Hamza Anver

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Education

New York University - Abu Dhabi, UAE / Paris, France / New York, USA — August 2022 - May 2026
BS Computer Science & Minor in Engineers – GPA 3.75/4.00

Experience

Intern, Sri Lanka Telecom Digital Lab – Colombo, Sri Lanka — June 2024 – August 2024

- Developed synthetic image generation to augment machine learning models for number plate recognition.
- Wrote alpha firmware for SIMCOM A76XX modules with ESP IDF for ESP32 microprocessors.
- Created firmware for resilient MQTT, web portal based configuration and OTA update management.

Summer Research Assistant, Engineering Design Studio – Abu Dhabi, UAE — May 2023 – July 2023

- Researched and developed a reusable, non-pyrotechnic hold-down-and-release mechanism in collaboration with NASA JPL mentors for use in deployment of small spacecraft and CubeSats.
- Designed and launched a fully reusable experimental high power amateur rocket with redundant non-pyrotechnic stage separation and custom avionics at SpacePort America Cup 2023.
- Designed and manufactured custom flight computer PCB with high speed data logging.

Equipment Specialist, SpaceBar SIG – Abu Dhabi, UAE — August 2023 – December 2023

- Responsible for operation and maintenance of telescopes and astrophotography equipment.
- Organized large scale desert star gazing and astrophotography equipment.
- Collaborated with other SIGs and Student Government for events and funding.

Projects

ESP 32 MQTT Handler, Sri Lanka Telecom Digital Lab | Details — August 2024

- Modular library for Industrial IoT applications, including MQTT, OTA, and a Web Portal.
- Adaptable captive Web Portal with configuration options and live status updates.
- Demonstrated 'pull' approach OTA updates, with devices periodically checking and updating from GitHub.
- Python scripting for auto formatting and compression of HTML files for use in PlatformIO projects.

RoCat V1.1.0, nyuad.space | Details — August 2023

- Flight computer focused on high speed data logging, modularity via peripheral connectors, pyro-channel capabilities, long range communication, and dual mode operation (ground station & flight computer).

HDRM, NASA Jet Propulsion Lab | Details — June 2023

- A rapidly resettable, reusable, mechanically and electrically redundant hold-down and release mechanism, for small satellites and CubeSats.
- Demonstrated reduced system cost from comparable alternatives at 100,000 USD to 1,000 USD.
- Utilized advanced finite element analysis simulations and manufacturing technologies.

HALOSHIP, SpacePort America Cup | Details — June 2023

- Fully reusable high powered amateur rocket, with two prototype HDRM's used for stage separation.
- Features entirely mechanical subsystems - designed through the use of extensive simulation and CAD, custom avionics, and the ability to pack down into a suitcase.
- Received the *Dr. Gil Moore Innovation Award* for radical new approaches to hobbyist rocketry.

Skills

Frameworks: FreeRTOS, ESP-IDF, PlatformIO
Languages: C/C++, Python, HTML/CSS, LaTex, JavaScript
Tools: Docker, Git, Linux, VS Code
Software: KiCad, Fusion360, OnShape, DaVinci Resolve, OpenRocket, InkScape, Blender