AYUSH MISHRA
Postdoctoral Researcher, Networked Systems Group, ETH Zurich

CONTACT INFORMATION	email: aymishra [at] ethz.ch phone: +41 78 2515146 web: ayushmishra.net
RESEARCH INTERESTS	Systems and Networking $\rightarrow$ Congestion Control, TCP, QUIC, Measurements.

EDUCATION

National University of Singapore, Singapore
Doctor of Philosophy (PhD), Computer Science
Thesis:
Understanding the Modern Internet's Heterogeneous Congestion Control Landscape
Advisor: Dr. Ben Leong
Jan 2019 - Aug 2024

National Institute of Technology, Trichy, Tamil Nadu, India
Bachelor of Technology, Computer Science and Engineering
May 2018   CGPA: 8.70/10.00

Global Indian International School, Singapore
Higher Secondary School Certificate Examination, CBSE
May 2014   Aggregate 95.6%

PROFESSIONAL EXPERIENCE

Postdoctoral Researcher - Networked Systems Group, ETH Zurich
Jan 2025 - *Present*

Postdoctoral Research Fellow - National University of Singapore
Aug 2024 - Dec 2024

Software Development Intern - HP Enterprises, Singapore
May, 2016 - June, 2016

AWARDS

IMDA Excellence in Computing Award   June 2025
School of Computing, National University of Singapore

Valedictorian, Class of 2025   June 2025
School of Computing, National University of Singapore

ACM SIGMETRICS Doctoral Dissertation Award   November 2024
Runner up

Dean's Graduate Research Excellence Award   August 2024
School of Computing, National University of Singapore

Research Achievement Award (3x)   January 2024, January 2023, January 2020
School of Computing, National University of Singapore

Award for Excellence in Teaching (2x)   January 2021, January 2022
School of Computing, National University of Singapore

INSPIRE Scholarship for Higher Education   July 2014
Department of Science and Technology (DST), Government of India

APJ Abdul Kalam Award for Academic Proficiency   June 2012
Global Indian International School, Singapore

SERVICE   **TPC:** IMC (2025, 2026)
Contributed reviews: SIGCOMM (2024), NSDI (2024), INFOCOM (2024), IMC (2023), ICNP (2024, 2023, 2022, 2021), APNet (2021), ACM HotNets (2020)

PUBLICATIONS   **Managing Congestion Control Heterogeneity on the Internet with *Approximate Performance Isolation***
Proceedings of NSDI 2026
Ayush Mishra, Archit Bhatnagar, Yixuan Zhang, Ben Leong, Gao Ya, Raj Joshi

Five Blind Men and the Internet: Towards an Understanding of Internet Traffic
under submission, available on arXiv
Ege C Kirci, Ayush Mishra, Laurent Vanbever

Into the Wild: Real-World Testing for ML-Based ABR
Proceedings of PACMI 2025
Benjamin Hoffman, Alexander Dietmller, Ayush Mishra, Laurent Vanbever

Better QUIC Implementations with NesQUIC
SIGCOMM 2025, Posters and Demos
Laurin Brandner, Kevin Marti, Bas Nickel, Ayush Mishra, Gianni Antichi, Laurent Vanbever

Is Custom Congestion Control a Bad Idea for Circumvention Tools?
Proceedings of FOCI 2025
Wayne Wang, Diwen Xue, Piyush Kumar, Ayush Mishra, Roya Ensafi

Understanding the Modern Internet's Heterogeneous Congestion Control Landscape
PhD Thesis
Ayush Mishra

Keeping an Eye on Congestion Control in the Wild with *Nebby*
Proceedings of SIGCOMM 2024
Ayush Mishra, Lakshay Rastogi, Raj Joshi, and Ben Leong.

Expanding the Design Space for in-Network Congestion Control on the Internet
SIGCOMM 2024, Posters and Demos
Ayush Mishra, Harsh Gondaliya, Lingesh Kumaar, Archit Bhatnagar, Raj Joshi, Ben Leong

Containing the Cambrian Explosion in QUIC Congestion Control
Proceedings of IMC 2023
Ayush Mishra and Ben Leong.

Masking Corruption Packet Losses in Datacenter Networks with Link-local Retransmission
Proceedings of SIGCOMM 2023
Raj Joshi, Chaw Hwan Song, Xin Zhe Khooi, Nishant Budhdev, Ayush Mishra, Mun Choon Chan, and Ben Leong.

Are we heading towards a BBR-dominated Internet?
Proceedings of IMC 2022
Ayush Mishra, Tiu Wee Han, and Ben Leong.

Understanding Speciation in QUIC Congestion Control
Proceedings of IMC 2022
<u>Ayush Mishra</u>, Sherman Lim, and Ben Leong.

LinkGuardian: Mitigating the impact of packet corruption loss with link-local retransmission
Proceedings of APNet 2022
Raj Joshi, Qi Guo, Nishant Budhdev, <u>Ayush Mishra</u>, Mun Choon Chan, Ben Leong

Conjecture: Exitence of Nash Equilibria in Modern Internet Congestion Control
Proceedings of APNet 2021
<u>Ayush Mishra</u>, Jingzhi Zhang, Melodies Sim, Sean Ng, Raj Joshi, and Ben Leong.

The Great Internet TCP Congestion Control Census
Proceedings of SIGMETRICS 2020
<u>Ayush Mishra</u>, Xiangpeng Sun, Atishya Jain, Sameer Pande, Raj Joshi, and Ben Leong.

TECHNICAL SKILLS		
Programming:		C, C++, Python, Bash, Java, Go, Rust
Mobile and Web Technologies:		Android, Django, HTML, CSS, JavaScript
Networking:		P4-16, OpenFlow, Mininet, Docker

TECHNICAL SKILLS

Programming: C, C++, Python, Bash, Java, Go, Rust
Mobile and Web Technologies: Android, Django, HTML, CSS, JavaScript
Networking: P4-16, OpenFlow, Mininet, Docker

TEACHING EXPERIENCE

NUS:
- **Teaching Assistant, CS1010X: Programming Methodology**
  Jan, 2019 - June, 2019, Instructor: *Dr. Ben Leong*, Student Rating: **4.1/5.0**
  Jan, 2020 - June, 2020, Instructor: *Dr. Tan Tiow Seng*, Student Rating: **4.4/5.0**

- **Teaching Assistant, CS1231S: Discrete Structures**
  Jan, 2021 - May, 2021, Instructor: *Dr. Aaron Tan*, Student Rating: **4.7/5.0**

- **Teaching Assistant, CS5229: Advanced Computer Networks**
  Aug, 2021 - Dec, 2021, Instructor: *Dr. Ben Leong*

ETH Zurich:
- **Teaching Assistant: Seminar in Computer Networks**
  Feb, 2025 - May, 2025, Instructor: *Dr. Laurent Vanbever*

- **Teaching Assistant: Advanced Topics in Communication Networks**
  Sep, 2025 - Dec, 2025, Instructor: *Dr. Laurent Vanbever*