

Jual Aju

Computer Science Undergraduate

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OBJECTIVE

Computer Science undergraduate with hands-on experience building software across distributed systems, backend engineering, AI/ML, embedded systems, and infrastructure. Interested in designing reliable and efficient software systems, with experience developing real-time data pipelines, GPU-oriented ML compilation, and containerized applications. Foundation in programming, data structures, networking, and systems, with a focus on learning quickly and building production-oriented solutions.

EDUCATION

B.Tech in Computer Science and Engineering

Sahrdaya College of Engineering and Technology

CGPA: 9.00 — 3rd Year (Ongoing)

TECHNICAL SKILLS

Languages: Python, C, C++, Java, JavaScript, SQL, Bash, Rust

Computer Science: Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, Computer Networks, Distributed Systems

Software Engineering: Backend Development, REST APIs, Testing, Git, GitHub, Linux, Docker, CI/CD

Frameworks & Libraries: FastAPI, Next.js, Express.js, PyTorch, SQLAlchemy, OpenCV, NumPy

Databases: PostgreSQL, MySQL, MongoDB, Supabase, Firebase

AI / ML Systems: Machine Learning, NLP, PyTorch FX, Compiler Optimization, Triton, GPU Computing

Cloud / Infrastructure: Docker, GitHub Actions, Kubernetes, Terraform

Cybersecurity: Network Security, Penetration Testing Fundamentals, Ghidra, Burp Suite, Wireshark, Nmap

Hardware: Raspberry Pi, Arduino, ESP32, MQTT

PROJECTS

SecureShip – DevSecOps CI/CD Platform

2026 – Present

- *Python, FastAPI, PostgreSQL, Docker, GitHub Actions, Kubernetes, Terraform, Security Tooling*
- Developing a production-oriented platform for building, testing, securing, containerizing, and deploying backend applications through an automated DevSecOps pipeline
- Building a containerized FastAPI and PostgreSQL backend with automated testing, database migrations, and reproducible local development using Docker
- Designing CI/CD workflows integrating code quality, dependency, secret, container, and infrastructure security checks with automated quality gates
- Extending the platform toward Kubernetes-based deployment and observability using infrastructure as code and application monitoring

AI Compiler Optimization – GPU-Aware ML Compiler

2026 – Present

- *Python, PyTorch, Torch FX, Intermediate Representation, Triton, GPU Computing*
- Developing a research-oriented compiler pipeline that transforms PyTorch computational graphs into an intermediate representation for automated workload optimization
- Designing graph-level optimizations including operator fusion to reduce intermediate memory traffic and kernel-launch overhead during GPU execution
- Generating hardware-oriented Triton kernels from optimized representations while maintaining computational correctness
- Evaluating optimization impact through execution latency, kernel launches, memory behavior, and correctness benchmarks with the goal of developing the work toward a research publication

AI-Centric Cyber-Physical System – 5 Village Deployment

2024 – Present

- *Python, ESP32, Raspberry Pi, MQTT, ML Inference, Distributed Systems*
- Architecting a distributed monitoring system spanning 5 villages, integrating heterogeneous sensor streams across agriculture, energy, water, healthcare, and waste-management domains
- Designed a concurrent, event-driven data ingestion layer for heterogeneous IoT nodes with fault-tolerant message queuing
- Built an edge ML inference pipeline for anomaly detection and predictive analytics with offline operation and synchronization mechanisms

EXPERIENCE

IT Intern – Compusat

2024 – 2025

- Configured Sophos XGS 108 firewall infrastructure following a phishing incident, implementing web filtering, application control, and TLS inspection
- Set up Windows Server 2022 with Active Directory, dual Domain Controllers, and DFS Replication for a client network serving two companies
- Deployed NComputing vSpace thin-client infrastructure with OU-based permission isolation between organizations

LEADERSHIP

Campus Lead – TinkerHub, Sahridaya

2025 – Present

- Serving as the official campus technical community lead, organizing technical workshops, hackathon preparation, and peer-learning initiatives for 200+ students
- Driving collaborative learning and engineering-focused technical activities across the campus community

WIT Lead – TinkerHub

2024

- Led Women in Tech initiatives and encouraged participation in technical learning and project-based activities
- Initiated and led state-wide learning sessions for women in technology under Tink-Her-Hack 4.0

Founder – Tinkerbelle Initiative

- Founded a women-in-tech community focused on collaborative learning, mentorship, and technical growth
- Designed structured learning tracks and project groups to encourage hands-on technical development

Student Placement Coordinator

- Coordinated college-level placement activities, student preparation, and recruiter-student interactions

ACHIEVEMENTS

- **CTF Champion** – Capture The Flag Competition conducted by ASIET
- **Runner-Up** – Herizon Ideathon conducted by IEEE Kerala SPS Chapter
- **First Prize** – Innova Ideathon organized by Future Tech Club (IEDC)
- Ranked among the **Top 300 participants** out of 6000+ in **Tink-Her-Hack 4.0**
- **Selected twice** for the **Google Physical AI Hackathon** (GDG-powered)
- Initiated and led state-wide learning sessions for women in technology under Tink-Her-Hack 4.0

INTERESTS

Software Engineering · Distributed Systems · Operating Systems · Computer Networks · AI/ML Systems · Compiler Engineering · Cybersecurity · Embedded Systems