Sathyanarayanan Rengasamy Suresh

+1 (540)-245-3047 sathya05@vt.edu Los Altos Hills, CA
Linkedin Github

Skills

Languages and Frameworks Python, SQL, NoSQL(Mongo), JavaScript,TypeScript, ReactJS, Java
Others (Tableau, MySQL, PostgreSQL, MongoDB, Git, GitHub, Docker, Jenkins, Agile, AWS Cloud, Linux based Systems, FastAPI, Kubernetes, Apache, Redis)
Machine Learning (Pytorch,FastAi, TensorFlow, Keras, LangChain, RAG Manipulation, Vector Embeddings, Neural Networks , Transformers Scikit-learn, Statsmodels, Deep Learning Algorithms, LSTM, RAG, LLM finetuning)

Professional Experience

Software Development Engineer, Ai Planet (Formerly DPhi) May 2024 - Sept 2024 | Blacksburg,VA

- Architected **RAG pipeline** for finetuned LLM, optimized using techniques such as Parameter efficient finetuning (PEFT), Low Rank Adaptation (LORA), Vector store optimization, bringing down computation time from 35s to 15s.
- Developed **API Proxy using Nginx** for LLM inferencing, capable of handling 6,000+ requests per model.
- Orchestrated LLM deployment on AWS EKS with a complete CICD pipeline using Kubernetes, Docker, and Jenkins to streamline automated container management and continuous integration, followed Agile methods for SDLC

Programmer Analyst, Genpact - bEarly Technovations May 2022 - Aug 2023 | India

- Developed 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 upto 50%.
- Engaged in cleaning process and EDA of survey data from client's DB, including implementing a robust tracking system to analyze time spent by user on survey. Performed python-unittesting to ensure smooth integration.
- Leveraged **AWS cloud** technologies to work on client data, processing it efficiently while also scaling it for future uses.

Undergraduate Research Assistant, SASTRA University Jan 2022 - May 2022 | India

- Engineered and led a team of 5 students in developing a robust and novel waste management system running on linux based Raspberry Pi server, containing Computer Vision model and ROS topics.
- Operated the server on an automated cycle to control stepper motors and run CV model on timed intervals to identify object, presented this in IEEE conference.

Projects

- **Maps Application** - Full stack ride-share application using React-Leaflet, custom A* routing engine, and Django. Uses Postgres with Django ORM, RBAC for drivers, riders and admins.
  - Custom A* routing engine finds shortest route with multi-stop functionality and published as python package (pip install aStarEngine-package)
  - Set up Docker Compose for local testing, enabling simultaneous containerized deployment of the frontend, backend, database, and Stripe payment services, with comprehensive Django-JWT authentication.

- **Stock Portfolio Management System** - CRUD based application to record buying,analyzing and selling stocks, using Django; with an alert system and dashboard using ReactJS, fetching stock data using YFinance API
  - Implemented OAuth2 using JWT for Google authentication, and HTTPS to prevent data interception
  - Implemented **Celery with Redis** to perform task scheduling and handling async background tasks such as occasional price check to notify user using SMTP
  - Dockerized the entire system to host on AWS EC2, with multiple docker pods under a single container

- **Employee Portal** - Monolothic CRUD-based application for employees and HR's, uses FastAPI backend and React Frontend with a robust authentication system, role-based access control (RBAC), and a leave request mgmt system.
  - Designed and developed **RESTful APIs** for handling leave requests, and implemented **JWT** based authentication
  - Implemented **CORS middleware** to handle cross-origin requests between services running on different ports.

Education

- **Virginia Tech** 08/2023 – 05/2025 | Blacksburg,VA
  MS in Computer Engineering
  Courses Summary - Computer Vision, Adv Machine Learning, Applications of ML
  Graduate Teaching Assistant - Advanced Computer Vision, Deep Learning, Computer Vision