

# Hamza Anver

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📍 Abu Dhabi, UAE

## EDUCATION

### 🏆 New York University

BS in Computer Science

Minor in Engineering

Expected May 2026 | Abu Dhabi

GPA: 3.74/4.00

## SKILLS

### Programming Languages

C/C++, Python, VHDL, JavaScript,  
HTML/CSS, LaTeX, Bash

### Embedded Systems

STM32, ESP32, FreeRTOS,  
PlatformIO, STM32 HAL, ESP-IDF,  
Arduino, PX4, CAN Bus, UART, SPI,  
I2C, MQTT, HTTP/REST, JSON, AT  
Commands, LTE/Wi-Fi Integration,  
GTest, Ceedling

### Hardware & Simulation

KiCad, EasyEDA, SPICE Simulation,  
Cadence Virtuoso, FPGA  
Development, Schematic Capture,  
PCB Layout, Signal Conditioning,  
FEA, OpenRocket

### Software Tools

Git, Docker, GitHub Actions  
(CI/CD), NiceGUI, Fusion 360,  
OnShape, Blender, MATLAB,  
LTspice, Ubuntu Linux, SSH

### Collaboration & Workflow

Git Version Control, Code Review,  
Continuous Integration, Agile  
Development, Technical  
Documentation, KiCad Git  
Integration, Jira, ClickUp

## PERSONAL LINKS

🌐 [hamzaanver.com](https://hamzaanver.com)

🐙 [github.com/Hamza-Anver](https://github.com/Hamza-Anver)

🌐 [linkedin.com/in/a-hamza-anver](https://www.linkedin.com/in/a-hamza-anver)

## PROJECT LINKS

🔗 [OmniStim Eval Board](#)

🔗 [ESP32 MQTT Handler](#)

🔗 [nyuad.space](#)

🔗 [RoCat V1.1.0](#)

🔗 [ARMER](#)

🔗 [HALOSHIP](#)

🔗 [hamzaanver.com/projects](#)  
for complete project portfolio

## EXPERIENCE

### AirQ Limited

Abu Dhabi, UAE | Jun – Aug 2025

#### Embedded Systems Intern

- Built a real-time CAN-to-UART bridge on STM32 (FreeRTOS) emulating a Currawong servo, enabling 200 Hz control of VTOL pitch actuators.
- Extensively tested the CAN-to-UART bridge using a logic analyzer to verify timing and protocol integrity; the system is now deployed on active aircraft.
- Implemented robust firmware with automated restart, detailed error signaling, and a configuration system that removed dependence on dedicated tools.
- Created a C++ PX4 firmware module to read pulse data from flow meters, compute real-time fuel flow and rate, and publish telemetry via uORB.
- Developed a web-based uLog visualizer with NiceGUI, integrating 3D GIS flight paths and time-synced telemetry plots for internal debugging and analysis.
- Deployed GitHub Actions CI/CD pipelines for embedded firmware, automating builds, static analysis, and code-quality verification.

### Integrated Bioelectronics Lab

Abu Dhabi, UAE | Mar – May 2025

#### Research Assistant

- Conceived, designed, and fabricated the *OmniStim*, a wireless power PCB using varactor-tuned resonant coils driven by an ESP32 APLL across 10–100 MHz.
- Developed hardware and firmware to generate, condition, and measure high-frequency signals for resonance detection, designed in KiCad and PlatformIO and fabricated by JLCPCB.
- Implemented self-tuning control via envelope-feedback voltage to automatically maintain resonance during capacitor switching and varying loads.
- Validated performance through oscilloscope measurements, achieving  $\sim 7 V_{pp}$  on the RX coil and informing ongoing lab-led publication work.
- Initiated development of the next *OmniStim* iteration based on this experiment.

### Sri Lanka Telecom

Colombo, Sri Lanka | Jun – Aug 2024

#### Research & Development Intern

- Developed multi-task ESP32 IIoT firmware using FreeRTOS for internal testbeds, integrating a modular MQTT handler and a JSON-configurable web portal.
- Designed an embedded web portal for simple, mobile-friendly use by end users.
- Linked ESP-IDF with LTE modules via AT commands to enable secure OTA updates and automatic LTE/Wi-Fi fallback during demos.
- Generated synthetic number plate datasets in Blender and Python for ANPR model training with randomized lighting, occlusion, and perspective variation.
- Reduced firmware size by 60% through Python-based minification and compression of embedded HTML, CSS, and JavaScript assets.

### nyuad.space

Abu Dhabi, UAE | May – Jul 2023

#### Summer Research Assistant

- Collaborated with NASA JPL engineers on ARMER, a reusable CubeSat hold-down-and-release mechanism validated by Finite Element Analysis.
- Earned 2nd place in the Dr. Gil Moore Award for Innovation among 150+ international university teams for innovation in flight systems.
- Led design and assembly of RoCat V1.1.0, a six-layer STM32F7 flight computer featuring GNSS, LoRa transceiver, dual IMUs, SD-card logging, and flash.
- Assisted with integration, avionics preparation, and logistics for HALOSHIP, a modular high-power rocket launched at the Spaceport America Cup 2023.
- Designed and 3D-printed avionics bays, couplers, and modular fuselage components using Fusion 360 and Onshape.
- Used FEA and OpenRocket simulations to validate structural safety and aerodynamic performance of rocket subsystems.