Arjun Devraj

adevraj@cs.cornell.edu arjundevraj.github.io

Education

Cornell University 2023 – Present
Ph.D. Candidate in Computer Science *Ithaca, NY*

- Advisor: Rachee Singh

Cornell University 2026
M.S. in Computer Science *Ithaca, NY*

Princeton University 2017 – 2021
A.B. in Computer Science, summa cum laude *Princeton, NJ*

- GPA: 3.93/4.0
- Advisor: Jennifer Rexford
- Minor: Statistics and Machine Learning

Honors and Awards

Best Paper Award – SIGCOMM 2026

Corning Outstanding Student Paper Award – OFC 2026

National Science Foundation (NSF) Graduate Research Fellowship 2023

Sigma Xi Award for Outstanding Undergraduate Research – Princeton University 2021

Phi Beta Kappa – Princeton University 2021

Publications

[1] Arjun Devraj, Umesh Krishnaswamy, Ying Zhang, Karuna Grewal, Justin Hsu, Eva Tardos, and Rachee Singh. Autonomy Without Anarchy in Decentralized WAN Traffic Engineering. *USENIX Symposium on Networked Systems Design and Implementation* ***(NSDI)***, 2027.

[2] Abhishek Vijaya Kumar, Arjun Devraj, and Rachee Singh. Mo Collectives, Mo Problems. *USENIX Symposium on Networked Systems Design and Implementation* ***(NSDI)***, 2027.

[3] Arjun Devraj and Rachee Singh. Breaking Temporal Symmetry in Collective Communication Algorithms. *ACM Workshop on Hot Topics in Networks* ***(HotNets)***, 2026.

[4] Vaibhav Mehta, Arjun Devraj, Bill Owens, Justin Hsu, and Rachee Singh. λ_λ: A Programming Language for Silicon Photonics. *ACM Special Interest Group on Data Communication* ***(SIGCOMM)***, 2026.
Best Paper Award

[5] Arjun Devraj, Bill Owens, Daniel Pérez-López, and Rachee Singh. In-Network Analog AllReduce for ML with Programmable Integrated Photonics. *Optical Fiber Communication Conference* ***(OFC)***, 2026.
Corning Outstanding Student Paper Award

[6] Abhishek Vijaya Kumar, Eric Ding, Arjun Devraj, Darius Bunandar, and Rachee Singh. Reconfigurable Torus Fabrics for Multi-tenant ML. *ACM International Conference on Architectural Support for Programming Languages and Operating Systems* ***(ASPLOS)***, 2026.

[7] Arjun Devraj, Bill Owens, Umesh Krishnaswamy, Ying Zhang, and Rachee Singh. HEDGE: Traffic Engineering with Probabilistic Link Capacities. *USENIX Symposium on Networked Systems Design and*

*Implementation **(NSDI)***, 2026.

[8] Arjun Devraj, Bill Owens, and Rachee Singh. The Reality of Chasing Shannon's Limit in Optical Wide-Area Networks. *ACM Internet Measurement Conference **(IMC)***, 2025.

[9] Abhishek Vijaya Kumar, Arjun Devraj, Darius Bunandar, and Rachee Singh. Chip-to-chip photonic connectivity in multi-accelerator servers for ML. *Optical Fiber Communication Conference **(OFC)***, 2025.

[10] Abhishek Vijaya Kumar, Arjun Devraj, Darius Bunandar, and Rachee Singh. A case for server-scale photonic connectivity. *ACM Workshop on Hot Topics in Networks **(HotNets)***, 2024.

[11] Arjun Devraj, Thomas L. Griffiths, and Qiong Zhang. Reconciling categorization and memory via environmental statistics. *Psychonomic Bulletin & Review*, 2024.

[12] Arjun Devraj, Liang Wang, and Jennifer Rexford. REDACT: Refraction Networking from the Data Center. *ACM SIGCOMM Computer Communication Review **(CCR)***, 2021.

[13] Arjun Devraj, Qiong Zhang, and Thomas L. Griffiths. The Dynamics of Exemplar and Prototype Representations Depend on Environmental Statistics. *Annual Meeting of the Cognitive Science Society **(CogSci)***, 2021.

[14] Arjun Devraj, Lindsey Bowen, and Rachee Singh. Understanding the Synchronization Tax in GPU Scale-Up Domains. *In submission*. arXiv:2608.22503

[15] Arjun Devraj, Eric Ding, Abhishek Vijaya Kumar, Robert Kleinberg, and Rachee Singh. Efficient AllReduce with Stragglers. *In submission*. arXiv:2505.23523

Talks and Presentations

Confluence Workshop at EPFL, *Lausanne, Switzerland*	October 2026
Microsoft Azure RDMA Transport Group, *Mountain View, CA*	August 2026
Google Networking Research Summit, *Sunnyvale, CA*	October 2025
Meta Workshop on WAN Control, *Menlo Park, CA*	October 2025
ACE Center for Evolvable Computing, *Virtual*	August 2025
Workshop on Reconfigurable Networks, *Ithaca, NY*	June 2025
Cornell Systems Research Seminar, *Ithaca, NY*	March 2024

Teaching Experience

TA for *CS 4450/5456: Introduction to Computer Networks*, Cornell University	Spring 2026
Lab TA for *COS 126, 226, and 217*, Princeton University	Fall 2019, Spring 2020
TA for *COS 226: Data Structures and Algorithms*, Princeton University	Fall 2018

Industry Experience

Microsoft — June 2026 – August 2026
Intern, Mentor: Umesh Krishnaswamy — *Mountain View, CA*

Meta — August 2021 – July 2023
Software Engineer, Ads Responsibility & Privacy — *Menlo Park, CA*

Meta — June 2020 – August 2020
Software Engineer Intern, WhatsApp Android — *Menlo Park, CA*