Lay Sheth

Software Engineer
+91 7000035904 | laysheth1@gmail.com | linkedin.com/in/laysheth | github.com/cloaky233 | leetcode.com/laysheth

Education

Vellore Institute of Technology — Bhopal, Madhya Pradesh
Bachelor of Technology in Computer Science; GPA: 8.89/10.00 — *Sept. 2022 – May 2026*

Experience

Machine Learning Intern — Sept. 2024 – Dec. 2024
PreProd Corp — *Bengaluru, India (Remote)*

- Decreased event processing latency from 250ms to 150ms by refactoring the Kafka consumer service to use **async batching** and connection pooling, resolving throughput bottlenecks in the real-time data pipeline.
- Improved retrieval accuracy from 62% to 87% by replacing the embedding model for knowledge base after thorough benchmarking

Open Source Contributor — Mar. 2025 – Present
Zed Industries & Rust Foundation

- Eliminated a critical **application crash** affecting the LSP store by backtracing invalid journal paths and implementing defensive error propagation across 3 Rust modules, **restoring stability for users. [#42117]**.
- Accelerated environment debugging for **10K+ active users** by implementing a verbose toolchain inspection feature in **rustup**, directly resolving a long-standing community feature request for better path visibility **[#4270]**.

Projects

EmbraceDB: B+Tree KV Database | *C++23, WAL, Snapshots* | GitHub — Nov. 2025

- Designed high-performance B+Tree storage engine in C++23 achieving 421,000 point lookups per second to demonstrate production-grade database implementation patterns for learning distributed systems.
- Implemented crash-safe durability via write-ahead logging with CRC32 checksums enabling sub-second recovery, ensuring zero data loss during unexpected shutdowns.
- Optimized mixed workload throughput to 215,000 ops/sec by batching WAL writes in 4KB blocks and implementing in-place updates for read-heavy operations.

Agentless Backend API for monitoring | *Rust, Tokio, SSH, Docker, LTO* | GitHub — Oct. 2025 – Present

- Achieved <6MB runtime footprint by designing agentless Rust monitoring system, eliminating deployment overhead vs Grafana/Prometheus
- Reduced SSH timeout failures from 15% to <2% at 100 concurrent connections by implementing layered timeout orchestration for async execution
- Decreased Docker image size from 500MB to 30MB through multi-stage builds and link-time optimization, reducing deployment time by 80%.

Technical Skills

Languages: C/C++, Rust, Python, SQL, Bash
Systems & Concurrency: Multi-threading, Async I/O, Memory Management, Inter-process Communication, Socket Programming
Software Architecture: Microservices, REST APIs, Event-driven Architecture, Caching Strategies, Load Balancing
Tools & Technologies: PostgreSQL, Redis, Kafka, Docker, Kubernetes, Git, Linux, AWS (EC2, S3)
Core Expertise: System Design, Distributed Systems, Performance Optimization, Debugging & Profiling

Achievements

LeetCode Weekly Contest 478 : Global Rank 244/25,246 (Top 1%), solved all 4 problems
SurrealDB Technical Ambassador: Recognized as official ambassador; authored "LLM-as-a-Judge" RAG implementation featured in official engineering blog as reference architecture.
National Finalist, Smart India Hackathon: Led 6-person team to prototype low-cost myoelectric prosthetic hand with EMG gesture recognition, achieving 85% cost reduction vs commercial systems.