

KARRI NAGENDRA SAI JAYA RAMI REDDY

Vishakhapatnam, Andhra University

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OBJECTIVE

Computer Science undergraduate with strong hands-on experience building real-time AI systems, full-stack web applications, and distributed architecture. Developed production-grade projects across AI/ML, computer vision, blockchain, and backend systems, delivered measurable performance improvements during internships, and published two international research papers at the International Astronautical Congress (IAC) 2025, Sydney. Strong in Python, applied AI engineering, system design, and research-driven problem solving.

EDUCATION

- **Bachelor of Technology (Hons) in Computer Science Engineering**
Andhra University College of Engineering, Vishakhapatnam | 2022–2026
- **Bachelor of science in Data Science & Applications (Diploma Level)**
Indian Institute of Technology (IIT), Madras | 2022–2026
- **Minor Degree in Artificial Intelligence**
Indian Institute of Technology (IIT), Ropar | 2024–2025

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, C++, JavaScript
- **AI / ML:** Machine Learning fundamentals, CNNs, Computer Vision, Generative AI, RAG pipelines
- **Web & Backend:** Django, FastAPI, React.js, Node.js, HTML, CSS
- **Databases:** MySQL, MongoDB, PostgreSQL
- **Systems & Tools:** Git, Docker, Linux, WebSockets

PROFESSIONAL EXPERIENCE

- **Intern — Full Stack Developer (Python) I&T Labs, Vishakhapatnam | Dec 2023 – Dec 2025**
 - Designed, developed, and tested full-stack web applications using Python-based backend frameworks
 - Optimized backend logic, database queries, and workflows, achieving ~90% performance improvement in key modules
 - Debugged, refactored, and deployed features in real-world production codebases
- **Intern, Full Stack Web Development-Robocoupler (R&B), Vishakhapatnam | May 2024 - July 2024**
 - Built integrated frontend and backend components for web applications
 - Implemented responsive UI and backend APIs, improving end-to-end data flow and usability
- **Intern, Cyber Security (Virtual)-Slash Mark IT, New Delhi | May 2024 - June 2024**
 - Gained practical experience in cyber security measures and digital forensics.
- **Intern, Web Development (Django)- APSSDC (Govt. of Andhra Pradesh) | May 2025 - June 2025**
 - Developed web applications using Django, implementing authentication, routing, and database-driven features
 - Applied MVT architecture principles for scalable backend development

RESEARCH & INTERNATIONAL PUBLICATIONS

International Astronautical Congress (IAC) 2025 -Sydney, Australia Selected Presenter & Co-Author | International Astronautical Federation (IAF)

“Olfactory Odyssey: Cognitive Consequences in Zero-G”

- Studied microgravity-induced olfactory dysfunction and its impact on cognition, memory, and decision-making
- Analyzed ISS data and flight-analog studies identifying 15–25% cognitive performance degradation
- Evaluated electronic nose biosensing systems for astronaut safety and environmental monitoring

“Microgravity-Driven 3D Bioprinting for Enhanced Vascular Tissue Engineering in Space”

- Conducted physics-based analysis of 3D bioprinting in microgravity

- Analyzed ISS BioFabrication Facility experiments and tissue mechanics
- Developed a TRL roadmap (4–6 → 7–8) for space medical manufacturing

PROJECTS

- **J-Chain — Custom Layer-1 Blockchain Distributed Systems**
(<http://34.45.65.148:3001/>)
 - Blockchain Engineering
 - Designed and implemented a custom Layer-1 blockchain with real Proof-of-Work mining
 - Built EVM-compatible smart contract execution, P2P networking, and Merkle-based state management
 - Developed full-stack interfaces including wallet, explorer, and DeFi UI
- **Emotion-Driven AI Music Player AI / ML- Real-Time Systems**
 - Full-Stack Engineering
 - Tech: Python, FastAPI, WebSockets, CNNs, Computer Vision, Next.js, Three.js
 - Built a real-time emotion-aware music recommendation system using continuous facial emotion detection
 - Implemented CNN-based emotion recognition, achieving ~97–98% real-world accuracy
 - Engineered a low-latency (<100 ms) pipeline with WebSockets
 - Developed a 3D interactive UI visualizing emotional state in real time
 - Designed a privacy-first AI architecture with in-memory processing only
- **All rise — Spatial Agentic AI Platform- Multi-Agent AI • Real-Time Systems**
 - Built a multi-agent AI platform orchestrating parallel expert reasoning
 - Implemented real-time streaming (SSE) and async backend services
 - Integrated Retrieval-Augmented Generation (RAG) for grounded AI outputs
 - Developed a 3D spatial interface for reasoning visualization
- **Gift Bucket Shop — E-Commerce Website (Freelance)**
 - Developed a custom e-commerce platform with secure checkout and product customization features

LEADERSHIP & EXTRACURRICULAR ACTIVITIES (SELECTED)

- Vice President, Career Catalyst Forum, Andhra University, Vishakhapatnam (Feb 2025- P)
- Technical Outreach Head, AVASYA — Aviation & Astronomy Club, IIT Madras (Jul 2023 – Jul 2025)
- Content Creator & Documentation Head, Deva Bhasha — IIT Madras (Jun 2023 – May 2025)
- Founding Secretary, Pixels N Panels Society, IIT Madras (Sep 2024 – Aug 2025)
- Event Head Coordinator (Cultural), Paradox'24, IIT Madras (Mar 2024 – Jun 2024)
- HPAIR (Harvard Project for Asian & International Relations) — selected (University of Tokyo)

CERTIFICATIONS & TRAINING

- **WSAI — AI & Entrepreneurship II, IIT Madras**
- **Tech Gyan — Artificial Intelligence & GenAI, IIT Madras Research Park**
- **AI & Machine Learning Bootcamp — Udemy**
- **Complete Web Development — Udemy**

ACHIEVEMENTS

- Solved 100+ algorithmic problems across coding platforms
- Received Appreciation certificate Award from IIT Madras for leadership and event execution

PROGRAMMING PROFILES

- LeetCode | Codeforces | HackerRank