Amy Babay

www.pitt.edu/~babay  814-528-4205  babay@pitt.edu

November 2024

Education

Doctor of Philosophy in Computer Science  September 2018
Johns Hopkins University  Baltimore, MD
Thesis: Timely, Reliable, and Cost-Effective Internet Transport Service using Structured Overlay Networks

Master of Science in Engineering in Computer Science  May 2014
Johns Hopkins University  Baltimore, MD
Thesis: The Accelerated Ring Protocol: Ordered Multicast for Modern Data Centers

Bachelor of Arts in Cognitive Science, minor in Classics  May 2012
Johns Hopkins University  Baltimore, MD
GPA: 4.00. Phi Beta Kappa, University Honors, Departmental Honors, Dean’s List

Academic Appointments

Assistant Professor  August 2019-Present
University of Pittsburgh, School of Computing and Information  Pittsburgh, PA
Department of Informatics and Networked Systems; Department of Computer Science
Director of the Resilient Systems and Societies Lab (RSSLab): www.rsslab.io
The RSSLab is a computer systems research group, with a focus on dependable infrastructure.

Honors and Awards

• Best Paper Award  October 2024
  International Symposium on Reliable Distributed Systems (SRDS 2024)

• Best Paper Runner Up  June 2021
  IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2021)
  Selected as one of the top 3 papers of the conference

• Professor Joel Dean Excellence in Teaching Award  May 2018
  Johns Hopkins University Computer Science Department
  For “outstanding teaching contributions to the department”

• Finalist for Graduate Teaching Assistant Award  March 2018
  Johns Hopkins University Whiting School of Engineering

• Best Paper Award  June 2017
  IEEE International Conference on Distributed Computing Systems (ICDCS 2017)

• Special Service Award  May 2015
  Johns Hopkins University Computer Science Department
  For “outstanding work to benefit the department, Johns Hopkins University, and the community”
• Excellence in Cognitive Science Award

Johns Hopkins University Cognitive Science Department

Awarded annually to a graduating Cognitive Science major for academic excellence and outstanding accomplishment in research

Publications and Products

*In author lists, students I have advised at the University of Pittsburgh appear in bold.

Released Software

[S-4] Spire intrusion-tolerant SCADA system for the power grid, co-creator
Yair Amir, Trevor Aron, Amy Babay, Thomas Tantillo, Sahiti Bommareddy, and Maher Khan.
First release May 2017, latest release February 2024 (creator since version 1.0, May 2017). An intrusion-tolerant SCADA system with performance guarantees under attack. Successfully withstood a red-team attack conducted by Sandia National Laboratories at Pacific Northwest National Laboratory from March 27 to April 7, 2017. Demonstrated in a test-deployment at the Hawaiian Electric Company from January 22 to February 1, 2018. (www.spire-sys.org).
Related publications: C-15, C-12, C-8, C-6, C-4, I-2, W-5, W-4, P-2, P-1

[S-3] Spines overlay network platform, co-creator
Yair Amir, Claudiu Danilov, John Schultz, Daniel Obenshain, Thomas Tantillo, and Amy Babay.
First release February 2003, latest release February 2024 (creator since version 5.3, March 2018). A framework for deploying innovative networks to provide services not available on the native Internet and improve performance for existing services (www.spines.org).
Related publications: C-8, C-4, C-3, C-1, I-1, W-3, W-2, T-2

[S-2] Prime intrusion-tolerant replication engine, co-creator
Yair Amir, Jonathan Kirsch, John Lane, Marco Platania, Amy Babay, and Thomas Tantillo.
First release June 2010, latest release February 2024 (creator since version 3.0, May 2017). An intrusion-tolerant replication engine. Implements the first Byzantine-fault-tolerant replication protocol with performance guarantees under attack. (www.dsn.jhu.edu/prime).
Related publications: C-8, C-4

[S-1] Spread toolkit, major contributor
Yair Amir, Michal Miskin-Amir, Jonathan Stanton, and John Schultz.
First release October 1997, latest release May 2018 (major contributor since version 4.4.0, May 2014). Group Communication toolkit providing reliable, high performance, resilient messaging for local and wide-area networks. (www.spread.org).
Related publications: C-2, W-1, T-1

Journal Papers

[J-3] Network Connectivity Resilience in Next Generation Backhaul Networks: Challenges and Future Opportunities
David Tipper, Amy Babay, Balaji Palanisamy, and Prashant Krishnamurthy, in IEEE Transactions on Network and Service Management, vol. 21, no. 5, pp. 5321-5334, October 2024.
URL: https://ieeexplore.ieee.org/document/10507169
DOI: 10.1109/TNSM.2024.3392857

