

# ATHINA KARTHIKEYAN

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## Education

### Chennai Institute of Technology

Bachelor of Engineering, Computer Science

2025 - 2029

## Experience

### Software Team (GMAT)

Project Intern

Jul 2025 - Aug 2025

Remote

- Collaborated with aerospace engineers to build real-world space mission software and explore integration of simulation components, leveraging Python and C/C++ for robust development.
- Contributed to GMAT for orbital simulation and trajectory modeling by ensuring reliability in software and aligning system modules for accurate performance.
- Applied programming, physics, and design thinking to troubleshoot and resolve integration challenges in multi-disciplinary projects.

### GSSOC 2025

2025

Open Source Contributor

Remote

- Analyzed the project prototype to identify integration and debugging issues, subsequently raising them with maintainers.
- Assigned tasks based on reported issues and implemented precise fixes to enhance software development and integration reliability.
- Gained hands-on experience in real-world development, sharpening skills in debugging, software testing, and effective cross-functional collaboration.

## Projects

### Social Media Simulation | C++, STL, File I/O

- Console-based simulation with profiles, messaging, friend system & file persistence.

### Library Management System | C++

- Tracks books, borrowing, and users with file-based storage.

### Portfolio Website | HTML, CSS

- Responsive personal site to showcase projects and skills.

### Drug Addiction Recovery Management System | C++

- Tool for medication tracking, therapy scheduling, and billing.

### Rocket Trajectory Calculator | Excel, Newtonian Mechanics

- Spreadsheet tool applying physics formulas to model rocket movement.

### AI Image Generator MVP | Python, Hugging Face, AWS

- Lightweight image generation using Stable Diffusion on AWS Lambda.

### Ollama AI Chat System | Python, Ollama, Web UI, LLMs (Mistral, Gemma)

- Private AI chatbot system using Ollama and open-source LLMs.

## Technical Skills

- Languages:** Python, Java, C/C++, HTML/CSS, JavaScript, MySQL

- Developer Tools:** VS Code, Figma, Git, Github, AWS lambda, Hugging Face, Excel, Stable Diffusion

- Concepts:** OOP, System Design, File I/O, APIs, Serverless Architecture, Frontend & Backend Development

## Leadership / Extracurricular

### Space Technology and Aeronautical Rocketry (STAR)

Aug 2025

Project Lead

- Planned Spacecraft Path: Designed the path to move a spacecraft from Earth's orbit to the Moon using step-by-step orbit changes.
- Calculated Engine Burns: Found the right speed changes (V) and timings for each engine burn to reach the Moon efficiently.
- Simulated Moon Landing: Created a safe landing plan by simulating free fall and firing engines at the right moment to land softly on the Moon.