Hamza Anver

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EDUCATION

NEW YORK UNIVERSITY
BS in Computer Science
Minor in Engineering
Expected May 2026 | Abu Dhabi
GPA: 3.75/4.00

LINKS

hamzaanver.com
github.com/Hamza-Anver
linkedin.com/in/a-hamza-anver

PROJECT LINKS

nyuad.space
ESP32 MQTT Handler
RoCat V1.1.0
HDRM
HALOSHIP
hamzaanver.com/projects
for all projects

COURSEWORK

GRADUATE
Real Time Embedded Systems

UNDERGRADUATE
Operating Systems
Algorithms
Computer Systems Organization
Applied Internet Technology
Data Structures

SKILLS

PROGRAMMING
C/C++ • Python • JavaScript
HTML/CSS • LaTeX

HARDWARE
Printed Circuit Board Design
PCB Assembly • 3D Printing
CAD • Simulation

FRAMEWORKS
FreeRTOS • ESP-IDF • PlatformIO

SOFTWARE
KiCad • Fusion360 • OnShape
DaVinci Resolve • OpenRocket
InkScape • Blender • VS Code

MISCELLANEOUS
Docker • Git • UNIX Shell • SSH
CloudFlare • Digital Ocean • Cats

EXPERIENCE

SRI LANKA TELECOM Colombo, Sri Lanka | Jun - Aug 2024
Research & Development Intern

- Developed synthetic image generation for training number plate recognition machine learning algorithm with Blender and Python
- Designed Industrial Internet of Things firmware for ESP32 providing development platform for future work using FreeRTOS & PlatformIO
- Wrote SIMCOM A76XX LTE module firmware with Espressif IoT Framework

ENGINEERING DESIGN STUDIO Abu Dhabi, UAE | May - Jul 2023
Summer Research Assistant

- Collaborated with mentors from **NASA JPL** for development of a novel hold-down-and-release mechanism for small spacecraft
- Designed manufactured and launched an experimental high powered rocket with exploratory separation systems at **SpacePort America Cup 2023**
- Developed and fabricated PCBs for a custom flight computer and 3D printed components for the structure of the rocket

PROJECTS

ESP32 MQTT HANDLER SLT Digital Lab | Aug 2024
IIoT Firmware

- Modular library for Industrial IoT, providing a web portal for configuring MQTT and OTA settings, with redundant LTE & WiFi communication
- Adaptive asynchronous captive web portal with live status updating
- Automated HTML formatting and compression using Python in PlatformIO projects for rapid development of embedded system web interfaces
- Implemented Over-The-Air updates with a 'pull' method for multiple systems to update themselves using a single GitHub repository or server

ROCAT V1.1.0 nyuad.space | Aug 2023
Rocketry Flight Computer

- Flight computer consisting of a six layer, 54mm x 80mm custom PCB
- Features high-speed data logging, 6 DoF IMU for tracking, SD card storage, on board flash storage, peripheral connectivity and battery management
- Uses an STM32F7 as an MCU, UBLOX SAM-M8Q GNSS for positioning and an RFM69 for LoRa communication

ARMER NASA JPL & nyuad.space | Jul 2023
Hold-Down-and-Release Mechanism

- Reusable, mechanically and electrically redundant hold-down and release mechanism for small satellites and CubeSats
- Designed with finite element analysis and advanced manufacturing techniques to optimize the production process
- Showcased a reduction manufacturing cost from $100,000 to $1,000
- Two were successfully flown on HALOSHIP for chute deployment

HALOSHIP SpacePort America & nyuad.space | Jul 2023
High Power Amateur Rocket

- Fully reusable high-powered amateur rocket, featuring two prototype HDRMs for section separation, and a novel approach to design
- Entirely mechanical subsystems utilizing CAD and simulations for a modular compact design transportable in a suitcase.
- Runner up for the **Dr. Gil Moore Award for Innovation**