





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**