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EDUCATION

Northeastern University, Boston, MA	Expected Dec 2026
Master of Science in Electrical and Computer Engineering	GPA: 3.6
Coursework: Computer Architecture, Operating Systems, Computer Networks & Security, Real Time Systems	
Anna University, Chennai, India	May 2024
Bachelor of Engineering in Electronics and Communication Engineering (Mahatma Gandhi Merit Scholar)	
Minor in Internet of Things (IoT)	

TECHNICAL SKILLS

Languages:	C, C++, Rust, Python, Assembly, MATLAB
Embedded:	ZephyrRTOS, FreeRTOS, nRF Connect SDK, Embassy, Embedded Linux, TinyML
Hardware:	nRF52, STM32, ESP32, RPi, Pynq-Z2 FPGA
Protocols:	CAN, BLE, UART, SPI, I2C, JTAG, TCP/UDP, MQTT, ThreadX
Tools:	Git, CMake, Docker, GDB, Vivado, Altium, Oscilloscope, Logic Analyzer, Wireshark

WORK EXPERIENCE

NodeGlobe Inc (NODE) – Boston, MA	Dec 2025 – Apr 2026
<i>Embedded Engineer Co-op</i>	
- Built C firmware on Zephyr RTOS (nRF Connect SDK) for a screenless nRF52840 wearable, with a 4-thread architecture and drivers for the PDM microphone, 2 MB QSPI flash, NVS storage, touch input, and DRV2605L haptics - Secured BLE audio with AES-128-CCM on the CryptoCell-310 via PSA Crypto, using per-packet nonces and authentication tags, and wrote a Python tool to verify decryption - Profiled an on-device TinyML wake-word (VAD) model under full system load, verifying reliable inference within the nRF52840's 256 KB RAM / 1 MB flash budget - Evaluated the TPS63900 as a replacement for the TPS63020 buck-boost converter, modeling ~34% longer battery life	
Northeastern Electric Racing (FSAE) – Boston, MA	Sep 2025 – Present
<i>Firmware Engineer</i>	
- Implemented a feedforward temperature controller in Rust (Embassy async) that adjusts thermal response ahead of measured deviation, improving responsiveness over PID-only control - Developed Cruise Control drive mode with CAN speed-limit input, MPH-to-RPM conversion, and linear pedal-torque derating to hold a driver-set speed via the motor controller API - Built closed-loop thermal control for the LV box: read SHT30 temperature, computed a linear 0-100% PWM duty cycle, and sent it over CAN to the vehicle compute unit, updating the shared CAN database	
Movement Neuroscience Lab – Boston, MA	May 2025 – Present
<i>Research Intern</i>	
- Built real-time C++ modules on RTXI (Xenomai/EVL Linux, 10 kHz loop) for a closed-loop neurostimulation platform that synchronizes a force-tracking task with tES, temporal interference, and TMS output - Implemented a real-time EEG pipeline (LSL ingest, TMS-artifact reconstruction, notch/bandpass filtering, FFT band power) that modulates tES/TI amplitude in closed loop - Kept the real-time thread deterministic using lock-free atomic handoffs and by moving Qt/X11 calls off it, avoiding Xenomai secondary-mode switches	
Northeastern University - Boston, MA	May 2025 – Dec 2025
<i>Teaching Assistant (Computer Networks, Digital Design & Computer Architecture)</i>	
- Guided 50+ students in learning the OSI fundamentals with conceptual and Wireshark based laboratory assignments - Conducted office hours on a weekly basis on socket programming in python, routing protocols (TCP/IP) and helped 15+ students in building RISC-V single-cycle processors on Pynq-Z2 FPGA using Xilinx Vivado	

PROJECTS

EV CAN Network: Simulation and Hardware Validation	Sep 2026 – Present
- Developed a 3-node ESP32 CAN testbed emulating an EV's ECUs with real sensors, and a SimPy discrete-event simulator of the same network, validated against analytical worst-case response-time bounds - Measured message latency, jitter and deadline misses across bus loads up to 95%, bitrates and fault scenarios, using logic-analyzer timing and 95% confidence intervals to compare simulation with hardware	