[J-2] Availability Analysis of Multi-Connectivity for ProvidingURLLC
David Tipper, Prashant Krishnamurthy, and Amy Babay, in IEEE Networking Letters, vol. 5, no. 4, pp. 223-226, December 2023.
URL: https://ieeexplore.ieee.org/abstract/document/10185463
Refereed Conference Papers

[C-15] Tolerating Compound Threats in Critical Infrastructure Control Systems
Sahiti Bommareddy, Maher Khan, Huzaifah Nadeem, Benjamin Gilby, Imes Chiu, John W. van de Lindt, Omar Nofal, Mathaios Panteli, Linton Wells II, Yair Amir, Amy Babay, in Proceedings of the 43rd International Symposium on Reliable Distributed Systems (SRDS), Charlotte, North Carolina, September 2024. Best paper award. (31% acceptance rate)

[C-14] Availability Analysis of Network-Attack-Resilient Byzantine Fault Tolerant Systems
Aren Alyahya, David Tipper, Amy Babay, in Proceedings of the 43rd International Symposium on Reliable Distributed Systems (SRDS), Charlotte, North Carolina, September 2024. (31% acceptance rate)

[C-13] Optimal Planning Framework for Mitigating Cyber-Induced Cascading Failures in Power Grids
Balaji V. Venkatasubramanian, Sina Hashemi, Linton Wells II, Kathryn Blackmond Laskey, John W. van de Lindt, Yair Amir, Amy Babay, Imes Chiu, Mathaios Panteli, in Proceedings of the IEEE Power & Energy Society General Meeting (PESGM), Seattle, Washington, July 2024, pp. 1-5.
URL: https://ieeexplore.ieee.org/document/10761080
DOI: 10.1109/PESGM1994.2024.10761080

[C-12] Making Intrusion Tolerance Accessible: A Cloud-Based Hybrid Management Approach to Deploying Resilient Systems
Maher Khan and Amy Babay, in Proceedings of the 42nd International Symposium on Reliable Distributed Systems (SRDS), Marrakesh, Morocco, September 2023, pp. 254-267.
URL: https://ieeexplore.ieee.org/document/10419323
DOI: 10.1109/SRDS60354.2023.00033

[C-11] A Resilience Assessment Framework for Coupled Power and Communication Infrastructure
Mohamed Lotfi, Mathaios Panteli, Linton Wells II, Kathryn Blackmond Laskey, John W. van de Lindt, Yair Amir, Amy Babay, Imes Chiu, in Proceedings of the IEEE Power & Energy Society General Meeting (PESGM), Orlando, Florida, July 2023, pp. 1-5.
URL: https://ieeexplore.ieee.org/abstract/document/10252712
DOI: 10.1109/PESGM52003.2023.10252712

[C-10] The Impact of COVID-19 on Communication Network Outages
Farris Alotibi, Alekyhya Velagapudi, Kuheli Sai, Akshay Madan, Abhishek Viswanathan, Amy Babay, David Tipper, and Prashant Krishnamurthy, in Proceedings of the 18th International Conference on the Design of Reliable Communication Networks (DRCN), Virtual Event, March 2022, pp. 1-8.
URL: https://ieeexplore.ieee.org/abstract/document/9758011
DOI: 10.1109/DRCN53993.2022.9758011

[C-9] Controlling Epidemic Spread using Probabilistic Diffusion Models on Networks
Amy Babay, Michael Dinitz, Aravind Srinivasan, Leonidas Tsepenekas, Anil Vullikanti, in Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS), Virtual Event, March 2022, pp. 11641-11654. (29.2% acceptance rate)
[C-8] Toward Intrusion Tolerance as a Service: Confidentiality in Partially Cloud-Based BFT Systems
Maher Khan and Amy Babay, in Proceedings of the IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Virtual Event, June 2021, pp. 14-25. Best paper runner up. (One of top 3 papers out of 295 submissions, 16.3% overall acceptance rate)
URL: https://ieeexplore.ieee.org/abstract/document/9505127
DOI: 10.1109/DSN48987.2021.00019

[C-7] Identifying Vulnerable Critical Infrastructure Zones in Smart Cities
Abdulaziz Alqahtani, David Tipper, Katrina Kelly-Pitou and Amy Babay, in Proceedings of the 16th International Conference on the Design of Reliable Communication Networks (DRCN), Milano, Italy, 2020, pp. 1-7.
URL: https://ieeexplore.ieee.org/abstract/document/9089374
DOI: 10.1109/DRCN48652.2020.1570613452

