

Nelie Louissaint

Embedded Systems & Firmware Engineer (Student)

Brooklyn, NY | [LinkedIn](#) | [GitHub](#)

Computer Engineering Technology student building complete embedded systems from circuit to firmware, with hands-on experience in ESP32/Arduino development, sensor integration, and controls modeling.

EXPERIENCE

IT Support Intern

Sep 2025 — Jan 2026

Mayor's Office of New York City

New York, NY

Diagnosed and resolved hardware, software, and network issues across a 200+ user environment using structured troubleshooting methods. Managed Active Directory accounts, access permissions, and onboarding; configured and deployed workstations and peripherals.

Sales Associate

Jul 2022 — Present

COS

Brooklyn, NY

Delivered customer service while managing inventory and point-of-sale transactions in a fast-paced retail environment.

EDUCATION

City Tech, CUNY

Sep 2024 — Jun 2026

Bachelor of Technology, Computer Engineering Technology

Coursework: Embedded Systems, Microprocessors, Digital Logic, Circuit Analysis

New York City College of Technology (CUNY)

Sep 2022 — Jun 2024

Associate of Science, Computer Engineering Technology

PROJECTS

ESP32-based embedded control system with multi-sensor integration, Smart Home Assistive Technology System

Developed an ESP32-based embedded control system integrating PIR, light, temperature, and gas sensors with actuators to automate lighting and environmental monitoring. Programmed C++ control logic managing real-time sensor-to-actuator response across multiple hardware subsystems. Tested and debugged hardware/firmware interactions to confirm reliable sensor readings, actuator behavior, and system stability.

DC motor control and feedback system analysis, MATLAB & Simulink Motor Control Simulation

Modeled DC motor control behavior in MATLAB/Simulink, applying transfer functions and feedback loops to analyze system response. Evaluated dynamic system behavior through simulation to build practical controls knowledge applicable to robotics and physical AI systems.

Wireless embedded device with 3D-printed enclosure, Bluetooth Assistive Access Device

Built a Bluetooth-enabled embedded device with custom 3D-printed enclosure, taking a wireless system from firmware to physical housing. Implemented embedded control logic managing sensor input and wireless communication; validated through iterative testing. Extended this hardware-design approach in related projects prototyping additional low-cost assistive-device concepts.

Real-time sensor acquisition and actuator control pipeline, Embedded Sensor Monitoring System

Developed firmware processing real-time sensor acquisition and driving system outputs from live data, implementing a perception-to-action pipeline core to physical AI and robotics applications.

SKILLS

ESP32 · micro:bit · Embedded C/C++ · GPIO · PWM · UART · I²C · SPI · C · C++ · Python · HTML · motor control · feedback systems · transfer functions · system response · real-time sensor processing · sensors · actuators · servo motors · relays · breadboarding · 3D printing · Tinkercad · Simulink · Arduino IDE · Git · GitHub · Linux · AutoCAD · Active Directory · firmware development · hardware-software integration · system testing · hardware debugging · prototyping