

B. Ajay

Tamil Nadu, India

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🌐 AjayCSE29

Motivated Computer Science undergraduate with hands-on experience in Artificial Intelligence, backend development, and systems engineering. Proven ability to architect and build end-to-end applications ranging from custom C++ rendering engines to ML-driven web services. Seeking to leverage a strong foundation in Linux environments, software optimization, and machine learning technologies in a challenging AI/ML or backend engineering role.

Education

Aalim Muhammad Salegh College of Engineering
B.E. Computer Science and Engineering

Avadi, Tamil Nadu
Expected Graduation: 2029

Technical Skills

- **Programming Languages:** Python, C/C++, JavaScript
- **Frameworks & Libraries:** Flask, SDL2
- **Core Technologies:** Machine Learning, Computer Vision, LLM Integration, Rigid Body Physics Simulation
- **DevOps & Tools:** Docker, Git, Ngrok, SSH
- **Systems & Databases:** Linux (Ubuntu/Xubuntu), System Administration, Networking Basics, MySQL, SQLite

Technical Projects

C++

Ajax Engine (Custom Game/Rendering Engine)

GitHub Repository

- Engineered a lightweight, high-performance 2D game and rendering engine from scratch focusing on core mechanics.
- Designed and optimized the core game loop architecture to ensure efficient resource management, memory safety, and stable frame rates.

C++, SDL2

Lunar Lander Simulation

GitHub Repository

- Developed a comprehensive 2D physics simulation game utilizing C++ and the SDL2 rendering library.
- Implemented complex mathematical algorithms for realistic rigid body physics, environmental gravity simulation, and precise collision detection.

Python, ML, Computer Vision

Litter Detection Model

GitHub Repository

- Designed and trained a custom Computer Vision model utilizing Machine Learning classification algorithms to accurately detect environmental litter.
- Evaluated and fine-tuned model parameters to enhance detection accuracy, contributing to automated waste management solutions.

Python, Flask, Ngrok

AI Chatbot Web Application

Live Application

- Architected and deployed a live, real-time interactive chatbot web application using the Flask framework.
- Integrated Large Language Models (LLMs) and advanced speech input/output processing for a seamless and responsive user experience.
- Configured and exposed the local Linux server environment to public web access using Ngrok for live demonstration capabilities.

Experience & Achievements

Independent Projects

Systems Architecture & Development

- **System Deployment:** Acquired practical, hands-on experience deploying complex AI and backend software systems directly onto Linux (Ubuntu/Xubuntu) servers.
- **Optimization & Debugging:** Cultivated strong debugging, memory management, and performance optimization skills through rigorous testing of C++ programs and server deployments.
- **Project Portfolio:** Demonstrated proficiency in full-stack project lifecycles by independently conceptualizing, developing, and successfully launching multiple cross-domain systems (Games, ML models, Web APIs).