Resume - Murali Krishna

+91 9483506691 | findmuralirao@gmail.com | https://murali.fyi | linkedin.com/in/murali-krishna-rao | github.com/LaRuim

Education

Georgia Institute of Technology — Atlanta, GA
Master of Science in Computer Science — *Jan 2026 –*

PES University — Bengaluru, KA
Bachelor of Technology in Computer Science and Engineering — *Aug 2019 – June 2023*

Technical Skills

Programming Languages: **C++, C, Golang, Python**, Perl, Rust, SQL, NoSQL, Lua

Frameworks: OpenSSL, Docker, nginx, Grafana, eBPF, k8s, Tensorflow, Gin, Flask

Industry Experience

Akamai Technologies — Bengaluru, KA

Software Engineer 2 (C++, C, Perl) — *Dec. 2024 – Jun. 2025*

- Optimized Akamai's HTTP/3 parallel stream performance by restructuring thread initialization, eliminating stream startup delays of up to **20ms**.
- Diagnosed bottlenecks in HTTP/3 transfer times, isolating congestion window (CWND) update latency as the root cause of performance degradation.

Software Engineer (C++, C, Perl) — *Aug. 2023 – Dec. 2024*

- Fixed the application-layer idle timeout mechanism in the **QUIC** stack, reducing memory-related crashes by over **50%** network-wide by mitigating resource exhaustion from perpetual PING frames.
- Designed and led the enablement of **TLS 1.3 0-RTT Data** over TCP (HTTP/1/2) and IETF QUIC on the Akamai Edge, effectively **zero-ing** handshake latency for resumed connections.
- Developed comprehensive **Grafana** dashboards to monitor timeout anomalies across different network geographies.
- Reduced QUIC handshake timeouts by **10%** by optimizing the scheduling algorithm and timeslicing of handshaker threads.

Software Engineering Intern (C++, Rust) — *Jan. 2023 - June 2023, June 2022 - July 2022*

- Engineered an end-to-end **HTTP/3** testing pipeline using a custom-patched **Nginx** and Cloudflare's **quiche** library to benchmark the performance and security implications of **0-RTT Data**.
- Refactored XML parsing logic for **DASH** content delivery to eliminate processing stalls, achieving a **3-4x speedup** in parsing throughput in a proof-of-concept.

Hobby Projects

HTTP/2 Framer (HTTP/2, OpenSSL): Python tool to craft HTTP/2 frames. The frames can be piped into OpenSSL s_client to make HTTP/2 requests over TLS.

0-RTT Data Toy Client (OpenSSL, Rust): A toy client written in Rust capable of sending 0-RTT Data.

Simulation of Raft in Golang (Golang, Distributed Systems, Consensus Algorithms): Built a multi-node raft cluster and simulated leader-election and log-replication.

WhatsApp Automator (Python, Selenium, DOM Parsing): A tool to use WhatsApp web to send customised messages to large amounts of people without using the public WhatsApp API.

[**Mentor**] **Adding TLS 1.3 0-RTT Data to cURL (C, OpenSSL)**: **Mentored** a team of 4. The project spawned a draft pull-request. Although closed, the feature was *added* to cURL based upon the work done in this PR.

Academic Experience

Teaching Assistant — PES University

UE20CS351: Cloud Computing — *Jan. 2023 – June 2023*

- Designed and assessed 5 of the 10 weekly assignments, based on the topics *serverless compute, docker, kubernetes, consensus algorithms, and zookeeper.*
- Designed and evaluated 1 of the 3 problem statements for the course project, which was to finish an incomplete codebase made to simulate a multi-node *Raft cluster with WAL.*
- Conducted office-hours to help students solve their queries.

Center for Pattern Recognition — PES University

Capstone Project — *Feb. 2022 – Jan. 2023*

- Built a TabNet-based architecture to pretrain on high-dimensional genomic data, using feature masking and sequential attention for better feature representation and accurate downstream predictions.
- Used the model's attention mechanisms to derive feature importance, using it to interpret relevant biological pathways. Achieved SOTA results with an **AUROC** score of **0.88**.
- Published in journal **BMC Bioinformatics** [Link] and poster presented at **NeurIPS 2022 SSL Workshop.**