[C-6] Deploying Intrusion-Tolerant SCADA for the Power Grid
Amy Babay, John Schultz, Thomas Tantillo, Samuel Beckley, Eamon Jordan, Kevin Ruddell, Kevin Jordan, and Yair Amir, in Proceedings of the IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Portland, OR, June 2019, pp. 328-335. (21.4% acceptance rate)
URL: https://ieeexplore.ieee.org/abstract/document/8809554
DOI: 10.1109/DSN.2019.00043

[C-5] Characterizing Demand Graphs for (Fixed-Parameter) Shallow-Light Steiner Network
Amy Babay, Michael Dinitz, and Zeyu Zhang, in Proceedings of the 38th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS), Ahmedabad, India, December 2018, pp. 33:1-33:22. (35.8% acceptance rate)
URL: https://drops.dagstuhl.de/opus/volltexte/2018/9932/
DOI: 10.4230/LIPIcs.FSTTCS.2018.33

[C-4] Network-Attack-Resilient Intrusion-Tolerant SCADA for the Power Grid
Amy Babay, Thomas Tantillo, Trevor Aron, Marco Platania, and Yair Amir, in Proceedings of the IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Luxembourg City, Luxembourg, June 2018, pp. 255-266. (28% acceptance rate)
URL: https://ieeexplore.ieee.org/abstract/document/8416488
DOI: 10.1109/DSN.2018.00036

[C-3] Timely, Reliable, and Cost-Effective Internet Transport Service using Dissemination Graphs
Amy Babay, Emily Wagner, Michael Dinitz, and Yair Amir, in Proceedings of the 37th IEEE International Conference on Distributed Computing Systems (ICDCS), Atlanta, GA, June 2017, pp. 1-12. Best paper award. (Top 1 out of 531 submissions, 16.9% overall acceptance rate)
URL: https://ieeexplore.ieee.org/abstract/document/7979950
DOI: 10.1109/ICDCS.2017.63

[C-2] Fast Total Ordering for Modern Data Centers
Amy Babay and Yair Amir, in Proceedings of the 36th IEEE International Conference on Distributed Computing Systems (ICDCS), Nara, Japan, June 2016, pp. 669-679. (17.6% acceptance rate)
URL: https://ieeexplore.ieee.org/abstract/document/7536565
DOI: 10.1109/ICDCS.2016.20

[C-1] Practical Intrusion-Tolerant Networks
Daniel Obenshain, Thomas Tantillo, Amy Babay, John Schultz, Andrew Newell, Md. Endadul Hoque, Yair Amir, and Cristina Nita-Rotaru, in *Proceedings of the 36th IEEE International Conference on Distributed Computing Systems (ICDCS)*, Nara, Japan, June 2016, pp. 45-56. (17.6% acceptance rate)

URL: [https://ieeexplore.ieee.org/abstract/document/7536504](https://ieeexplore.ieee.org/abstract/document/7536504)
DOI: 10.1109/ICDCS.2016.99

**Invited Papers**

[I-2]  **Toward an Intrusion-Tolerant Power Grid: Challenges and Opportunities**
Amy Babay, John Schultz, Thomas Tantillo, and Yair Amir, in *Proceedings of the 38th IEEE International Conference on Distributed Computing Systems (ICDCS)*, Vienna, Austria, July 2018, pp. 1321-1326. (Vision Track, Invited).

URL: [https://ieeexplore.ieee.org/abstract/document/8416395](https://ieeexplore.ieee.org/abstract/document/8416395)
DOI: 10.1109/ICDCS.2018.00132

[I-1]  **Structured Overlay Networks for a New Generation of Internet Services**
Amy Babay, Claudiu Danilov, John Lane, Michal Miskin-Amir, Daniel Obenshain, John Schultz, Jonathan Stanton, Thomas Tantillo, and Yair Amir, in *Proceedings of the 37th IEEE International Conference on Distributed Computing Systems (ICDCS)*, Atlanta, GA, June 2017, pp. 1771-1779. (Vision Track, Invited).

