

RAHUL THENNARASU

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Education

California Polytechnic State University-San Luis Obispo

Expected May 2028

Bachelor of Science - BS, Computer Science | GPA: 3.88

San Luis Obispo, CA

Experience

Incoming Software Engineer Intern

June 2026 – Aug. 2026

NASA Jet Propulsion Laboratory

Pasadena, CA

Software Developer

Sept. 2025 – Present

Hack4Impact

San Luis Obispo, CA

- Redesigning Spokes nonprofit platform with **Next.js/MongoDB** under Amazon SDE mentorship, serving **150+** nonprofits across San Luis Obispo and Northern Santa Barbara
- Built event management system with API validation and dynamic forms, reducing posting workflow by **75%** through automation
- Engineered **REST API** endpoints with MongoDB schemas for calendar/user management and nonprofit resource coordination

Software Engineer

Sept. 2025 – Present

Poly1Rover & Cal Poly Space Systems

San Luis Obispo, CA

- Mars Rover software team integrating **AMD K26 SOM** for Poly1Rover 2030 mission, architecting **FreeRTOS/Linux** dual-OS reducing storage **13GB to 2.5GB**
- Leading Fill Station subsystem for liquid rocket with **embedded relay control** (Teensy 4.1) for safe propellant valve actuation
- Built **Rust/C++ MCAP** log replay system for satellite telemetry through **Zenoh** pub/sub with **microsecond-precision** timing

Software Engineer Intern

July 2024 – August 2024

airah.ai

Cupertino, CA

- Built **Flask/MongoDB** healthcare AI chatbot with **RAG pipeline** using PDF extraction and Google text embeddings
- Developed retrieval system using **cosine similarity** with MongoDB caching, collaborating with **Stanford oncologists**
- Deployed production API endpoints with error handling and validation, achieving **sub-second** medical query response times

Projects

Orbis | *Co-Founder, Lead Engineer*

Sept. 2025

- Co-founded AI observability platform with **zero-config Python SDK** for **OpenAI/Anthropic/Gemini/LangChain** instrumentation
- Implemented **distributed tracing** with **DAG visualization** for debugging async agent runs across parallel LLM calls and tool invocations
- Built LLM playground for **4+** provider comparison with **AES-256-GCM** encrypted keys and production trace replay

Fere | *Co-Founder & Lead Engineer*

Nov 2025

- Won **2nd place (\$10K)** at **Cal Poly Innovation Quest** out of **21,000+** students; built live topology graph of local dev environments with **sub-2s refresh**
- Implemented **worker-thread architecture** with **delta-based updates** and **topology-aware caching** for complex multi-service environments
- Engineered database tools for **MongoDB/PostgreSQL**, **API tester** with cURL builder, and unified **container log streaming**

Apple Containerization Framework | *Open Source Contributor*

Oct 2025

- Fixed **OCI archive import** with tar header validation ensuring compliance with OCI image specification standards
- Implemented **custom container routing** using **Swift netlink protocols** for advanced network configurations
- Enhanced **vmexec** error handling with **dedicated error pipe** without interfering with existing stderr vsock relay

Technical Skills

Languages: C, Python, Java, Rust, Swift, TypeScript, JavaScript

Systems: Embedded Systems, Real-Time OS, Linux, Concurrency, Distributed Tracing, Protobuf

Technologies: React, Next.js, Electron, Flask, FastAPI, Zenoh, Docker, MongoDB, PostgreSQL, OpenAI, Anthropic, LangChain