

# SHARAN MURLI

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## EDUCATION

University of Southern California <i>Master of Science in Computer Science, Los Angeles, CA</i>	MAY 2023 – DEC 2024
SIES Graduate School of Technology <i>Bachelor of Engineering in Computer Engineering, India</i>	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
<ul style="list-style-type: none"><li>Engineered LangGraph-based agentic pipelines to build interactive knowledge graphs, reducing <b>research query resolution</b> time by <b>15%</b></li><li>Integrated <b>multi-agent orchestration</b> with <b>ComfyUI</b> nodes, boosting <b>citation retrieval accuracy</b> by <b>28%</b> in benchmark tests and enhancing research usability for <b>100+ academic queries</b></li><li>Experimented with <b>LLMs (Mistral-7B, GPT4All, Ollama)</b> for research Q&amp;A, optimizing prompting and fine-tuning for relevance</li></ul>	
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
<ul style="list-style-type: none"><li>Deployed backend microservices using <b>Node.js, Next.js</b> and <b>AWS(S3, Lambda)</b> to create a <b>Chrome extension</b> for autofill purposes</li><li>Boosted resume parsing accuracy by <b>20%</b> using <b>NER</b> and <b>optimized keyword matching</b> for more precise, reliable data extraction</li><li>Partnered with teams to automate resume parsing workflows, integrating Redux state management and refining usability with feedback</li></ul>	

## 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**

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- 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 centered on **real-world industry** use cases in **data retrieval** and **web development** including SEO, ML and Big Data Analytics