Taveesh Sharma

+1-773-322-3809 | taveesh@uchicago.edu

 taveesh-sharma | staveesh | Taveesh Sharma | taveeshsharma.com

Chicago, IL - 60615, United States

EDUCATION

• **University of Chicago** *September 2022 - Present*
PhD, Computer Science Chicago, USA

• **University of Cape Town** *July 2020 - May 2022*
MSc, Computer Science Cape Town, South Africa

• **BITS Pilani** *August 2014 - August 2018*
B.E., Computer Science Goa, India

PROJECTS

• **Regionalization of Crowdsourced Latency Measurements**
Goal: Construction of measurement-driven sampling boundaries for Internet performance []

◦ Processed and analyzed a large US-wide proprietary dataset of crowdsourced speed test measurements provided by Ookla.

◦ Developed a geospatial analysis technique to identify contiguous clusters of poor Internet performance across Chicago.

◦ Compared the temporal stability of clusters across different metric choices, network operators and choices of spatial aggregation units.

◦ Authored a conference publication for ACM SIGMETRICS 2025 (Acceptance rate: 15.4%)

• **VCAML** *September 2022 - May 2023*
Goal: Passive inference of video call quality from encrypted network traffic. []

◦ Developed a novel Machine Learning (ML) method to infer the end-user quality of experience (QoE) delivered over Google Meet, Microsoft Teams and Cisco Webex.

◦ Implemented a measurement tool that collected video call quality and network information from 15 real-world access networks.

◦ Collected in-lab data under the influence of diverse network conditions emulated using traffic shaping.

◦ Presented this work at the ACM Internet Measurement Conference (IMC), held in 2023. (Acceptance rate: 25.8%)

PUBLICATIONS   C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

[C.1] **Taveesh Sharma**, Paul Schmitt, Francesco Bronzino, Nick Feamster, and Nicole Marwell. 2024. **Beyond Data Points: Regionalizing Crowdsourced Latency Measurements.** Proceedings of the ACM on Measurement and Analysis of Computing Systems. 8, 3, Article 34 (December 2024), 24 pages. https://doi.org/10.1145/3700416 (to appear).

[C.2] **Taveesh Sharma**, Tarun Mangla, Arpit Gupta, Junchen Jiang, Nick Feamster (2023). **Estimating WebRTC Video QoE Metrics Without Using Application Headers.** In ACM SIGCOMM Internet Measurement Conference (IMC), pp. 485–400, Montreal, Canada. 16 pages. https://doi.org/10.1145/3618257.3624828.

[C.3] **Taveesh Sharma**, Jonatas Marques, Nick Feamster, Nicole Marwell (2023). **A First Look at the Spatial and Temporal Variability of Internet Performance Data in Hyperlocal Geographies.** In Research Conference on Communications, Information, and Internet Policy (TPRC), pp. 1–6, Washington, DC.

[C.4] Enock Samuel Mbewe, **Taveesh Sharma**, and Josiah Chavula (2022) **PowerQoPE: A Personal Quality of Internet Protection and Experience Configurator**, Proceedings of IFIP International Symposium on Human Aspects of Information Security & Assurance (HAISA 2022), 6-7 July 2022, Mytilene, (Greece), Springer.

[C.5] Dominique Oosthuizen, **Taveesh Sharma**, Josiah Chavula, Melissa Densmore (2022) **Investigating the Usability and Quality of Experience of Mobile Video-Conferencing Apps Among Bandwidth-Constrained Users in South Africa** (SAICSIT 2022), 18-20 July 2022, Cape Town, South Africa, Association for Computing Machinery.

