Luxmikant

Software Engineer Intern

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Professional Summary

Backend-focused software engineer with proven expertise building high-performance systems. Codeforces Specialist (1496) with 600+ algorithmic problems solved; proficient in C++ and Python with demonstrated ability to optimize critical paths, debug rigorously, and deliver production-grade features.

Education

Vellore Institute of Technology **CGPA: 8.35 — 2022 – 2026**

Bachelor of Technology in. Computer Science Engineering

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Database Management Systems, System Design.

Technical Skills

- **Languages:** C++ (STL, memory management, modern C++17/20), Python (FastAPI, pytest, NumPy, data processing)
- **Data Structures & Algorithms:** sorting, binary search, hashing, dynamic programming, graphs (BFS/DFS, MST), segment trees, complexity analysis
- **Backend & Systems:** REST APIs, gRPC, database optimization (PostgreSQL, MongoDB), connection pooling, Redis caching, error handling, debugging under high load
- **Cloud & DevOps:** Azure (App Service, monitoring, alerts), Docker, GitHub Actions (CI/CD), Linux system administration, shell scripting, profiling & benchmarking
- **Testing & Quality:** pytest, GoogleTest, unit testing, integration testing, test coverage analysis, GDB debugging

Experience

Open Source Contribution: Flamenco Web Configuration Manager **Jan 2025 – May 2025**

Contributor — Go, Vue.js

- Contributed to a distributed task orchestration system; enhanced REST APIs and integrated with a Go backend.
- Implemented MQTT communication layer for inter-node messaging; achieved 99.9% uptime.
- Optimized task distribution using Go's concurrent patterns; reduced latency by 150ms.
- Created cross-platform abstraction layer for Windows/Linux/macOS deployment; reduced environment-specific bugs.

Projects

CRM Platform **May 2024 – Present**

Full-Stack — Node.js, React, MongoDB

- Built a full-stack CRM application with intelligent customer segmentation, campaign workflows, and AI-powered content generation (OpenAI integration).
- Engineered a **drag-and-drop segment builder** handling 15+ attributes; **reduced segment creation time by 70%** with smooth UX.
- Designed and implemented REST API layer with proper error handling, input validation, rate limiting, and security (OAuth2, JWT sessions).
- Optimized database queries with indexing, pagination, and Redis caching; delivered sub-100ms response times across 10K+ customer datasets.

Tradl AI — Real-Time Financial Intelligence Pipeline **Jun 2025 – Present**

Backend Engineer — Python, FastAPI, PostgreSQL, Azure, gRPC

- Architected and deployed a high-throughput production pipeline processing **500+ financial articles daily** with **95%+ deduplication accuracy** using embeddings and similarity scoring.
- Designed scalable Python microservices using **FastAPI** with comprehensive error handling, exponential backoff retries, and circuit breaker patterns; exposed via **gRPC** for inter-service communication.
- **Deployed to Azure App Service** with Docker containerization; configured Azure monitoring, structured logging, and automated health alerts for production reliability and observability.
- Built robust testing suite: **134+ pytest test cases** covering dedup logic, NER, sentiment analysis, and query layers; achieved **sub-300ms end-to-end latency**

Achievements

- **Codeforces Specialist (Rating: 1496)** with consistent contest performance.
- **Top 10 Finalist** at HackByte 3.0 Hackathon (IIIT Jabalpur) competing against 100+ teams; shipped fully deployed healthcare application addressing real-world patient management challenges.
- **Published Author** in **Springer Nature**: co-authored peer-reviewed research paper *"Detection of Alzheimer's Disease Using Convolutional Neural Networks (CNNs)"* in the ISEM book series; achieved 92% accuracy on early-stage biomarker detection.

Certifications & Training

- **GitHub Foundation Certification** — GitHub (version control, collaboration, CI/CD fundamentals, best practices)
- Data Structures and OOP with C++: CS104, CS105 Masterclass (algorithm design, complexity analysis, modern C++17)
- Applied Machine Learning in Python — University of Michigan (ML pipeline architecture, model deployment, data preprocessing)