

Taveesh Sharma

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🌐 [taveesh-sharma](https://taveesh-sharma.github.io) 🌐 [staveesh](https://staveesh.com) 🌐 [Google Scholar](https://scholar.google.com/citations?user=...) 🌐 taveeshsharma.com

EDUCATION

University of Chicago – Ph.D., Computer Science (Advisor: Nick Feamster)	Sept 2022 – June 2026 (Expected)
University of Chicago – M.S., Computer Science	Sept 2022 – Dec 2024
University of Cape Town – M.Sc., Computer Science (Advisor: Josiah Chavula)	July 2020 – Aug 2022
BITS Pilani – B.E., Computer Science	Aug 2014 – Aug 2018

RESEARCH INTERESTS

Internet measurement and performance analysis; Machine Learning (ML) for Networking; Quality of Experience (QoE) inference; network security and privacy; spatial-temporal analysis; measurement methodology for broadband policy evaluation.

PUBLICATIONS

Under Submission

- S. Ray, **T. Sharma**, J. Marques, P. Schmitt, F. Bronzino, N. Feamster. "Characterizing the Impact of Active Queue Management on Speed Test Measurements." Under submission to *ACM IMC 2026*.
- **T. Sharma**, A. Chu, P. Schmitt, F. Bronzino, N. Marwell, N. Feamster. "Less is More: Optimizing Probe Selection Using Shared Latency Anomalies." Under submission to *ACM CoNEXT 2026*.

Peer-Reviewed Conference Publications

- **T. Sharma**, P. Schmitt, F. Bronzino, N. Feamster, N. Marwell. "Beyond Data Points: Regionalizing Crowdsourced Latency Measurements." *ACM SIGMETRICS*, Vol. 8, No. 3, December 2024.
- **T. Sharma**, T. Mangla, A. Gupta, J. Jiang, N. Feamster. "Estimating WebRTC Video QoE Metrics Without Using Application Headers." *ACM IMC*, Montreal, October 2023.
- **T. Sharma**, J. Marques, N. Feamster, N. Marwell. "A First Look at the Spatial and Temporal Variability of Internet Performance Data in Hyperlocal Geographies." *TPRC*, Washington DC, September 2023.
- E. S. Mbewe, **T. Sharma**, J. Chavula. "PowerQoPE: A Personal Quality of Internet Protection and Experience Configurator." *IFIP HAISA*, Mytilene, Greece, July 2022.
- D. Oosthuizen, **T. Sharma**, J. Chavula, M. Densmore. "Investigating the Usability and QoE of Mobile Video-Conferencing Apps Among Bandwidth-Constrained Users in South Africa." *SAICSIT*, Cape Town, July 2022.

Thesis: T. Sharma. "Investigating Optimal Internet Data Collection in Low Resource Networks." M.Sc. Thesis, University of Cape Town, 2023.

RESEARCH EXPERIENCE

University of Chicago – Graduate Researcher (Advisor: Nick Feamster) Sept 2022 – Present

- **Crowdsourced Measurement Spatial Clustering:** Developed methodology to spatially interpolate and cluster crowdsourced latency measurements, enabling inference about unmeasured locations from biased and sparse user-initiated speed test data.
- **Hyper-local Variations in Broadband Internet Performance:** Analyzed longitudinal RTT measurements from **88 residential vantage points** across **30+ Chicago neighborhoods**. Showed geographically proximate points often exhibit uncorrelated anomalies, and temporally correlated events may span non-contiguous neighborhoods.
- **WebRTC QoE Estimation:** Built ML models estimating video quality metrics (bitrate, frame rate, resolution) from encrypted network traffic without application headers.
- **Probe Selection Optimization:** Designed algorithm optimizing probe selection using shared latency anomaly patterns, reducing measurement infrastructure costs while maintaining detection coverage.

Cisco ThousandEyes – Research Intern June 2025 – Sept 2025

- Developed event detection algorithms identifying Internet outages and HTTP latency anomalies from global telemetry spanning **4M+ residential routers** and **7,000 ISPs**.
- Designed city-scale and ISP-level anomaly detection methodology; authored technical write-up on Engineering Blog.

University of Cape Town – Graduate Researcher (Advisor: Josiah Chavula) July 2020 – Aug 2022

- **Topology-Aware Scheduling:** Investigated conflict-aware scheduling algorithms for active measurements in low-resource networks. Demonstrated graph-coloring-based AOSD achieves higher job success rates and lower platform delay.

- **QoSMon Platform:** Designed measurement orchestration server coordinating active measurements across distributed Android clients via persistent WebSockets. Implemented conflict detection using binary conflict matrices.
- **SDN Testbed:** Built an SDN-based simulated testbed for running controlled experiments and evaluating scheduling algorithms under various network conditions.
- **PowerQoPE:** Designed user-centric system for Internet security configuration using QoP/QoE trade-offs. Conducted user study (**n=14**) on security decision framing.

Internet Society & AFRINIC – Research Assistant

July 2021 – Dec 2021

- Contributed to African Route Collectors Data Analyzer (ARDA), analyzing routing and traffic exchange trends across Africa using data spanning 2005–present.

INDUSTRY EXPERIENCE

PayPal, Inc. – Software Engineer

Aug 2018 – Oct 2019

- Engineered automated approval workflow for fraud detection model deployments, reducing time-to-market by **275 developer-days annually**.

PayPal, Inc. – Intern

July 2017 – Dec 2017

- Developed ARIMA time-series models forecasting financial losses from buyer protection claims.

TECHNICAL SKILLS

Languages: Python, Java, Golang, C/C++, JavaScript, SQL **ML/Data:** PyTorch, Scikit-Learn, PySpark, Pandas, GeoPandas
Systems: Flask, Spring Boot, Docker, Android, WebRTC **Data Systems:** BigQuery, PostgreSQL, MongoDB, InfluxDB

TEACHING

Teaching Assistant, Entrepreneurship in Technology – University of Chicago

Winter 2026

Teaching Assistant, Machine Learning for Computer Systems – University of Chicago

Fall 2023, 2024

Teaching Assistant, Python Programming – University of Cape Town

Jan – May 2022

Teaching Assistant, C Programming – BITS Pilani

Jan – May 2016

HONORS & AWARDS

- Crerar Fellowship, University of Chicago (2022)
- BRAAS Grant, University of Cape Town (2020)
- 3rd Place, PayPal Hackathon (2018)

ARTICLES & OUTREACH

“Enhancing Internet Resilience with Spatial Analysis.” *Internet Society Pulse Blog*, December 2024.

“Measuring ISP Health: City-scale Outage and Timing Anomaly Detection.” *Cisco ThousandEyes Engineering Blog*, October 2025.