NEIV MALAVIYA

Embedded Systems Engineering Student

Arnhem, Netherlands · neiv@malaviya.info
neiv.malaviya.info · github.com/Si6gma · linkedin.com/in/neivmalaviya

Seeking graduation placement (afstudeerstage) · Feb – Jul 2028 · Mandatory curricular assignment

Dutch residence permit · No employer sponsorship required for placements in the Netherlands

EDUCATION

09/2024 – 07/2028
Arnhem, Netherlands

BSc Embedded Systems Engineering
HAN University of Applied Sciences

- **GPA:** 8.2 / 10

EXPERIENCE

09/2026 – 02/2027
The Hague, NL

Engineering Intern
Airborne Composites Automation B.V.

Starts 09/2026 · Automatic Tool Center Point (TCP) calibration for robotic composite cells

- **Developing an automatic TCP calibration routine for robotic ply placement cells,** replacing a manual multi-point touch-up with a sensor-driven pose sequence and a least-squares solve for the tool offset.

03/2026 – 08/2026
The Hague, NL

Management Trainee (Working Student)
Airborne Composites Automation B.V.

- **Sent alone to Airbus Getafe for a week as the only Airborne representative on site,** keeping the automated ply placement cell in production and clearing faults on customer hardware.
- **Automated engineering time and work-item tracking** by integrating Harvest with Jira in Python.

06/2025 – Present
Netherlands

Co-Founder & Technical Lead
HAN Competitive Robotics Team

Featherweight Competition Platform · 13-member team across electronics, mechanical, and firmware

- **Split the system across two MCUs:** an nRF52840 on Zephyr for the 2.4 GHz ESB link, and a dual-core ESP32 on FreeRTOS splitting drive and weapon across its two cores. Wrote the protocol between them.
- **Weapon runs a 100 Hz PI loop with anti-windup,** closed on hall-sensor RPM, with IRQ-driven packet handling. Five fail-safes behind it: link loss, operator killswitch, 90 and 100 C thermal, brownout, 300 ms watchdog. Each cuts weapon and drive output.

09/2024 – 12/2025
Netherlands

Chief Electronics Engineer
HAN Automotive Rally Team

Dutch Rally Championship · Led the car's electronics and a three-student subteam from 01/2025

- **Designed and validated real-time embedded instrumentation** logging 41 ECU channels at 25 Hz from a 500 kbit/s CAN bus alongside GPS and IMU data; run across 8 championship events and still in service.
- **Performed live fault diagnosis** using JTAG, CAN bus sniffing, oscilloscopes, and logic analysers, isolating timing, grounding, and signal integrity faults on the car.
- **Built the dual-core ESP32 FreeRTOS firmware behind it** (acquisition on one core, SD logging and Wi-Fi telemetry on the other), with a SPIFFS-hosted dashboard over UDP/REST/mDNS and CI-tested drivers on GitHub Actions.

PROJECTS

2025

Rally Car Cooling Digital Twin
MATLAB • Simulink • PID Control • Model-Based Development **github.com/Si6gma/clio-cooling-twin**

- **Built a validated thermal digital twin of the rally car cooling system** from 1,165 s of real MaxxECU and GPS logs, reproducing measured coolant temperature with the fan state computed by the model, not read from the data: 18/18 cycles, 1.73 C RMS against a 1.5 C target, missed and traced to limit-cycle phase drift.
- **Benchmarked a tuned PID fan controller against the car's bang-bang logic,** narrowing the temperature band from 5.1 to 3.9 C and cutting actuator travel 40%, and reported that the stock control was already adequate.

TECHNICAL SKILLS

Embedded Software: Bare-metal C/C++, ARM Cortex-M, AVR, ESP32, FreeRTOS, Zephyr RTOS
Interfaces & Buses: CAN, SPI, I²C, UART, GPIO, ADC, TCP/IP
Debugging & Validation: JTAG/SWD, Logic Analyser, Oscilloscope, CAN Bus Analysis, Fault Isolation
Digital Logic: VHDL, RTL Design, FPGA (DE10-Lite), ModelSim
Modelling & Simulation: MATLAB, Simulink, PID Control, Model-Based Development
Tools & Automation: Python, Linux, Git, GitHub Actions, Docker, PlatformIO, Jira

LANGUAGES

English (Native) • Hindi (Native) • Dutch (elementary, sitting A2 exam 11/2026)

INTERESTS

Model United Nations (19 conferences, 5 chaired, Outstanding Delegate at Harvard MUN) • Chess, engineering history