Rahmouni Abdellah

Engineering student - 22 years old

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SKILLS

- **Software :**
  - MATLAB
  - SIMULINK
  - STM32CubeIDE
  - Quartus
  - KiCAD
  - Code Composer Studio
  - Proteus
  - MPLAB
  - FluidSim
  - Fusion 360
  - STEP7
  - ARDUINO IDE
- **Hardware :**
  - Raspberry Pi
  - ARDUINO
  - MIPS Architecture
  - TMS320C6xxx
  - STM32
  - ESP32
  - PIC
- **Programming languages :**
  - C/C++
  - Python
  - MATLAB
  - Assembly
- **Hardware Description Language (HDL) :**
  - VHDL
- **Operating systems :**
  - UNIX
  - FreeRTOS
- **Protocoles de communication :**
  - CAN
  - LIN
  - OBDII
  - MQTT
  - UART
  - I2C
  - SPI
- **Other sechnical skills :**
  - Object-oriented programming
  - Computer vision (YOLO v8)
  - PCB design (Basic knowledge)
  - 3D design and 3D printing

LANGUES

Arabe

Français

Anglais

EXTRACURRICULAR

- **Training cell leader** in Club of the Electronics and Embedded Systems Department

PROJECTS

- **Secure CAN Driver for STM32 :**

  Development of a **CAN** driver for **STM32** with a **security layer** to ensure frame **integrity** and **authenticity**, featuring **checksum** and **secret key authentication** mechanisms.

- **Predictive Maintenance System for Connected Vehicles :**

  Development of an embedded **predictive maintenance** system for vehicles using an **ELM327 module** to acquire **OBD-II** data transmitted to a **Raspberry Pi**. Data processing via a failure prediction model and display of results on an intuitive **graphical user interface (GUI)**.

- **Control of a Two-Tank System with Simulink :**

  Modeling and **control** of a two-tank system in **Simulink**, including **transfer function identification**, cascade **PID regulation**, and **performance analysis** under saturation conditions.

- **Robot Control via EEG Signals :**

  Robot control using **ESP32** and **Python**, employing a **neural network** to interpret **EEG signals** and replicate learned movements.

- **Smart Guide for the Visually Impaired :**

  Smart guide using **Raspberry Pi 4** and **YOLO v8** for real-time object detection to assist **navigation** for the visually impaired.

- **Maze-Solving Robot :**

  Autonomous robot with **Arduino UNO**, programmed in **C++**, using the **L293D driver** and **ultrasonic sensors** to navigate a maze. A **PID controller** adjusts its trajectory for precise movement.

EDUCATION

- **Embedded Electronic Systems Engineering and Control Systems**
  National School of Applied Sciences, Marrakech (ENSA)
  2021 - Present

- **Baccalaureate - Experimental Sciences - International Track in Physical Sciences, French Option - Lycee Qualifiant Ibn Abbad - Marrakech**
  2020 - 2021
  Honors : Very Good

EXPERIENCE

Reception Host
Event Agencies
Welcoming clients at private events such as weddings, galas, conferences, etc.
2021 - Present