

Brian David Umana Fuentes

Brooklyn, NY 11201 | bdu206@nyu.edu | (631) 469-5368 | linkedin.com/in/brian-umana-fuentes | brianumana.com

U.S. Citizen - eligible for DoD security clearance

EDUCATION

New York University, Tandon School of Engineering, Brooklyn, NY Expected May 2028
Bachelor of Science, Electrical and Computer Engineering | Minor in Quantum Technology
Dean's List 2024-25 | Study Away: NYU Abu Dhabi, Spring 2026
Relevant Coursework: Signals and Systems, Digital Logic and State Machine Design, Computer Architecture, Advanced Circuits, Probability and Statistics, Linear Algebra and Differential Equations, Data Structures and Algorithms

EXPERIENCE

Radio & Telemetry Systems Engineer — Rogue Aerospace, Brooklyn, NY June 2025 - Present

- Design and implement the radio and telemetry system for NYU's first hybrid-propulsion rocket, sustaining a real-time downlink beyond 10,000 ft AGL on the 915 MHz band within a ~2 W avionics power budget and ~18 dB link margin
- Design a custom avionics PCB in Altium from schematic capture through layout, replacing store-bought breakout modules across the full flight stack for the 2026-27 build
- Rebuilt and bench-validated XBee Pro radio links, cutting packet loss from ~12% to ~1% at 1 km and delivering the program's first end-to-end real-time downlink
- Prototype a wireless pyrotechnic ignition circuit: paired Arduino UNO R3 controllers over the same XBee link gate a logic-level MOSFET switching a 9 V igniter, replacing hardwired launch control with a remote arm/fire path
- Built a Python telemetry pipeline and C++ Arduino command/control firmware, logging ~20 packets/sec across 8 ground tests
- Integrate a SparkFun SAM-M10Q GNSS module over UART at 10 Hz and ~1.5 m accuracy, and flow down RF interface requirements across airframe, payload, and propulsion teams for FAR-OUT compliance

IT Support Assistant — NYU Stern School of Business, New York, NY April 2025 - Present

- Resolve 5-10 faculty support tickets per shift at 90% first-contact closure across 30+ classrooms and 60+ wireless microphone channels
- Diagnose and repair AV signal chains and a 25-unit printer fleet, cutting recurring hardware failures 20%

Freelance Web Developer — Self-Employed, Brooklyn, NY Nov. 2022 - Present

- Run a web development business serving 3 small-business clients; build responsive HTML/CSS/JavaScript sites with SEO metadata and lead-capture forms, deployed through Git and Netlify with Cloudflare DNS and CDN

Audio Supervisor — Ministry Voice of Salvation, Wyandanch, NY June 2021 - July 2026

- Lead audio engineering for 16+ live events, coaching a 10-person crew and cutting setup time 25%
- Configure Dante audio-over-IP networks across 48 channels; automated inventory tracking for 300+ items in Excel VBA, cutting processing time from 8 to 4 minutes per cycle

E-Commerce Associate — Endure Forever, Central Islip, NY Nov. 2022 - Jan. 2026

- Rebuilt a Shopify storefront front end, cutting average page load 4.2 s to 1.9 s and lifting online revenue 12% in six months

PROJECTS

Command & Data Handling Engineer — NASA L'SPACE Mission Concept Academy, Remote May - Aug. 2025

- Designed the Command and Data Handling subsystem for a Mars rover mission concept, carrying 6 flight articles through Preliminary Design Review at TRL 5 within a 2.1 kg, 88 W peak avionics allocation
- Specified a 435-455 MHz UHF relay link delivering 8-256 kbps downlink at ≥15 dB margin to Mars orbiters, paired with a 440 GB radiation-hardened solid-state recorder sustaining 60 Mbps over SpaceWire
- Hardened the avionics for a two-year Martian surface stay using 100 krad(Si) parts, a 30 s single-event-upset scrubbing cadence, and a -55 to +85 °C thermal envelope
- Mapped every CDH requirement to a test, analysis, inspection, or demonstration method per the NASA Systems Engineering Handbook, and dual-sourced all 6 flight articles against 3-12 month lead times

SKILLS

Test & Measurement: Oscilloscope, Signal Generator, Digital Multimeter, Soldering (through-hole & SMT), Breadboard Prototyping
Simulation & EDA: LTspice, Cadence, Ansys HFSS, Ansys Sherlock, Altium Designer, KiCad
Programming: C/C++, Python (NumPy, Pandas), SQL, Linux, Git
Embedded & RF: Arduino, XBee Pro, GNSS/NMEA, UART, SPI, I2C, MOSFET switching
Mechanical CAD: SOLIDWORKS, Siemens NX, Fusion 360, AutoCAD, 3D Printing