 2013.
- IP9. *"Detecting and Eliminating Sequential Consistency Violation"*. At AMD Research, Austin, TX, August 2013.
- IP10. *"Debugging Software Concurrency Bugs: An Architectural Perspective"*. At Colloquium of Department of Electrical and Computer Engineering, University of Texas at San Antonio, San Antonio, TX, October 2012.
- IP11. *"Debugging Software Concurrency Bugs: An Architectural Perspective"*. At College of Science Research Conference, University of Texas at San Antonio, San Antonio, TX, October 2012.
- IP12. *"Debugging Software Concurrency Bugs: An Architectural Perspective"*. At Colloquium of Department of Computer Science, University of Texas at San Antonio, San Antonio, TX, October 2012.
- IP13. *"Multicore Architectures for Debugging Software Concurrency Bugs"*. At University of Texas at San Antonio, San Antonio, TX, April 2012.
- IP14. *"Multicore Architectures for Debugging Software Concurrency Bugs"*. At Rutgers University, New Brunswick, NJ, April 2012.
- IP15. *"Vulcan: Architectural Support for Dynamically Detecting Sequential Consistency Violations in Programs"*. At Intel Corporation, Champaign, IL, November 2011.
- IP16. *"AtomTracker: A Comprehensive Approach to Atomic Region Inference and Violation Detection"*. At Universal Parallel Computing Research Center, UIUC, February 2011.
- IP17. *"AtomTracker: A Comprehensive Approach to Atomic Region Inference and Violation Detection"*. At Intel Corporation, Champaign, IL, October 2010.
- IP18. *"Effectiveness of Sharing Analysis in Intel Thread Checker"*. At Intel Corporation, Champaign, IL, August 2010.
- IP19. *"SigRace: Signature-Based Data Race Detection"*. At Universal Parallel Computing Research Center, UIUC, May 2009.

• **Refereed Conference Presentations:**

- RP1. *"MERCURY: Accelerating DNN Training By Exploiting Input Similarity."*. At International Symposium on High Performance Computer Architecture (HPCA), March 2023.

- RP2. *"Bugaroo: Exposing Memory Model Bugs in Many-core Systems."*. At International Symposium on Software Reliability Engineering (ISSRE), October 2018.
- RP3. *"Hardware-Based Sequential Consistency Violation Detection Made Simpler"*. At International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP), December 2016.
- RP4. *"AtomTracker: A Comprehensive Approach to Atomic Region Inference and Violation Detection"*. At International Symposium on Microarchitecture (MICRO), December 2010.
- RP5. *"SigRace: Signature-Based Data Race Detection"*. At International Symposium on Computer Architecture (ISCA), June 2009.
- RP6. *"Reservation Based Adaptive Uplink Admission Control for WCDMA"*. At International Conference on Next Generation Wireless Systems (ICNEWS), January 2006.

- **Non-refereed Presentations:**

- NRP1. *"Performance Evaluation of Dynamic Thread Balancing in Google's Threading Library"*. At Google, Mountain View, CA, August 2008.

Grants

- **Awarded (PI Share 1.23 Million):**

- A1. PI, Amount: \$199,000, Title: SHF: Small: Software and Hardware Support for Robust Deep Learning, Duration: 03/01/2023 to 02/27/2026, NSF.
- A2. PI, Amount: \$261,873, Title: SPX: Collaborative Research: NG4S: A Next-generation Geo-distributed Scalable Stateful Stream Processing System, Duration: 10/01/2019 to 09/30/2023, NSF.
- A3. PI, Amount: \$75,000, Title: Testing and Fixing Software Autonomously Using Machine Learning, Duration: 06/01/2021 to 05/31/2022, Intel Corporation.
- A4. PI, Amount: \$50,000, Title: AUTAM: Autonomous Programming Using Deep Learning, Duration: 02/01/2020 to 05/31/2020, Intel Corporation.
- A5. PI, Amount: \$449,945, Title: CAREER: A Dynamic Program Monitoring Framework Using Neural Network Hardware, Duration: 04/15/2017 to 03/31/2023, NSF.
- A6. PI, Amount: \$30,000, Title: Applying Machine Learning Techniques for Performance Bug Analysis, Duration: 04/01/2017 to 09/30/2017, Intel Corporation.
- A7. PI, Amount: \$30,000, Title: Scheduling ZeroVMs with Performance Guarantees, Duration: 02/01/2014 to 01/31/2015, Rackspace.
- A8. PI, Amount: \$249,328, Title: SHF: Small: Novel Techniques for Handling Memory Model Bugs, Duration: 10/1/2013 to 9/30/2017, NSF.

Intellectual Property

- Patent pending on "Low-overhead detection techniques for synchronization problems in parallel and concurrent software", Dec 2016.

