

Sameer Ahmed

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SUMMARY

Systems-focused Computer Science undergraduate with specialized expertise in **C++**, **Go (Golang)**, and **Distributed Systems**. Proven track record of engineering automated security tools and high-performance backend microservices. Passionate about low-level optimization, concurrency, and building scalable infrastructure.

EDUCATION

National University of Sciences and Technology (NUST) Islamabad, Pakistan
Bachelor of Science in Computer Science *Expected 2027*

- Ranked **#1 University in Pakistan** for Computer Science & Information Systems (QS World Rankings).
- **Focus:** High-Performance Computing (HPC) & Systems Architecture
- **Coursework:** Parallel and Distributed Systems, Compiler Construction, Operating Systems

TECHNICAL SKILLS

Languages: C++ (STL, Smart Pointers), Go, Python, SQL, Bash

Systems & Internals: Linux Syscalls, Multithreading (pthreads), Socket Programming, Memory Management, eBPF

Backend Infrastructure: gRPC, Protocol Buffers, Docker, PostgreSQL (WAL, Indexing), Redis, Kafka

Tools & Observability: Makefiles, CMake, GDB, Prometheus, Grafana, Git, CI/CD (GitHub Actions)

PROJECTS

Distributed Key-Value Store | *Go, Raft Consensus, RPC*

- Engineered a fault-tolerant distributed system **from scratch** in Go implementing **Raft Leader Election** and Log Replication.
- Implemented a disk-based **Write-Ahead Log (WAL)** to ensure data persistence and state recovery across node crashes.
- Designed a custom RPC transport layer to handle network partitions and automated failover in a 3-node cluster.

High-Throughput Log Ingestion Service | *Go, gRPC, PostgreSQL*

- Designed and implemented a high-performance ingestion pipeline handling **10k+ writes/sec** (benchmarked locally) using buffered channels and worker pools.
- Implemented Graceful Shutdown patterns to ensure zero data loss during deployment rolling updates.
- Built an observability stack with **Prometheus & Grafana** to monitor Goroutine saturation and Postgres batch latency.

Custom Load Balancer | *C++, Epoll, Networking*

- Developed a non-blocking Layer 7 load balancer in C++ using **epoll** for high-concurrency event handling.
- Implemented Active Health Checking to automatically detect and cordon unhealthy backend instances.
- Integrated a weighted Round-Robin scheduling algorithm to optimize traffic distribution based on server capacity.

EXPERIENCE

Software Engineering Intern (Security Automation)

June 2025 – Sept 2025

AgriStreams

Islamabad, Pakistan

- Built and deployed a Python-based automated vulnerability suite within a cross-functional team of 5, integrating Nmap and Metasploit to perform bulk penetration testing.
- Developed custom Python wrappers to programmatically execute scanning modules and exploit scripts, reducing manual auditing time by **70%**.
- Built a reporting pipeline that parsed raw tool output into structured logs, enabling developers to quickly prioritize and patch identified security gaps.
- Collaborated with backend engineers to patch critical **OWASP Top 10** vulnerabilities, enforcing secure coding standards across the codebase.