RAYEN BOUAFIF

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EDUCATION

- **National Institute of Applied Sciences and Technology (INSAT)** — Tunis, Tunisia
  B.S. in Industrial Computing and Automation — *Sept. 2021 – Present*
- **Technical Sciences Baccalauréat** — Kelibia, Tunisia
  Abdelaziz Khouja High School (GPA: 18.53/20 - Top 50 Nationally) — *July 2021*

EXPERIENCE

- **Embedded Systems and Control Intern** — Visteon Corporation - Tunis
  Embedded Systems / Control Systems — *July 2025*
  - Developed and implemented a temporary solution using an ESP32 to address temperature regulation issues, ensuring the stabilization of First Time Through KPI in the industrial production line.
  - Engineered a lean permanent solution incorporating fuzzy logic systems and Kalman filters to sustain KPI stability over the long term.
  - Worked with industrial communication protocols, including Modbus and SMEMA.
  - Exploring various lean management methodologies applied in the automotive industry

PROJECTS

- **Real-Time Remote Control Interface**
  Robotics / IoT — *May 2024*
  - Integrated a cascade PID control architecture on an ESP32 using C++ for a differential robot.
  - Developed an interactive GUI to adjust the system remotely and observe real-time response plots.
  - Integrated an MQTT protocol over WAN for communication.
- **GPIO Driver Development**
  Embedded Systems — *April 2024*
  - Developed a GPIO driver from scratch for STM32F4 to manage I/O, External interrupts, and other functionalities.

VOLUNTEERING WORK

- **Instructor at Aerobotix INSAT** — INSAT, Tunis
  Embedded Systems , IOT , Computer Vision — *Sept 2022 - Present*
  - Organized Embedded systems , IOT and computer vision workshops at my university

- **Logistics and Hardware Manager, IEEE INSAT** — INSAT, Tunis
  Management — *Sept 2023 - Sept 2024*
  - Implemented 5S methodology to improve workplace organization, and ensure member satisfaction.
  - Performed testing, maintenance, and repairs of hardware components to ensure their availability for upcoming events

TECHNICAL SKILLS

- **Programming:** Embedded C/C++, Python (Numpy, Pandas, OpenCV, PyTorch), Java, SQL, Assembly (x86/ARM), MATLAB
  Technologies: Linux, GIT, CAD (Solidworks), Microcontrollers (STM32, ESP32, Raspberry Pi), Real Time OS (FreeRTOS) , Digital Signal Processing (FFT, Filters)