URL: [https://ieeexplore.ieee.org/abstract/document/7980115](https://ieeexplore.ieee.org/abstract/document/7980115)
DOI: 10.1109/ICDCS.2017.119

**Refereed Workshop Papers, Posters, and Student Forum Papers**

[W-5]  **Real-Time Byzantine Resilient Power Grid Infrastructure: Evaluation and Trade-offs**
Sahiti Bommareddy, **Maher Khan**, David J Sebastian Cardenas, Carl Miller, Christopher Bonebrake, Yair Amir, and Amy Babay, in *1st International Workshop on Explainability of Real-time Systems and their Analysis (ERSA) at IEEE Real-Time Systems Symposium (RTSS)*, Houston, TX, December 2022.

URL: [https://ieeexplore.ieee.org/abstract/document/9833853](https://ieeexplore.ieee.org/abstract/document/9833853)
DOI: 10.1109/DSN-W54100.2022.00022

[W-4]  **Data-Centric Analysis of Compound Threats to Critical Infrastructure Control Systems**
Sahiti Bommareddy, **Benjamin Gilby, Maher Khan**, Imes Chiu, Mathaiso Panteli, John W. van de Lindt, Linton Wells II, Yair Amir, and Amy Babay, in *52nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks Workshops (DSN-W)*, Baltimore, MD, June 2022, pp. 72-79.

URL: [https://ieeexplore.ieee.org/abstract/document/9833853](https://ieeexplore.ieee.org/abstract/document/9833853)
DOI: 10.1109/DSN-W54100.2022.00022

[W-3]  **Timely, Reliable, and Cost-Effective Internet Transport Service using Dissemination Graphs**
Amy Babay, Emily Wagner, Michael Dinitz, and Yair Amir, *N2Women Workshop*, New York, NY, October 2016. (Poster).

[W-2]  **Timely, Reliable, and Cost-effective Transport Service Using Dissemination Graphs**
Amy Babay, in *IEEE/IFIP International Conference Dependable Systems and Networks (DSN)*, Rio de Janeiro, Brazil, June 2015. (Student Forum).

[W-1]  **Fast Total Ordering for Modern Data Centers**
Amy Babay and Yair Amir, in *Proceedings of the 35th IEEE International Conference on Distributed Computing Systems (ICDCS)*, Columbus, OH, June 2015, pp. 762-763. (Extended Abstract and Poster).

URL: [https://ieeexplore-ieee-org.pittidm.oclc.org/document/7164975](https://ieeexplore-ieee-org.pittidm.oclc.org/document/7164975)
DOI: 10.1109/ICDCS.2015.97
Theses

[T-2] Timely, Reliable, and Cost-Effective Internet Transport Service using Structured Overlay Networks
Amy Babay, PhD Thesis, Johns Hopkins University, September 2018.
URL: https://jscholarship.library.jhu.edu/handle/1774.2/60095

[T-1] The Accelerated Ring Protocol: Ordered Multicast for Modern Data Centers
Amy Babay, MSE Thesis, Johns Hopkins University, May 2014.
URL: https://jscholarship.library.jhu.edu/handle/1774.2/37100

Patents

[P-2] Systems and Methods for Cloud-Based Control and Data Acquisition with Abstract State
Yair Amir, Amy Babay, and Thomas Tantillo, US Patent 10990083 B2 (International Patent Application PCT/US18/15451), filed January 2018, issued April 27, 2021.

[P-1] Network-Attack-Resilient Intrusion-Tolerant SCADA Architecture
Yair Amir, Amy Babay, and Thomas Tantillo, US Patent US 11140221 B2 (International Patent Application PCT/US17/38565), filed June 2017, issued October 5, 2021.

Funding

PI on Defense Logistics Agency (DLA) contract “Mobile Control Center Support for Intrusion-Tolerant SCADA”, November 2024 – July 2025, $105,000.

Co-PI, with PI Rosta Farzan, and Co-PIs Erin Walker and Christina Ndoh, on National Science Foundation (NSF) grant “CIVIC-PG Track B: Community-driven socio-technical infrastructure for data-driven air quality advocacy”, October 2024 – March 2025, $75,000.

Co-PI, with PI Daniel Cole, and Co-PIs Mai Abdelhakim, Alexis Kwasinski, Stephen Lee, Daniel Mossé, Erica Owen, on Department of Energy (DOE) grant “University of Pittsburgh Cyber Energy Center”, May 2024 – April 2026, $2,200,000.

PI on Defense Logistics Agency (DLA) contract “Seamless Linux-Based Intrusion-Tolerant Networks”, March 2024 – July 2024, $149,992.

