Ewoud Van Vooren

Massachusetts | ewoud.vanvooren@gmail.com
github.com/EwoudVV | ewoudvv.github.io

10th-grade student working on electronics, PCB design, and embedded hardware. Seeking a summer 2027 engineering internship with opportunities to build, measure, and debug real hardware.

EDUCATION

Lincoln-Sudbury Regional High School | Expected graduation: 2029

COMMUNITY & RADIO

- Amateur Extra radio operator, K1EVV.
- Hardware reviewer for Hack Club's Half Life program.
- New England Sci-Tech volunteer; member of the Northeast HamXposition Youth & Collegiate Activities Committee.

ENGINEERING PROJECTS

DrawBot | CoreXY drawing machine (2025–2026)

- Designed and built a half-meter-square pen plotter with CoreXY belts, NEMA17 steppers, a scotch-yoke pen lift, and Arduino Uno R4 WiFi control.
- Calibrated motion and pen travel, drew a 100 mm square, and completed a 35-minute drawing run with no BLE drops or command errors. Currently uses manual homing.

Ducktop2 | Custom laptop and battery electronics (2026)

- Designing an eight-layer motherboard and I/O boards for a 16-inch LattePanda Mu Ultra laptop, including PCIe NVMe, USB, HDMI, Ethernet, and a Wi-Fi socket.
- Designed a four-layer BQ76922 battery-management board and ISL9241 charging circuitry for a three-cell battery. Main-board routing is in progress; assembled-board tests are pending.

STM32 development board and BLDC motor controller (2026)

- Designed a 24 × 44 mm, four-layer STM32F411 board with USB-C, SPI microSD, and SWD; prepared Gerbers, BOM, and component-placement files.
- Routed a four-layer STM32G474 motor controller with DRV8353S gate drive, phase-current sensing, and protection circuitry. Both boards await physical bring-up.

StratoScience | Balloon instrumentation and image analysis (2024–2025)

- Developed Arduino/MPU9250 logging code for timestamped magnetic-field measurements on SD. Credited with the IMU recorder and downward camera on the 2024 StratoScience launch manifest.
- Worked on servo-based solar tracking and Python/OpenCV notebooks for matching and aligning balloon and satellite images.

ADDITIONAL PROJECTS

Published 3D World's Hardest Game in Unity/C# for Windows, macOS, and Linux, and nnzip, a Python text-compression tool, on PyPI. Other builds include a bootable x86 graphing-calculator OS, a 3D-printed RC tank, and Tarmo5 modifications.

TECHNICAL SKILLS

KiCad; schematic design; multilayer PCB layout; differential-pair routing; component selection; power electronics; Arduino; soldering; 3D printing; Git and Linux; basic Python and C#.