KAUSTHUBH J. RAO

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OBJECTIVE

Seeking a backend-focused Software Development Engineer role to build scalable distributed services, high-performance APIs, and reliable data pipelines.

EDUCATION

B.E. in Artificial Intelligence and Machine Learning, NMAMIT, Nitte   2021 – 2025
Relevant Coursework: Data Structures, Algorithms, OS, Machine Learning, DBMS, Cloud
CGPA: 9.41 / 10

SKILLS

Languages	Python, Go, JavaScript
Backend	Node.js, Express, PostgreSQL, Redis, REST APIs, GCP, Microservices
DevOps	Docker, CI/CD, GitHub Actions, Distributed Logging
Frontend	SvelteKit, React.js, Next.js, Tailwind CSS
Tools	Git, GitHub, Linux, Bash
Software Methodologies	Agile, OOP, Design Patterns, System Design
Soft Skills	Problem-Solving, Leadership, Communication

WORK EXPERIENCE

Product Engineer, Edgeverve Systems, Bangalore   Feb 2025 – Current

- Implemented multithreaded execution for core services, increasing system throughput by **150%+** across production workloads.
- Designed and integrated backend APIs that powers automated UI generation pipelines used by over **100 corporate clients**, eliminating manual component development.
- Contributed to a product-wide migration to a **microservice architecture**, improving scalability, deployment independence, and fault isolation.
- Reworked background job execution by introducing stateful **lifecycle tracking, graceful failure handling,** and **outbox-driven retries**, significantly improving reliability of async workloads.
- Co-authored AI4UI, a multi-agent framework for frontend generation, published on arXiv; It achieved competitive benchmark performance vs industry baselines on compatibility, compilation success, security, feature implementation, and code quality. [More Info](#)

OPEN SOURCE & EXTRACURRICULAR

- **Black Formatter, 2025** Contributed a fix to Black, the Python code formatter, resolving formatting issues with Python 3.12's new generics syntax. [More Info](#)
- **Gitea, 2025** Fixed a critical security issue in Gitea where tag events could bypass branch filter targets in webhooks, ensuring proper event filtering and preventing unintended webhook triggers. [More Info](#)
- **Rakuten Conference, 2024** Invited by **Rakuten** to present **X-Cortex**, a revolutionary digital automation and processing system, to an audience of 1,000+ attendees. [Link](#)

PROJECTS

Fin Agent Built an AI-powered financial assistant with a responsive frontend using **Next.js**, integrating ADK-based tool calling, agent orchestration and custom MCP Client as part of the **Google Hackathon**. [More Info](#)

Cuda LSP Built a custom Language Server Protocol for Cuda with features like incremental diffing, hover and auto-completes. [More Info](#)