Sathyanarayanan Rengasamy Suresh

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SKILLS

Languages and Frameworks Python, SQL(MySQL, Postgres, HANA), NoSQL(Mongo), JavaScript,TypeScript, ReactJS, Java
Others (Tableau, PostgreSQL, MongoDB, Git, GitHub, Docker, Jenkins, Agile, AWS Cloud, Linux Systems, FastAPI, Kubernetes, Apache, Redis, SAP BTP)
Machine Learning (PyTorch, TensorFlow, LangChain, RAG Manipulation, Vector Embeddings, RAG, LLM finetuning)

PROFESSIONAL EXPERIENCE

Software Developer   June 2025
SAP Labs America   Palo Alto, CA
- Engineered the **Data Agent system** integrating multi-agent architectures within **SAP Databricks**, building an API Gateway and automating worker-agent creation — enabling schema-driven agent generation for table-level operations.
- Reduced agent testing time by **75%** through innovative **parallel processing** and full test automation, performing unit and large-scale resilience testing with data-efficient validation techniques.
- Developed secure **A2A protocol** for integrating **SAP Joule with GIA HR Agent**, implementing **XSUAA and CIS-based authentication** to achieve cross-agent handshake and communication under SAP's high-security standards.

Software Development Engineer   May 2024 – Oct. 2024
Ai Planet (Formerly DPhi)   Blacksburg, VA
- Architected **RAG pipeline** for finetuned-LLM, optimized using techniques such as Parameter-Efficient Fine-Tuning (PEFT), Low-Rank Adaptation (LORA), Vector Store Optimization, bringing down computation time from 35s to 15s
- Designed and deployed an **Nginx-based API Proxy** for LLM inferencing, handling 6,000+ requests per model with enhanced load balancing and caching.
- Orchestrated LLM deployment on AWS EKS with a complete CI/CD pipeline using Kubernetes, Docker, and Jenkins to streamline automated container management and continuous integration, followed Agile methodologies for SDLC

Programmer Analyst   May 2022 – Aug. 2023
Genpact - bEarly Technovations   Chennai, India
- Engineered a simple **integrated search pipeline**,using a combination of ORM and AWS OpenSearch for easy use to clients, delivering a comprehensive search result on DB, thus saving **time by up to 50%**
- Spearheaded **data cleaning and EDA** on client survey data, implementing a tracking system that reduced processing time by 30% ; developed Python **unit tests** to ensure smooth deployment to production

PROJECTS

Portfolio Assistant Chat Bot | *Python, Langchain, AWS , FastAPI*
- Serverless AI-powered chatbot fine-tuned to profile, enhancing recruiter engagement and understanding
- Deployed on **AWS Lambda**, reducing infrastructure costs **by 99%** by eliminating the need for an EC2 instance
- Leveraged Meta **LLaMA 3 on Groq**, achieving **a 90% reduction** in computation intensity, with requests efficiently routed via a static Netlify frontend for optimal performance

Maps Application | *Leaflet-React, PyPI, Python, Django, Nginx, Docker, AWS , Postgres*
- Full-stack ride-share application leveraging React-Leaflet, a custom A* routing engine, and Django with Role based access control (RBAC) for drivers, riders, and admins
- Published the custom A* routing engine as a PyPI package (`pip install aStarEngine-package`), offering multi-stop route optimization, thereby reducing reliance on external packages, saving memory by 15%
- **Dockerized** the entire stack, enabling streamlined local testing and **50% cost cutdown** on **AWS EC2** hosting.
- Configured AWS RDS for a robust, scalable and centralized Postgres database layer,**decreasing latency by 25%**

Stock Portfolio Management System | *Django, JWT , AWS , Docker, Kubernetes, Git, React, Apache, Nginx, Redis, Celery*
- Implemented OAuth2 using JWT for Google authentication, and HTTPS, improving security and Cross-site foregery
- Designed a distributed task scheduling system using **Celery and Redis**, reducing **server load by 40%** and enabling real-time price tracking with user notifications via SMTP, thus improving user engagement
- **Dockerized** and orchestrated containers using **Kubernetes** to include seamless integration to host on AWS EC2

EDUCATION

Virginia Tech   Blacksburg, VA
MS in Computer Engineering   Aug. 2023 – May 2025
- Courses Summary - Adv Machine Learning, Applications of ML, DBMS, Big Data Engineering, Large Scale Software Design
- Graduate Teaching Assistant - Advanced Computer Vision, Deep Learning, Computer Vision

SASTRA University   Thanjavur, India
Bachelor of Technology in Electronics & Communication   July 2019 – May 2023