ADIL EL GUENNOUNI

Automation, Connected Systems & Data Engineering Student (INSA Toulouse)

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OBJECTIVE & PROFILE

Graduate Engineering Student at the National Institute of Applied Sciences (INSA Toulouse) seeking a **Summer 2027 International Engineering Internship** (8 to 10 weeks, starting late June / July 2027). Profile focused on industrial automation, data processing (Python, pandas), and applied AI integration, backed by hands-on low-voltage electrical field experience (certified live troubleshooting & lockout/tagout, EN 50110 standard).

TECHNICAL EXPERTISE

Automation & Industrial Systems: Industrial PLCs (IEC 61131-3: Structured Text, SFC, Ladder), Stäubli 6-Axis robotic arm (VAL 3), Industrial supervision, Hardware buses (UART, I2C, SPI, NFC).

Data & Artificial Intelligence: Python (pandas for smart telemetry data processing and auditing), Automation scripts, Local AI models (Ollama GPU inference), Autonomous task agents.

Hardware & Prototyping: Altium Designer (2-layer PCB layout, JLCPCB manufacturing, soldering), Microcontrollers (dsPIC33/PIC16, OpenMV MicroPython), 3D CAD Fusion 360, 3D Printing (Creality K1), Laser cutting.

Electrical Safety & Agile Methods: Certified for Low-Voltage live troubleshooting & lockout/tagout (EN 50110 / B1V, B2V, BR equivalent), Agile / Scrum project methodology, Excel VBA macros.

Languages & Certifications: English (Professional Working Proficiency - Technical Training & Docs), French (Native), Certified Drone Pilot (Civil Aviation Authority), National Cyber Security Agency Certification.

PROFESSIONAL EXPERIENCE (SORÉGIES ENERGY UTILITY)

Data, Automation & Digital Projects Engineering Apprentice (M.Sc. Program) — **Sept. 2026 - Present**

Sorégies (Regional Energy Utility) — *Poitiers, France*

- **Data Audit for Smart Streetlighting (~1,700 connected cabinets):** Built Python (pandas) scripts to analyze logs and identify power cuts and network disconnects (cut audit time from 1 week to 4 hours).
- **Cabinet Location Tool:** Automated cross-referencing between street addresses and power meters to locate physical cabinets for reprogramming (cut technician search time by 3x).
- **Municipal Web Portal (Lighting, EV Infrastructure, Energy Savings):** Gathered user needs from 250 towns, created a web prototype (React 18 / