

SHARAN MURLI

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EDUCATION

University of Southern California
Master of Science in Computer Science, Los Angeles, CA
SIES Graduate School of Technology
Bachelor of Engineering in Computer Engineering, India

MAY 2023 – DEC 2024

AUG 2018 – JUN 2022

SKILLS

- **Programming Languages:** Java, Python, TypeScript, Golang, C/C++, JavaScript
- **Frameworks:** Kubernetes, Django, Flask, GraphQL, Unit Testing, HuggingFace, DevOps, Agile, WebFlow, SaaS, Prompt Engineering
- **Cloud Platforms/Big Data/OS:** AWS, GCP, Azure (Azure SQL, Databricks), IAM, Lambda, Linux, Memoization, Windows, Jenkins
- **Web Technologies:** Next.js, React.js, Node.js, Express.js, Vue.js, Angular, HTML5, CSS3, Bootstrap, FastAPI, TailwindCSS, Redux
- **Tools/Databases:** PostgreSQL, MongoDB, Power BI, Tableau, GIT, JIRA, Docker, Amazon S3, Redis, SQL Stored Procedures

EXPERIENCE

AI Developer, USC Viterbi, Remote USA

FEB 2025 – Present

- Engineered LangGraph-based agentic pipelines to build interactive knowledge graphs, reducing **research query resolution** time by **15%**
- Integrated **multi-agent orchestration** with **ComfyUI** nodes, boosting **citation retrieval accuracy** by **28%** in benchmark tests and enhancing research usability for **100+ academic queries**
- Experimented with **LLMs (Mistral-7B, GPT4All, Ollama)** for research Q&A, optimizing prompting and fine-tuning for relevance

Software and IT Analyst, Marshall Technology Support, Los Angeles, CA

OCT 2023 – DEC 2024

- Designed automated workflows for recurring issue detection and incident response, improving reliability and reducing downtime by **30%**
- Developed **Power BI dashboards** and automated **ETL workflows** for **data ingestion**, enabling faster insights and improving operational efficiency by **25%**
- Configured **AWS CloudWatch alerts** for system performance monitoring and **fault tolerance**, reducing mean time to recovery (MTTR) and strengthening **risk management** with resilience

Software Engineering Intern, WorkUp, Marina Del Rey, CA

MAY 2024 – AUG 2024

- Deployed **backend microservices** using **Node.js, Next.js** and **AWS(S3, Lambda)** to create a **Chrome extension** for autofill purposes
- Boosted resume parsing accuracy by **20%** using **NER** and **optimized keyword matching** for more precise, reliable data extraction
- Partnered with teams to automate resume parsing workflows, integrating Redux state management and refining usability with feedback

PROJECTS

AstroBio Explorer: Research Companion

- Built an AI-powered research assistant using **FastAPI, LangChain** and **Gemini 2.5 Flash**, integrating **Qdrant** vector search to retrieve and ground answers from over **600** NASA bioscience papers with **72% evaluation accuracy** across 181 questions.
- Developed an interactive frontend with **Next.js** and **Tailwind CSS**, featuring inline citations, multi-session chat and **SerpAPI** integration, improving research usability and **citation reliability** by **40%**
- Architected a **retrieval-augmented generation** pipeline with modular agents for search, reasoning and **citation linking**, reducing response latency by **35%** and improving factual precision

Sports Product Search Enterprise

- Engineered a responsive product search platform using **Core Java, Spring MVC, React.js** and **Hibernate**, reducing search response time by **40%** and delivering Amazon-like user experience for sports products
- Optimized product retrieval and filtering by integrating **Oracle Database** with ETL pipelines, reducing **query latency**, improving data quality and supporting a catalog of **50K+ products**
- Secured user accounts with **Spring Security** and **JWT**, cutting unauthorized access attempts by **95%** and implemented automated builds with **Maven** and **CI/CD pipelines** for faster, error-free deployment

Transfer Learning for Cross-Language Program Repair with RepairCLlama

- Architected a transfer learning pipeline to adapt **RepairCLlama** for C debugging tasks, utilizing Java debugging knowledge to achieve a **CodeBLEU** score increase from **0.81 to 0.91** through additional fine-tuning and strengthening **reliability engineering** practices
- Refined code debugging through **LoRA-based fine-tuning**, achieving a **45%** reduction in training loss and improved error correction
- Benchmarked RepairCLlama against CodeLlama using performance and debugging metrics, achieving a **40% improvement in Plausible Match scores**, incorporating **code reviews** and strengthening **reliability** and **fault tolerance** of fine-tuned model pipelines

eBay Product Search Platform

- Crafted a Web and IOS product search platform, incorporating a **React.js Node/Express** proxy server to access the **eBay API**
- Modeled ETL data flows between scalable architecture and implemented **API-based ingestion**, with familiarity in **data governance** workflows and upstream/downstream pipelines (**CI/CD**)
- Integrated **Google Custom Search API** for **real-time** content retrieval, improving image search accuracy by **30%** through refined query algorithms, dynamic filtering leading to high availability and thorough **debugging/testing** of API workflows

LEADERSHIP AND ACHIEVEMENTS

- Earned **AWS Certified Cloud Practitioner Certification** and **Salesforce Certified AI Associate Certification**
- Published the research paper titled ***"Agricultural Supply System with Permissioned Networks through Hyperledger Framework"***
- **Teaching Assistant (Course Producer):** CSCI 572: Information Retrieval and Web Search Engines under **Professor Sathyanaraya Raghavachary** at University of Southern California (**USC**). Assisted in grading, documenting and managing course operations for a program cantered on **real-world industry** use cases in **data retrieval** and **web development** including SEO, ML and Big Data Analytics