[T.1] **Taveesh Sharma** (2023). **Investigating optimal internet data collection in low resource networks**. Faculty of Science, Department of Computer Science, University of Cape Town. http://hdl.handle.net/11427/38141

ARTICLES

[A.1] *Guest Author,* **Enhancing Internet Resilience with Spatial Analysis.** Internet Society (ISOC) Pulse Blog (December 2024)

PROFESSIONAL EXPERIENCE

• **Internet Society [🌐]**   *July 2021 - December 2021*
Research Assistant   Cape Town, South Africa
  ◦ Contributed to the redevelopment of the African Route Collectors Data Analyzer (ARDA) system, a platform providing unique insights into interconnection and traffic exchange trends across the African region, with data spanning from 2005 to the present.

• **ePayLater [🌐]**   *February 2020 - July 2020*
Software Engineer   Gurgaon, India
  ◦ Developed backend APIs for an ordering platform that supported small business owners (*Kiranas*) during the COVID-19 pandemic in India.
  ◦ Built a fuzzy search engine for an inventory of over 100,000 grocery products.
  ◦ The platform helped these businesses generate revenue by connecting them to the nearest customers while adhering to social distancing norms.

• **PayPal, Inc. [🌐]**   *August 2018 - October 2019*
Software Engineer   Chennai, India
  ◦ Engineered a JIRA approval chain system that improved time to market (TTM) for fraud detection models by 275 days of annual developer effort.
  ◦ Developed a sandbox environment that automatically: (1) evaluated SQL syntax, (2) provided user feedback, and (3) performed sanity checks on resulting data, before SQL scripts were deployed in production.

• **PayPal, Inc. [🌐]**   *July 2017 - December 2017*
Intern   Chennai, India
  ◦ Performed an ARIMA time-series analysis to forecast the company's financial losses resulting from its buyer protection policy.
  ◦ Conducted tutoring sessions in Python programming for a growing team of Risk analysts.

TEACHING ASSISTANTSHIPS

• **Machine Learning for Computer Systems**   *Fall 2024*
University of Chicago
• **Machine Learning for Computer Systems**   *Fall 2023*
University of Chicago
• **Python Programming**   *Jan-May 2022*
University of Cape Town
• **C Programming**   *Jan-May 2016*
BITS Pilani

SKILLS

• **Programming Languages:** Python, Java, Golang, C/C++, JavaScript
• **Web Technologies:** Flask, Spring Boot, Dropwizard
• **Database Systems:** PostgreSQL, MongoDB, InfluxDB, SQLite
• **Data Science & Machine Learning:** Pandas, GeoPandas, NumPy, Scikit-Learn, Seaborn
• **Cloud Technologies:** Google Cloud Platform (GCP)
• **DevOps & Version Control:** Docker, Git, GitHub

HONORS AND AWARDS

• **Crerar Fellowship**   *September 2022*
Department of Computer Science, University of Chicago
• **Building Research Active Academic Staff (BRAAS) Grant**   *July 2020*
University of Cape Town
• **3rd Place at PayPal RCG Hackathon**   *August 2018*
PayPal, Inc.

VOLUNTEER EXPERIENCE

- **Tour Guide and Presenter** *September 2024*
  Neubauer Phoenix STEM Program, University of Chicago
  ◦ Led a group of high school students on a tour of the lab, showcasing ongoing research projects and the work of lab members.
  ◦ Presented graduate research topics in an engaging and accessible manner.
  ◦ Facilitated discussions and answered questions to promote interest in STEM fields.

- **Artifacts Committee Reviewer** *July 2024 - September 2024*
  ACM SIGCOMM, ACM CoNEXT
  ◦ Evaluated research artifacts submitted alongside conference publications.
  ◦ Provided feedback to paper authors on artifact usability and reproducibility.

- **Shadow Technical Committee Reviewer** *May 2022 - July 2022*
  ACM Internet Measurement Conference (IMC)
  ◦ Conducted peer reviews for submitted research papers, providing feedback and evaluating contributions to the conference.
  ◦ Gained insights into the peer-review process and trends in Internet measurement research.

- **Summer Intern** *May 2016 - July 2016*
  Indian Red Cross Society
  ◦ Assisted in the customization of a virtual learning platform for Indian Red Cross Society's Staff and Volunteers.