University of Pittsburgh subcontract PI, with DoD PI Imes Chiu, on DoD/EPA/DOE Strategic Environmental Research and Development Program (SERDP) grant “Severe Impact Resilience: Framework for Adaptive Compound Threats”, October 2020 – September 2023, $1,715,040 (University of Pittsburgh contract $515,614).

Co-PI, with PI Abhishek Viswanathan (PhD advisee) and Co-PI Rosta Farzan on University of Pittsburgh Year of Data and Society grant “Enriching Citizen-Science data using context, feedback and community-oriented communication”, October 2021 – October 2022, $8,000.

Co-PI, with PI Adam Lee, and Co-PIs Jacob Biehl, Adriana Kovashka, Olga Kuchinskaya, Stephen Lee, Eleanor Mattern, on Pitt Cyber Accelerator Grant “Sensing Infrastructure”, March 2020 – March 2021, $15,000.

Selected Talks

• Cyber Threats and Intrusion Tolerance in the Power Grid
  Pacific Northwest National Lab, RD2C Workshop (Virtual) May 2024

• Panel: Thriving and Engaged Communities
  Southwest Pennsylvania Decarbonization Forum March 2023
• **Toward Intrusion-Tolerant Critical Infrastructure**  
  Williams College, Computer Science Colloquium  
  December 2022  
  Cornell University, Systems Lunch  
  October 2021  
  University of Pennsylvania, Distributed Systems Lab Seminar (Virtual)  
  September 2021

• **Severe Impact Resilience: Assessment Framework for Compound Threats**  
  DoD SERDP/ESTCP Symposium (Virtual)  
  December 2021

• **Panel: Cybersecurity for Critical Infrastructure**  
  IEEE Conference on Communications and Network Security (CNS) (Virtual)  
  October 2021

• **Panel: Residential, coastal, rural, urban, and cybersecurity resilience**  
  Texas Academy of Medicine, Engineering, Science & Technology (TAMEST)  
  October 2021  
  Natural Hazards Summit (Virtual)

• **Spire: Intrusion-Tolerant SCADA for the Power Grid**  
  Electric Power Industry Conference (EPIC)  
  October 2019  
  Army Corps of Engineers Webinar  
  November 2018  
  Army Engineer Association Seminar  
  August 2018

### Teaching

**University of Pittsburgh**

- **TELCOM 2310: Applications of Networks**  
  Graduate introductory course on computer networks.  
  Spring 2025, Fall 2023, Spring 2021

- **CS 1652: Data Communication and Computer Networks**  
  Undergraduate course on computer networks.  
  Spring 2025, Spring 2022

- **CS 3551: Advanced Topics in Distributed Information Systems**  
  Graduate seminar course focusing on recent results in distributed systems research.  
  Fall 2024, Spring 2020

- **CS 2510: (Distributed) Computer Operating Systems**  
  Graduate course on distributed systems, covering fundamentals and recent research results.  
  Spring 2023

- **CS 2520/TELCOM 2321: Wide Area Networks**  
  Graduate course on wide-area computer networks, covering fundamentals and recent research results.  
  Fall 2022, Fall 2021

- **INFSCI 1630/TELCOM 2310: Communication Networks/Applications of Networks**  
  Cross-listed undergraduate and graduate introductory course on computer networks.  
  Fall 2020

- **INFSCI 0017: Fundamentals of Object-Oriented Programming**  
  Undergraduate course covering basic concepts of object-oriented programming using Java (first programming course for Information Science majors).  
  Fall 2019

**Johns Hopkins University**

- **CS 310: Software for Resilient Communities**  
  Co-instructor and co-designer (with Yair Amir)  
  New project-based undergraduate course. Students work in small teams to design and develop useful open-source software products that support our communities.  
  Spring 2018

- **CS 220: Intermediate Programming (C/C++)**  
  Co-instructor (with Yair Amir)  
  Undergraduate course covering intermediate programming in C and C++ (second programming course for computer science majors).  
  Fall 2017, Fall 2015, Spring 2014, Fall 2013
Mentoring

PhD Advising

- Aren Alyahya. PhD in progress, Information Science, University of Pittsburgh.
- Huzaifah Nadeem. PhD in progress, Computer Science, University of Pittsburgh.
- Abhishek Viswanathan. PhD July 2024, Information Science with a concentration in Telecommunications, University of Pittsburgh.
  Thesis: “From Sensors to Stories – Enabling Community-driven, Actionable Data Collection for Air Quality Advocacy”
  URL: http://d-scholarship.pitt.edu/id/eprint/46795
- Maher Khan. PhD April 2024, Computer Science, University of Pittsburgh.
  Thesis: “Simplifying the Deployment of Intrusion-Tolerant Systems by Leveraging Cloud Resources”
  URL: http://d-scholarship.pitt.edu/id/eprint/46227

