Abdellah HAYANE

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Profile: Electronics and Embedded Systems & AI Engineering Student passionate about automotive. Seeking a **technical gap year** from September 2026 in embedded systems, powertrain electronics, or vehicle control units.

Education

2024 – Present **Engineering Studies in Electronics**, ENSEEIHT, Toulouse, France
Main courses: Embedded and Digital Electronics, Microprocessors, FPGA, VHDL, C/C++ Programming, Embedded Artificial Intelligence, Analog Electronics, Electromagnetism, Advanced Mathematics, Engineering Sciences

2021 – 2024 **Preparatory Classes for Engineering Schools (CPGE)**, Morocco
Focus on: Mathematics, Physics, Chemistry, and Engineering Fundamentals

Technical Projects

High-Performance BMS Architecture Microprocessors — Toulouse, France — 2024–Present

- As BMS Project Manager for Formula Student, coordinating a team of 5 people. Responsible for defining software architecture, developing C drivers for NXP S32K3358 microcontroller, and leading technical training on microcontrollers and battery management.

EV Powertrain Inverter Study Power Electronics — Toulouse, France — 2025

- Conducted comparative analysis of inverters for electric vehicle powertrains, evaluating performance (efficiency, power density, BMS compatibility) to select the most suitable model for our architecture.

TSAL Electronic Design for Racing Vehicle Power Electronics — Toulouse, France — 2025

- Designed a Tractive System Active Light (TSAL) system after writing specifications to indicate high-voltage circuit status. Next step: complete PCB design from schematic (ORCAD PSpice simulation) to layout (KiCAD routing).

Continental Hackathon Blockchain & Innovation — Toulouse, France — 2024

- Designed *ContiChain*, a Hyperledger blockchain solution for secure data exchange in the automotive sector.

Driver Fatigue Detection System Python & AI — Rabat, Morocco — 2023–2024

- Developed an AI model for driver fatigue detection, specifically optimized for microcontroller deployment. Based on facial analysis, the system achieves 97.18% accuracy with real-time processing, designed for automotive environment integration.

Professional Experience

N7 Racing Team Electrical Department & Treasurer — Toulouse, France — 2024 – Present

- As Head of Electrical Department, supervising and coordinating all electronic projects within the club, ensuring technical consistency and deadline compliance.
- Also serving as Treasurer, responsible for budget management and financial planning.

Formula Student France Events & Dynamic Team — TRANSPOLIS, France — 2025

- Coordination of dynamic events as part of the Event/Dynamic Crew.

Skills

Programming

C, C++, Python, VHDL, MATLAB, Simulink, TensorFlow, Keras, OpenCV, Assembly

Software & Tools

Vivado, Intel Quartus, Cadence OrCAD PSpice, PySide6, Git, Capella, Gmsh, Linux, S32 Design Studio,Trello, MPLAB Microchip

Languages

English (C1) - French (C1) - Arabic (C1) - German (A2)

Skills & Certifications

BCL & B2VL Certification, Multidisciplinary Teamwork, Project Management, Technical Communication, Autonomy, Adaptability to Embedded Technologies