HASEEB ASHFAQ
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EXPERIENCE

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

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

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

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

Software Engineer (Full Time) **June 2020 – August 2021**
PosterMyWall (250 Mils LLC), Lahore, Pakistan and California, USA

- 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)
- A recommendation letter from my manager is available on my LinkedIn profile

EDUCATION

PhD and MS in Computer Science **Sept. 2021 – May 2026**
New York University (NYU), New York, USA
Focus: Distributed Systems, Networks, Cloud Computing, Microservices, Financial Technologies
My PhD involves significant C++ coding and infrastructure design.
GPA: 4.0/4.0

Bachelor of Science, Computer Science **Sept. 2016 – May 2020**
Lahore University of Management Sciences (LUMS), Lahore, Pakistan
GPA: 3.7/4.0

PROJECTS

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

- Designed and implemented a low-latency, scalable, and fair multicast service for market data
- 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

Patent: Method To Enable Fast Transmission And Processing Of 3D Telepresence Data, filed as 1st inventor
Award: Outstanding Student Research Award by Nokia Bell Labs, during Global Student Program '23
Skills: Systems Design, Infrastructure, Kernel Bypass (DPDK, XDP), eBPF, AWS, GCP, Routing Protocols, Istio
Programming Languages: C/C++, Python, PHP, Go, Javascript, Rust, Haskell
GitHub: https://github.com/HaseebLUMS