MUHAMMAD HASEEB

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EDUCATION

Ph.D. Computer Science **Sept. 2021 – May 2026**
New York University (NYU), New York, USA
Research Focus: Distributed Systems, Networks, Cloud Computing, Microservices, Financial Technologies
GPA: 4.0/4.0

Bachelor of Science, Computer Science **Sept. 2016 – May 2020**
Lahore University of Management Sciences (LUMS), Lahore, Pakistan
Course work: Algorithms, Data Structures, Networks, Distributed Systems, Machine Learning, NLP, AI
GPA: 3.69/4.0

PROFESSIONAL EXPERIENCE

Networking Research Intern **June 2023 – August 2023**
Nokia Bell Labs, New Jersey, USA

- Led a project for developing a streaming service for AR/VR content
- Designed and implemented a resource-efficient transcoding system for volumetric videos
- Achieved ~75% CPU savings and ~80% storage savings with the new transcoding mechanism
- Developed an encoder/decoder for point cloud data that can tolerate packet losses in the network

Software Engineer (Full Time) **June 2020 – August 2021**
PosterMyWall, Lahore, Pakistan

- Designed and implemented an access control system for different tools of the company
- Setup CI/CD pipeline along with testing infrastructure using TeamCity and AWS
- Automated AWS-hosted development infrastructure, shortening the testing cycle time by more than 50%
- Secured the product website by eliminating critical vulnerabilities (XSS, CSRF, IDOR)
- A recommendation letter from my manager is available on my LinkedIn profile

RESEARCH PROJECTS

High-performance and scalable multicast for cloud-hosted financial exchanges [Link]

- Designed and implemented a low-latency, scalable, and fair multicast service
- Used kernel-bypass techniques (DPDK) for achieving ultra-low latency packet processing
- Achieved ~50% lower latency and better scalability than the AWS Transit Gateway based multicast

Fast, expressive, and cheap analytics for distributed traces using cloud storage [Link]

- Developed a data management system atop cloud storage for distributed tracing data
- Devised storage indices specialised for querying traces based on their graph structures
- Achieved 60% better query performance than Grafana Tempo

Patent: A Method To Enable Fast Transmission And Processing Of 3D Telepresence Data (Approved by Nokia's internal board, In submission to USPTO)

Award: Outstanding Student Research Award by Nokia Bell Labs, during Global Student Program '23
Skills: C/C++, Python, Go, Rust, Javascript, Kernel Bypass (DPDK, XDP), Systems Design
GitHub: https://github.com/HaseebLUMS