Prakash Dass R

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Professional Summary

Final-year B.Tech student with practical exposure to **concurrent backend systems** using C++ and Go. Interested in low-level systems, API development, and cloud backend services. Strong problem-solving background with a focus on clean, maintainable code. Looking for an SDE role where backend fundamentals and system thinking are valued.

Technical Skills

- **Languages:** C++ (STL, smart pointers), Go (goroutines, channels), JavaScript
- **Systems:** Concurrent programming, Linux/OS internals, Socket programming, POSIX APIs
- **Backend:** REST APIs, MySQL (indexing, query optimization), Express.js, Redis (caching, pub/sub)
- **Tools:** Git, Docker, Nginx, Postman (API testing), Linux CLI

Projects

C++ Application Framework   *C++, POSIX, Systems Design*   github.com/rprakashdass/cpp-web-server

- Designed and developed a lightweight, POSIX-compliant C++ framework for building high-performance web servers.
- Implemented a fully concurrent HTTP/1.1 server using socket programming, thread pool, and non-blocking I/O.
- Added dynamic routing (REST + RPC's style), static file serving, and CLI configuration (port, threads, static directory).
- Project inspired by Express.js, but built in low-level C++ for performance, control, and portability across Unix-based systems.

Distributed Key-Value Store (Go) *Systems Programming, Distributed Algorithms* *In progress — planned Q3 2024*

- Prototyping a **thread-safe** in-memory cache in Go with `sync.Map`, planning to add Redis-like commands (`SET/GET/DEL`) and benchmarks.
- Implementing core features: **TTL expiry**, **pipelined requests**, and **atomic CAS operations** with Go's concurrency primitives.

Group Links   *React, Express.js, System Design*   gl.rprakashdass.in — github.com/rprakashdass/group-links

- Designed and deployed a full-stack web app to organize and share categorized group links (e.g., WhatsApp/Telegram).
- Implemented RESTful APIs with Express.js and JWT-based authentication for protected routes.
- Used MongoDB for storing user data and group metadata; frontend built using React with basic component structure.

Experience

Backend Developer (Freelance)   *Remote*   2023 – Present

- Developed and maintained backend systems for small business clients, focusing on **API design**, database efficiency, and deployment.
- Integrated **Razorpay** for secure payments with proper validation, encryption, and failure handling.
- Improved API performance through **query optimization**, **code refactoring**, and database indexing.
- Used **Docker** for deployment and set up **CI/CD pipelines** for testing and versioned releases.

Education

B.Tech in Artificial Intelligence and Machine Learning *Sri Shakthi Institute of Engineering and Technology 2022 – 2026*

- CGPA: 7.93 / 10
- Coursework: Data Structures, Operating System, Database Management System, Computer Networks, Machine Learning, Software Engineering

Achievements

- Solving 600+ problems with focus on graph algorithms and dynamic programming in Leetcode & GeegksForGeeks
- Finalist in National Hackathon 2025 (AI track) among 500+ teams for developing an ML-based statement
- As Rotaract Club Office Bearer, led an 8-member team to organize 20+ projects, reaching 200+ students
- Mentored 60+ students in C++, data structures, and core CS concepts as Teaching Assistant at Sri Shakthi Institute
- Selected twice for Smart India Hackathon (2023-24) for AI&ML and gov-tech prototypes