

# SAMBA SIVA RAO CHATTU

Full Stack Engineer

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## PROFESSIONAL SUMMARY

Full Stack Engineer with 2+ years of experience shipping production-grade web applications and AI-powered solutions. Experienced in Generative AI, LLM integration, and RAG-based systems using LangChain and Vector Databases. Product-first thinker with a strong track record of delivering revenue-generating features, and migrating systems to modern distributed architectures at scale.

## TECHNICAL SKILLS

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|----------------|--|
| Languages      | JavaScript, Python, Go lang  |
| Frontend       | React.js (Hooks, Context API, React Router), Redux   |
| Backend        | Node.js (Express), Python (Fast API), Go Fiber   |
| Databases      | MongoDB, PostgreSQL, Redis,  |
| DevOps & Tools | Docker, Docker-Compose, CI/CD, Git   |
| Cloud & Infra  | AWS (EC2, S3, Lambda), Linux, Shell Scripting, Microservices   |
| AI & GenAI     | LangChain, RAG (Retrieval-Augmented Generation), Vector Databases (Pinecone, ChromaDB), Generative AI, LLM Integration |

## PROFESSIONAL EXPERIENCE

### Full Stack Software Developer | Tridiagonal Software – MixIT CFD Platform, Pune Jan 2024 – Present

- Built full-stack features with React.js (Hooks, Context, Router) frontend and Node.js/Express backend with MongoDB; implemented role-based access control, real-time job monitoring dashboards, and comprehensive activity tracking.
- Implemented Redux-based state management patterns across the React application for complex async UI flows including job queuing, status polling, and result rendering.
- Engineered and migrated CFD simulation execution from a monolithic server to distributed on-demand AWS infrastructure, reducing job queue times by 60% and enabling concurrent parallel simulations.
- Built end-to-end revenue-generating LBM simulation module using React, Python and Node.js, contributing directly to product expansion and new customer acquisition.
- Executed zero-downtime database migration for 500+ legacy users, maintaining data integrity across MongoDB collections.
- Built an AI-powered simulation chatbot using RAG (Retrieval-Augmented Generation) and LangChain, enabling users to query and interact with CFD simulation results in natural language; integrated Vector Database (ChromaDB) for semantic search over simulation data and reports.

### Backend Developer | Engro Technologies Pvt. Ltd., Hyderabad

Mar 2023 – Sep 2023

- Developed and maintained REST APIs across 4+ microservices using Python (Fast API), and Go
- Created analytics dashboard APIs surfacing insights from large MongoDB datasets; collaborated with AI/Data Science team to expose actionable metrics.
- Managed multi-container Docker deployments on AWS EC2.

## PROJECTS

### CFD Simulation Chatbot (RAG-Powered)

- Built a Generative AI chatbot using LangChain and RAG architecture, allowing engineers to query CFD simulation results in natural language; used ChromaDB as the Vector Database for semantic indexing of simulation reports and output data.
- Tech Stack: Python, LangChain, ChromaDB, FastAPI, React.js, OpenAI API

## EDUCATION

### Bachelor of Technology (B.Tech.)

2017 – 2021

Rajiv Gandhi University of Knowledge Technologies (APIIIT), Nuzvid