Ruthvik Reddy Gade

+91 8074912186 | gaderuthvikreddy@gmail.com | RealRuthvik.com | linkedin | Github

TECHNICAL SKILLS

Programming: Python, SQL, Bash, Java & C/C++
Frameworks & Libraries: FastAPI, SQLAlchemy & TensorFlow
Technologies & DevOps: Git, Google Cloud Compute, Docker & Linux

EXPERIENCE

ADCS ENGINEER - 1U CUBESAT MISSION (ICARUS)   Bengaluru, India | 2025 - Present

- *Contributed to **ADCS design** for a **1U CubeSat**, including **magnetorquer hardware**, **attitude sensors** (sun sensors, magnetometer, IMU), and **system-level architecture**.*
- *Designed and implemented **attitude determination and control algorithms**, integrating **multi-sensor data** for **real-time estimations** on a STM32 using **FreeRTOS**.*
- *Authored a formal **ADCS design report** covering **system architecture**, **control modes**, and **subsystem interfaces**.*

"HACK-A-BOT" HACKATHON   Bengaluru, India | 2025

- *Developed **OFNIR**, an AI personal trainer using **LangGraph** for multi-step orchestration and **Gradio** for a custom Obsidian-themed interface.*
- *Integrated **Groq-powered LLMs** with strict **safety guardrails** and **biometric validation** to provide structured, safe fitness and nutrition protocols.*

PROJECTS & TECH DEMOS

AUTONOMOUS AIRCRAFT LANDING & TAXI CONTROL SYSTEM   Website | Source Code

- Designed an **autonomous ATC system** implementing **real-time aircraft sequencing**, **constraint-based pathfinding**, collision avoidance, **emergency handling**, and runway scheduling.
- Built a **live web-based visualization interface** to simulate aircraft movement, visualize taxiway/runway paths, and monitor ATC-managed operations in real time.

ZERO-TRUST SHAMIR'S SECRET SHARING TOOL   Website | Source Code

- Architected a **high-performance secret sharing service** using **FastAPI**, featuring a **stateless architecture** that processes sensitive data in-memory.
- Developed a **stateless FastAPI backend** that validates **cryptographic shares** and **prevents secret reconstruction** under partial system compromise.

SERVERLESS REAL-TIME CHAT & VIDEO PLATFORM   Website | Source Code

- Built a *decentralized chat and video platform* designed to operate without **centralized servers**, ensuring *resilience against internet shutdowns*.
- Enabled *peer-to-peer communication using WebRTC*, with *FastAPI + WebSockets* for signaling and *end-to-end encrypted* audio/video streams.

EDUCATION

MANIPAL ACADEMY OF HIGHER EDUCATION   Bengaluru, India | 2024 - 2028

BTech, Electronics & Computer Engineering