

Anup Agarwal

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Research Interests

Networked Systems, Transport Protocols, Performance Modeling/Verification, Resource Management, Automated Reasoning.

Education

- 2019–present **Ph.D. in Computer Science**, *Carnegie Mellon University*
Advisor: Prof. Srinivasan Seshan
Thesis: Designing network control algorithms with performance guarantees
- 2019–2022 **M.S. in Computer Science - Research**, *Carnegie Mellon University*
- 2015–2019 **B.Tech. in Computer Science and Engineering**, *Indian Institute of Technology, Guwahati*
President of India Gold Medal

Publications

- NSDI 2024 Towards provably performant congestion control.
Anup Agarwal, Venkat Arun, Devdeep Ray, Ruben Martins, Srinivasan Seshan.
- SoCC 2024 Exploring the Efficiency of Renewable Energy-based Modular Data Centers at Scale.
Jinghan Sun, Zibo Gong, **Anup Agarwal**, Shadi Noghabi, Ranveer Chandra, Marc Snir, Jian Huang.
- NSDI 2023 Unlocking unallocated cloud capacity for long, uninterruptible workloads.
Anup Agarwal, Shadi Noghabi, Íñigo Goiri, Srinivasan Seshan, Anirudh Badam.
- HotNets 2022 Automating network heuristic design and analysis.
Anup Agarwal, Venkat Arun, Devdeep Ray, Ruben Martins, Srinivasan Seshan.
- NSDI 2022 HeteroSketch: Coordinating Network-wide Monitoring in Heterogeneous and Dynamic Networks.
Anup Agarwal, Zaoxing Liu, Srinivasan Seshan.
- HotNets 2021 Virtual Battery: Redesigning Cloud Computing for Renewable Energy.
Anup Agarwal*, Jinghan Sun*, Shadi Noghabi, Srinivasan Iyengar, Anirudh Badam, Ranveer Chandra, Srinivasan Seshan, Shivkumar Kalyanaraman. (*Equal contribution)
- TaPoPF Workshop 2021 Sketchy With a Chance of Adoption: Can Sketch-Based Telemetry Be Ready for Prime Time?
Zaoxing Liu, Hun Namkung, **Anup Agarwal**, Antonis Manousis, Peter Steenkiste, Srinivasan Seshan, Vyas Sekar.
- NSDI 2020 ABC: A Simple Explicit Congestion Control Protocol for Wireless Networks.
Prateesh Goyal, **Anup Agarwal**, Ravi Netravali, Mohammad Alizadeh, Hari Balakrishnan.
- ICASSP 2018 Opportunistic Sensing with Mic Arrays on Smart Speakers for Distal Interaction and Exercise Tracking.
Anup Agarwal, Mohit Jain, Pratyush Kumar, Shwetak Patel.

Industry Experience & Internships

- Summer 2024 **Research Intern**, *Microsoft Research*, Mountain View, CA
Azure Hardware Systems and Infrastructure
With Ahmad Ghalayini, Abdul Kabbani.
- Summer 2021 **Research Intern**, *Microsoft Research*, Redmond, WA (Virtual, Part-time)
Networking Research Group and Research for Industry
With Shadi Noghabi, Anirudh Badam.
- Summer 2020 **Research Intern**, *Microsoft Research*, Redmond, WA (Virtual)
Azure Global Research Team
With Anirudh Badam, Íñigo Goiri, Ranveer Chandra.

- Summer 2019 **Intern**, *Tower Research Capital*, Gurugram, India
Developer Tools Team
- Summer 2018 **Research Intern**, *Massachusetts Institute of Technology*, Cambridge, MA
With Prateesh Goyal, Prof. Ravi Netravali, Prof. Hari Balakrishnan, Prof. Mohammad Alizadeh.
- Summer 2017 **Research Intern**, *IBM India Research Lab*, Bengaluru, India
With Mohit Jain, Prof. Pratyush Kumar, Prof. Shwetak Patel.

Patents

- 2021 Multi User Interaction with Audio Devices using Speech and Gestures
Mohit Jain, Pratyush Kumar, **Anup Agarwal**. [Granted, US10928917B2]
- 2022 Exercise Monitoring and Coaching using Audio-only Devices
Mohit Jain, Pratyush Kumar, **Anup Agarwal**. [Granted, US20200114206A1]

Awards, Honors, and Grants

- 2019 President of India Gold Medal at IIT Guwahati, for highest GPA across all departments.
- 2016–2018 Institute Merit Scholarship at IIT Guwahati, for highest GPA in my department.

Professional Service

- 2022, 2023 Reviewer, IEEE/ACM Transactions on Networking
- 2024 External Review Committee, USENIX ATC

Teaching

Teaching Assistant, Carnegie Mellon University

- Fall 2023 15-857. Analytical Performance Modeling & Design of Computer Systems
- Spring 2022 15-440/640. Distributed Systems

Initiatives

- 2022–present Ph.D. Mentorship Program, CMU.
- ▷ Started a new mentoring program, where pods of Ph.D. students learn from each other.
 - ▷ Manage and organize events for boosting participation.

Technical Proficiency

C/C++, Python. Familiar with: Rust, Java, Spark/Hadoop, Linux networking stack, SQL