

ROHAIL ASIM

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SUMMARY

PhD in Computer Science from New York University, with a focus on systems at the intersection of networking, AI, and web technologies. I design and deploy high-impact solutions that reduce latency, improve quality of experience, and expand digital access ranging from 5G/AR infrastructure to low-bandwidth connectivity systems in underserved regions. My work has led to measurable real-world outcomes, open-source adoption, publications, and media attention. I bring deep technical expertise and a strong track record of translating advanced research into scalable, socially meaningful technologies.

EDUCATION

New York University

Expected August 2025

PhD in Computer Science - CGPA: 3.92/4.0

Relevant Coursework: Advanced Algorithms, Databases, Distributed Systems

Lahore University of Management Science (LUMS)

2015 - 2019

Bachelor of Computer Science - CGPA: 3.70/4.0 (Graduated with Distinction)

Relevant Coursework: Network Centric Computing, Distributed Systems, Advanced Programming, Artificial Intelligence

EXPERIENCE

Graduate Research Assistant

Sep 2020 - Present

New York University

New York, USA

- Designed and implemented **Hera**, a modular QoE-aware rate control framework for AR/VR applications in 5G networks, integrating a custom TCP Linux kernel module in C with WebXR-based multi-user environments to reduce interaction latency by up to 66%, improve video quality by 50% average bitrate
- Developed **Zeus**, a novel benchmarking framework for evaluating congestion control algorithms (CCAs) in 5G environments and led the most comprehensive cross-protocol measurement study to date across 5G environments using Python, Mahimahi, and NS-3 for repeatable, scenario-aware analysis
- Conducted a comprehensive study on the impact of generative AI on educational institutions revealing GenAI's performance across 32 university courses, exposing the unreliability of AI-detection tools, and influencing global academic policy debates on generative AI across major media outlets worldwide
- Developed **Sonic**, a novel connectivity system leveraging FM radio and SMS to deliver simplified, pre-rendered web content to low-end mobile devices in internet-deprived regions
- Developed **LiteWeb**, a JavaScript optimization framework reducing mobile web page load times by up to 72% on low-end phones, significantly bridging the digital divide in underserved regions
- Led a critical evaluation of carbon offset strategies in AI infrastructure, revealing systemic shortcomings in RECs, VPPAs, and carbon credits, and developed a first-of-its-kind Sustainability Calculator to quantify emissions and guide low-carbon AI system design
- Implemented a multi-agent Reinforcement Learning (RL) framework enabling autonomous vehicles to learn socially optimal routing strategies, achieving up to 30% lower average travel time and 50% fairer congestion distribution
- Developed a modular Viability Calculator to model and optimize cost-per-query, breakeven thresholds, and deployment strategies for AI services in emerging markets, highlighting critical economic and infrastructural constraints.

Software Engineer (Full Stack)

Jan 2020 - Aug 2020

Educative Inc.

Lahore, PAK

Educative is an ed-tech platform with over 2 million users that provides interactive and adaptive courses for software developers

- Migrated platform to Next.js to utilize server-side rendering (SSR) and client-side caching to improve SEO and reduce page load times up to 50%
- Created a Design System using Material-UI in TypeScript saving up to 50% of a developer's time to build UI components
- Increased test coverage by 50% using a testing infrastructure based on Jest, Unittest, and Selenium

Research Assistant

June 2019 - Dec 2019

Technology for People Initiative (TPI) - LUMS

Lahore, PAK

- Trained an ML model for OLX, a global online marketplace, to analyze consumer behavior and isolate patterns unique to serious buyers
- Worked with Mobilink Jazz, a leading mobile network operator in Pakistan, to model and understand urban mobility patterns in Pakistan using Call Detail Record (CDR) data

PUBLICATIONS

- [1] Perception, performance, and detectability of conversational artificial intelligence across 32 university courses. Scientific Reports 2023
- [2] Impact of Congestion Control on Mixed Reality Applications. ACM SIGCOMM EMS 2024
- [3] The GAIUS Experience: Powering a Hyperlocal Mobile Web for Communities in Emerging Regions. ACM ICTD 2024
- [4] SONIC: Connect the Unconnected via FM Radio & SMS. ACM CoNEXT '24
- [5] Towards a world wide web without digital inequality. Proceedings of the National Academy of Sciences (PNAS)
- [6] Rethinking homework in the age of artificial intelligence. IEEE Intelligent Systems
- [7] I tag, you tag, everybody tags! ACM Internet Measurement Conference (IMC) 2023
- [8] ALCC: Migrating Congestion Control To The Application Layer In Cellular Networks. Journal of Systems Research

HONORS & AWARDS

NYU Global PhD Fellowship	2020 – 2025
Dean's Honor List	Academic Years 2017–2018, 2018–2019
Graduated with Distinction	2019

TEACHING AND SERVICE

- **Member, Review Board** — ACM Journal on Computing and Sustainable Societies
- **Teaching Assistant**, NYU AD CS-UH 3012: Computer Networks Aug 2022 – Dec 2022
 - Led weekly recitations covering the course content and assignments
 - Designed and graded course assignments and quizzes
- **Teaching Assistant**, NYU AD CS-UH 1001: Introduction to Computer Science Aug 2022 – Dec 2022
 - Led tutorials and office hours to guide students through the course and the main project
 - Designed and graded course assignments
- **Teaching Assistant**, LUMS CS 382: Network-Centric Computing Jan 2019 – May 2019
 - Designed and graded course assignments, quizzes, and exams
 - Conducted office hours and tutorials to clarify complex concepts and support student learning
- **Teaching Assistant**, LUMS CS 100: Computational Problem Solving Aug 2018 – Dec 2018
 - Mentored students through their main course project
 - Led tutorials, office hours, and designed weekly lab assignments

TECHNOLOGIES

Languages	Python, C, C++, JavaScript, TypeScript, GoLang, HTML, CSS, Matlab, SQL, Haskell
Tools & Frameworks	Wireshark, Linux, Git, Bash, Selenium, NGINX, NetEm, Mahimahi, Pandas, Numpy, Matplotlib