MUKUL RAJ
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🎯 Objective

Curious and hands-on Computer Science student with a strong foundation in real-time systems, backend architecture, and system-level thinking. Passionate about building performant, scalable, and intelligent systems — from FP-based backend logic to intelligent infrastructure. Seeking to contribute to mission-critical frameworks and next-gen SDKs in a high-performance, low-latency payments environment.

🛠 Technical Skills

- **Languages:** Python, C++, JavaScript, Bash
- **Backend & Functional Thinking:** Flask, Django (basic), REST APIs, WebSockets, OOP, FP concepts
- **Data Systems:** PostgreSQL, Redis, MongoDB, Real-time caching
- **DevOps & Infra:** Docker, GitHub Actions, CI/CD, Linux, ZMQ (beginner), WebSocket infra
- **Frontend (Basic):** HTML, CSS, React (learning), Next.js (exploring)
- **Other:** Agile, Debugging, VS Code, System Design Basics

🎓 Education

B.Sc. (Hons.) in Computer Science
BITS Pilani – Expected 2025

🚀 Key Projects

1. Real-Time Payment Flow Simulator (Flask + WebSockets + Redis)
Designed an end-to-end simulated payment handling pipeline.

- Used Redis to track session state and WebSocket for event-based UI triggers.
- Built backend logic for UPI-like payment retries, failure cases, and multi-step verification.

2. Crypto Trading Dashboard (Real-Time Order Book)

- Streamed live data from Binance using WebSocket APIs.
- Implemented Redis caching, PostgreSQL persistence, and latency logging.
- Demonstrated handling of high-throughput, concurrent updates to UI.

3. AI Resume Evaluator (Flask + React + OpenAI)

- Integrated React markups with a Flask backend using RESTful architecture.

- Set up Dockerized microservice with GitHub Actions CI/CD pipeline.
- Enabled dynamic visual scoring for resumes — akin to payment anomaly analysis UIs.

4. Terminal Chat App in C++ (Low-Latency Messaging)

- Multithreaded socket programming with focus on minimal packet loss.
- Applied concurrency and memory-safe design — building block for distributed infra logic.

💼 Experience

Software Engineering Intern – Disney Tech Solutions
Remote | Jan 2025 – Mar 2025

- Developed robust backend services in Python, with attention to performance bottlenecks.
- Supported API integrations and monitored service health across releases.

Freelance Developer
2024 – Present

- Built and deployed WebSocket-based data streamers for financial dashboards.
- Designed client-facing analytics with integrated external APIs and visual feedback.

📊 Certifications & Courses

- **Functional Programming Principles** – Coursera (recommended to add if done)
- Docker & Containers – KodeKloud
- PostgreSQL Essentials – Udemy
- Real-Time Systems – Coursera (in progress)
- Data Structures & Algorithms – InterviewBit/LeetCode Practice

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□ Relevant Strengths Aligned to Role

- 🌐 **Real-Time Infra**: WebSocket, Redis, multi-user message flows
- 🔧 **Low-Latency Logic**: Socket design, concurrent C++, and retry-safe API design
- 📈 **Data-Driven Thinking**: Transaction pattern recognition & anomaly response logic
- ⚙️ **Framework-Oriented Development**: Reusable architecture for scoreboards, trackers
- □ **First-Principles Mindset**: Modular build-ups, clean API contracts, design clarity