MUZAMMIL ABDUL REHMAN

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Los Angeles, CA

WORK EXPERIENCE

Edgio Los Angeles, CA June 2022 – Present
Lead Software Development Engineer Traffic Engineering Team

- Researched and rearchitected a real-time network traffic analytics system to **decrease the query response time by 40x-100x**, **increased the write performance by 30x** and **decreased the storage footprint by 11x** using similar physical servers.
- **Collaborated** with a skilled team to engineer a scalable, multi-tenant web service using OpenAPI specifications in Golang.
- Deployed a highly-available, replicated **PostgreSQL** cluster using Kubernetes, Helm and CI pipelines.

Software Development Engineer Traffic Engineering Team

- Designed and implemented a layer-3/layer-4 **volumetric DDoS detection and mitigation** pipeline with a sub-minute response time, capable of analyzing floods of **over 500 million packets/sec**.
- Built and maintained a data warehouse for **DNS Analytics** capable of examining **over a trillion** records.
- Implemented a lock-free, horizontally and vertically scalable, datastream ingestor capable of transforming and ingesting **300,000 - 500,000 messages per second per server** in Golang.

Verizon Digital Media/Yahoo EdgeCast Los Angeles, CA August 2018 – June 2022
Software Development Engineer Traffic Engineering Team

- Architected, automated, and monitored the deployments of **ClickHouse** and **Elasticsearch** clusters on bare-metal servers.
- Enhanced monitoring metrics and alerting tools for the CDN load-balancers and related subsystems cutting the triage time **by up to 70%**.
- Extended an internet measurements and health-checking system to implement IP blocklisting, in C++.

Northeastern University Boston, MA September 2015 – August 2018
Graduate Research Assistant Networked Systems Research Group

- Developed an Internet router geolocation system which **outperforms state-of-the-art** methods by up to 15%.
- Leveraged **machine learning** classifiers with real-time measurements and Internet Registry records to predict locations of network routers with 96.5% accuracy.
- Mentored undergraduates in principles of software development, web development and research.

EDUCATION

Northeastern University – Boston, MA September 2015 – August 2017
M.S. Computer Science CGPA: 3.63

Lahore University of Management Sciences (LUMS) – Pakistan August 2011 – June 2015
B.S Computer Science CGPA: 3.72

PERSONAL PROJECTS

- 2023 - Designed a **bi-directional gRPC stream** in Golang and Docker with metrics collection using Prometheus.
- 2023 - Engineered a resilient **Kafka consumer group** in Golang with asynchronous producers.
- 2017 - Implemented a **TCP/IP Stack** using raw sockets with flow control and congestion control, in Python.

PROGRAMMING AND DEVELOPMENT SKILLS

Languages: Go, Python, C, SQL, C++.
Others: Linux, ClickHouse, Elasticsearch, Kafka, gRPC, Docker, Kubernetes, Prometheus, PostgreSQL, CockroachDB, Redis, Networking Protocols, Internet Measurements, Distributed Systems, Big Data Analytics, Network Load Balancing, High Availability, DDoS Protection, DNS.