Teaching Activities

- **Courses Taught:**

1. CSCE 689 (Machine Learning for Compute Systems and Architecture): Fall 2021 in TAMU
2. CSCE 689 (Machine Learning-based Systems): Spring 2019 in TAMU.
3. CSCE 689 (Advanced Computer Architecture): Fall 2019 in TAMU.
4. CSCE 614 (Computer Architecture): Spring 2023, Fall 2019 in TAMU.
5. CSCE 350 (Computer Architecture and Design): Spring 2022, Spring 2021 in TAMU.
6. CSCE 312 (Computer Organization): Fall 2022, Spring 2020 in TAMU.
7. CSCE 120 (Introduction to Program Design and Concepts): Fall 2023 in TAMU.
8. CS 5513 (Computer Architecture): Fall 2017, Fall 2016, Fall 2015, Fall 2014, Fall 2013, Spring 2013, Fall 2012 in UTSA.
9. CS 3853 (Computer Architecture): Fall 2017, Spring 2017, Fall 2015, Fall 2014, Spring 2014 in UTSA.
10. CS 3843 (Compute Organization): Summer 2016, Spring 2016, Spring 2015 in UTSA.

• **Students Mentored:**

1. **Graduated PhD Students:**

- (a) Mohammad Majharul Islam, Fall 2017, First Employment: Software Engineer, Intel.
- (b) Mohammad Mejbah Ul Alam, Fall 2017, First Employment: Research Scientist, Intel Lab.
- (c) Riad Akram, Fall 2017, First Employment: Software Engineer, Intel.
- (d) Mohammad Shahedul Islam (co-advised), Fall 2016, First Employment: Software Engineer, Intel.
- (e) Shantanu Mandal, Summer 2023, First Employment: Software Engineer, Wells Fargo Bank.

2. **Current PhD Students:**

- (a) Farabi Mahmud, Since Spring 2019.
- (b) Kevin Weston, Since Fall 2019.
- (c) Vahid Janfaza, Since Fall 2019.
- (d) Sunyoung Park, Since Fall 2021.
- (e) Avery Johnson, Since Fall 2023.

3. **Graduated MS Students:** Kathy Pai, Fall 2020; Jaehun Jung, Spring 2019; Abhishekh Taur, Spring 2019; Moulika Omtri, Fall 2016; Saeef Ahmad, Spring 2016; K M Sabidur Rahman, Spring 2014.

4. **Independent Research Directed:** Chewei Chen, MS, Fall 2014 & Spring 2015; Mathew McGuire, Undergraduate, Fall 2014; Henrey Mator, MS, Fall 2014; Xinpeng Liao, PhD, Spring 2013.

• **Graduate Committees Served:**

1. **MS Committees:** Chrysanthos Pepi, Ongoing; Shejuti Shehreen, Ongoing; Abhiyash Hodge, Ongoing; Rajiv Madeswaran, Spring 2017; Corey Crosser, Spring 2017; Jinpeng Zhou, Spring 2017; Vivek Sarkale, Spring 2017; Pranitha Madduri, Fall 2016; Sahana Raghavendra, Fall 2016; Venkat Dantuluri, Spring 2016; Abdul Azhar Mohammed, Spring 2016; Viswanath Nuggu, Spring 2016; Al Amin Hossain, Fall 2015; Philip Tanofsky, Spring 2014; Apostolos Kotsiolis, Spring 2014; Majedul Haque, Summer 2013; Xiaohuang Zhu, Spring 2013.

2. **Dissertation Committees:** Harpreet Singh Chawla, Ongoing; Sungkeun Kim, Ongoing; Muhammad Emad-Ud-Din, Ongoing; Pritam Majumder, Spring 2022; Abdulrahman Takiddin, Fall 2022; Jiayi Huang Summer 2020; Pritam Majumder, Fall 2021; Rehana Begam, Spring 2016; Lucas Wilson, Fall 2013.

Service Activities

- **Departmental:**

1. **TAMU:**

- (a) Colloquium Committee, 2023-2024.
- (b) Graduate Awards Committee, 2022-2023
- (c) Peer Teaching Committee, 2022-2023
- (d) Ph.D. Admissions and Recruiting Committee, 2018-2021.
- (e) Advisory Committee (Elected), 2019-2020.
- (f) Undergraduate Awards Committee, 2019-2020, 2021-2022.

2. **UTSA:**

- (a) Graduate Studies Committee, 2014-2018.
- (b) Colloquium Committee, 2014-2018.
- (c) Faculty Search Committee, 2014-2015.
- (d) PhD Exam Committee, 2012-2014.
- (e) Graduate Recruitment Committee, 2013-2014.
- (f) CS Lab Committee, 2012-2013.

- **Professional:**

1. **NSF Panelist** 2016-2023, 2014.
2. **Organizing Committee:** ISCA 2022; MICRO 2019; MAPL Workshop 2019; NeuroArch Workshop 2015 & 2014; NPC 2015.
3. **Program Committee:** ISCA 2022, 2019, 2017; HPCA 2022, 2020, 2018, 2017; MICRO 2022, 2016; PACT 2014; CGO 2024, 2015, 2014; ICCD 2019, 2013; IPDPS 2021, 2020, 2013; ICPP 2020.
4. **External Review Committee:** ISCA 2023, 2021, 2020, 2016, 2015, 2012, 2010; HPCA 2023, 2021, 2019, 2016, 2015, 2014, 2013, 2012; MICRO 2021, 2020, 2015, 2014, 2012, 2010; PACT 2017; ASPLOS 2020, 2015, 2011.