Research Project Advising

- Birju Patel, CS 2910 MS Project (Computer Science MS) Summer 2023
- Chao Shi (Information Science MS) Summer 2022-Spring 2023
- Wentao Wu, CS 1950 Capstone (Computer Science BS) Fall 2022
- Aaron Wu, CS 2910 MS Project (Computer Science MS) Fall 2022
- Shixiang Long (Information Science MS) Summer 2021-Fall 2022
- Benjamin Gilby, SCI Summer Scholars Program, Funded Research (Computer Science BS) Summer 2021-Summer 2022
- Ge Zeng (Computer Science BS) Summer 2020-Summer 2022
- Derrick Hicks, Funded Research (Computer Science BS) Summer 2022
- Kyle Tissue, CS 2910 MS Project (Computer Science MS) Spring 2022
- Aren Alyahya, INFSCI 2950 Independent Study (Information Science MS) Summer-Fall 2021
- Manal Alshahrani, INFSCI 2950 Independent Study (Information Science MS) Summer-Fall 2021
- Vasco Xu (Computer Science BS) Spring 2020-Summer 2021
- Nicholas Pilotti, CS 1950 Capstone (Computer Science BS) Summer 2021
- Gerasimos Palaiopanos, CS 2002 Project (Computer Science PhD) Spring 2021
- Jian Liu, CS 2002 Project (Computer Science PhD) Spring 2021
- Maxwell Trdina, INFSCI 1730 Independent Study (Information Science BS) Spring 2021
- Ismael Alonso, CS 2910 MS Project (Computer Science MS) Fall 2020
- Erhu He, CS 2002 Project (Computer Science PhD) “Power-Aware Operator Placement Based on Overlay Network” Spring 2020
- Edmund (Ned) Duhaime. MSE May 2017, Johns Hopkins University. Co-advised with Yair Amir. Study: “Seamless Overlays for Application Use.”
• Emily Wagner. MSE December 2016, Johns Hopkins University. Co-advised with Yair Amir. Project: “The Playback Network Simulator: Overlay Performance Simulations with Captured Data.”

External Professional Service

• Conference and Workshop Organization
  
  **Steering Committee Member: ApPLIED workshop** 2023-present
  **General Co-Chair: ApPLIED workshop at PODC** 2025
  **Program Committee Co-Chair: ApPLIED workshop at PODC** 2023
  **Doctoral Forum Co-Chair: IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN)** 2023
  **Travel Grants Committee: IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN)** 2023
  **Webmaster: IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN)** 2022
  **Demo & Poster Co-Chair: IEEE Int. Symposium on Reliable Distributed Systems (SRDS)** 2021
  **Publication Chair: ACM Internet Measurement Conference (IMC)** 2020
  **Publicity Co-Chair: IEEE Int. Symposium on Reliable Distributed Systems (SRDS)** 2020

• Conference Program Committees
  
  **IEEE Int. Conference on Distributed Computing Systems (ICDCS)** 2025, 2020
  **IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN), Poster Track** 2025
  **Network and Distributed System Security (NDSS) Symposium** 2025
  **ACM Int. Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), External Review Committee** 2024
  **IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN)** 2023, 2022, 2021
  **IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN), Disrupt Track** 2023
  **IEEE Int. Symposium on Reliable Distributed Systems (SRDS)** 2022, 2021, 2020, 2019
  **IEEE Int. Conference on the Design of Reliable Communication Networks (DRCN)** 2020, 2021
  **IEEE/IFIP Int. Conference on Dependable Systems and Networks (DSN), Doctoral Forum** 2020

• Journal Reviews
  
  **IEEE Transactions on Parallel and Distributed Systems (TPDS)** 2023
  **ACM Computing Surveys (CSUR)** 2020
  **IEEE Transactions on Dependable and Secure Computing (TDSC)** 2020, 2019
  **IEEE Transactions on Cloud Computing (TCC)** 2020

• Funding Agency Reviews
  
  **National Science Foundation (NSF) Review Panel** 2021

Additional Professional Experience

Partner **Spread Concepts LLC**

Bridging the gap between academic research and technologies and the commercial world.

Software Engineer **LTN Global Communications**

Worked on software development projects for a global-scale video flow transport and delivery service, including an access control system and a log management system.