Shawn Shuoshuo Chen

PhD student · Carnegie Mellon University
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Research Interests

Computer Networks, Optical Networks, Operating Systems, Machine Learning Systems

Education

Carnegie Mellon University — Aug. 2021 – May 2026 (expected)
Ph.D. in Computer Science — Pittsburgh, PA
Advisors: Prof. Srinivasan Seshan and Prof. Peter Steenkiste

University of Virginia — Aug. 2014 – May 2016
M.S. in Computer Engineering — Charlottesville, VA
Advisor: Prof. Malathi Veeraraghavan

Wuhan University — Sep. 2010 – Jun. 2014
B.S. in Electrical Engineering — Wuhan, China

Experience

Microsoft Azure — Redmond, WA
Research Intern — May 2024 – Aug. 2024

Microsoft Research — Redmond, WA
Research Intern — May 2022 – Aug. 2022

Google — Sunnyvale, CA
Technical Lead / Senior Software Engineer — Oct. 2016 - Apr. 2021

AMD Xilinx — Shanghai, China
Research Intern — Nov. 2013 – Aug. 2014

MeshSr Co. — Nanjing, China
Software Engineer Intern — Jul. 2013 – Sep. 2013

Awards

Argonne Leadership Computing Facility Director's Discretionary award	2025
Google Cloud Research Credits	2025
Lambda Research Grant	2025
CMU Provost / Graduate Student Assembly funding award	2025
NYU Henry M. MacCracken Fellowship (declined)	2020
Silver Perfy Award, *Google*	2019
Academic Excellence Award Nomination, *University of Virginia*	2016
OpenHW Vivado HLS Contest Runner-up, *AMD Xilinx*	2014
Outstanding Undergraduate Milestone Project, *Wuhan University*	2014

PUBLICATIONS

[1] **Shawn Shuoshuo Chen**, Daiyaan Arfeen, Minlan Yu, Peter Steenkiste, Srinivasan Seshan. Toward Co-adapting Machine Learning Job Shape and Cluster Topology. arXiv:2510.03891. October 2024.

[2] Brian Chang, Keqiang He, **Shawn Shuoshuo Chen**, Jiaxin Lin, Mingyang Zhang, Wenfei Wu, Aditya Akella. Balancing SDN Control Plane Availability and Traffic Engineering Efficiency in Data Centers. In Proceedings of the 32nd IEEE International Conference on Network Protocols (ICNP '24). Charleroi, Belgium. October 2024.

[3] **Shawn Shuoshuo Chen**, Keqiang He, Rui Wang, Srinivasan Seshan, Peter Steenkiste. Precise Data Center Traffic Engineering with Constrained Hardware Resources. In Proceedings of the 21st USENIX Symposium on Networked Systems Design and Implementation (NSDI '24). Santa Clara, CA. April 2024.

[4] **Shawn Shuoshuo Chen**, Weiyang Wang, Manya Ghobadi, Srinivasan Seshan, Peter Steenkiste. Zero Buffer Optical Packet Switching Data Center Network. In *poster session* of the 21st USENIX Symposium on Networked Systems Design and Implementation (NSDI '24 poster). Santa Clara, CA. April 2024.

[5] **Shawn Shuoshuo Chen**, Weiyang Wang, Christopher Canel, Srinivasan Seshan, Alex C. Snoeren, Peter Steenkiste. Time-division TCP for reconfigurable data center networks. In Proceedings of the ACM SIGCOMM 2022 Conference (SIGCOMM '22). Amsterdam, Netherlands. August 2022.

[6] Andrew D. Ferguson, Steve Gribble, Chi-Yao Hong, Charles Killian, Waqar Mohsin, Henrik Muehe, Joon Ong, Leon Poutievski,Arjun Singh, Lorenzo Vicisano, Richard Alimi, **Shawn Shuoshuo Chen**, Mike Conley, Subhasree Mandal, Karthik Nagaraj, Kondapa Naidu Bollineni, Amr Sabaa, Shidong Zhang, Min Zhu, Amin Vahdat. Orion: Google's Software-Defined Networking Control Plane. In Proceedings of the 18th USENIX Symposium on Networked Systems Design and Implementation (NSDI '21). Santa Clara, CA. April 2021.

[7] Yuanlong Tan, **Shuoshuo Chen**, Steve Emmerson, Yizhe Zhang, Malathi Veeraraghavan. Advances in Reliable File-Stream Multicasting over Multi-Domain Software Defined Networks (SDN). In Proceedings of the 28th International Conference on Computer Communication and Networks (ICCCN). Valencia, Spain. July 2019.

[8] **Shuoshuo Chen**, Xiang Ji, Malathi Veeraraghavan, Steve Emmerson, Joseph Slezak, Steven G. Decker. A cross-layer Multicast-Push Unicast-Pull (MPUP) architecture for reliable file-stream distribution. In Proceedings of the IEEE 40th Annual Computer Software and Applications Conference (COMPSAC). Atlanta, GA. June 2016.

Teaching

CS 15-441/641 Networking and the Internet, CMU: fall 2021, fall 2024

CS/ECE 4457 Computer Networks, UVA: fall 2014, fall 2015

Service

Program Committee

- Journal of Optical Switching and Networking 2025
- IEEE/ACM Transactions on Networking 2024
- IEEE GLOBECOM 2024

Artifact Evaluation Committee

- ACM SIGCOMM 2024
- ACM CoNEXT 2024
- ACM SIGCOMM 2023
- ACM CoNEXT 2023
- USENIX OSDI/ATC 2022

Talks and Presentations

Toward Co-adapting Machine Learning Job Shape and Cluster Topology

- Google Networking Research Summit (Oct. 2025)

Reshaping Transport and Traffic Engineering in Reconfigurable Data Center Networks

- Workshop on Reconfigurable Networks, Cornell. (Jun. 2025)

Zero Buffer Optical Packet Switching Data Center Network

- NSDI'24, Santa Clara, CA. (Apr. 2024)

Optical Network Infrastructure Support for Machine Learning

- Google Networking Research Summit (Oct. 2023)

Precise Data Center Traffic Engineering with Constrained Hardware Resources

- Google systems talks seminar. (Apr. 2024)
- NSDI'24, Santa Clara, CA. (Apr. 2024)
- Harvard. (May. 2024)
- Microsoft Azure SPARC team. (May. 2024)

Time-division TCP for reconfigurable data center networks

- MIT. (Aug. 2022)
- ACM SIGCOMM'22, Amsterdam, Netherlands. (Aug. 2022)
- Google S2Infra team. (Sep. 2022)

Advances in Reliable File-Stream Multicasting over Multi-Domain Software Defined Networks

- IEEE ICCCN, Valencia, Spain. (Jul. 2019)

Network Infrastructure at Google

- University of Virginia. (Mar. 2019)

Optimizing SDN Routing Convergence at Scale

- Google Networking Research Summit (Aug. 2018)