Haseeb Ashfaq

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WORK EXPERIENCE

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

- Developed a streaming service for AR/VR content for heterogeneous networks (C++, Unix)
- Implemented a resource-efficient transcoding mechanism for volumetric videos that achieved 75% CPU savings
- Developed an encoder/decoder for point cloud data that can tolerate packet losses in the network which enabled utilizing UDP instead of TCP for point cloud streaming
- Implemented a mixed-reliability transmission protocol using QUIC streams and datagrams (with Cloudflare's Quiche)

Systems Group NYU **June 2022 – June 2023**
Graduate Research Assistant New York, USA

- Developed a trace-aware access control for microservices; a step towards zero-trust microservices' security
- Designed and implemented a special priority queue, LOQ, for cloud hosted financial exchanges, that enhances a matching engine's throughput by up to 150% and lowers latency by 90%. LOQ brings HFT closer to migration to the cloud.

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

- Designed and implemented an access control system for internal 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) and did backend development
- A recommendation letter from my manager describing me as an exceptional engineer is available on LinkedIn

EDUCATION

PhD and MS, Computer Science **Sept. 2021 – May 2026**
New York University, New York, USA GPA: 4.0/4.0
Thesis Focus: Distributed Systems, Networks, Cloud Computing, Microservices, Financial Technologies

Bachelor of Science, Computer Science **Sept. 2016 – May 2020**
Lahore University of Management Sciences, Lahore, Pakistan GPA: 3.7/4.0
Courses: Algorithms, Data Structures, Distributed Systems, Computer Networks, Machine Learning

PROJECTS

High-performance and scalable market data multicast for cloud-hosted financial exchanges [Link]
- Designed and implemented a low-latency and scalable multicast service that outperformed AWS TGW-based multicast
- Developed overlay networking techniques to achieve minimum jitter to make the multicast latency predictable

Fast, expressive, and cheap analytics for distributed traces using cloud storage [Link]
- Developed a data management system atop cloud storage for distributed tracing data
- Realized a low cost storage backend to avoid the need to sample tracing data for storage which improves debugging

PUBLICATIONS

- *Design And Implementation of A Scalable Financial Exchange in the Cloud*, Sigcomm Poster
- *QuEST: Fast, Expressive, and Cheap Analytics for Distributed Traces Using Cloud Storage*, CloudDB, VLDB workshop
- *To Block or Not to Block: Accelerating Mobile Web Pages On-The-Fly Through JavaScript Classification,* ICTD

SKILLS

C/C++, Python, PHP, Go, Javascript, React/React Native, Rust, Amazon Web Services, DPDK, eBPF, Linux, Kubernetes, Docker

Graduation: May 2026. **Available For Internship:** May 2025 to September 2025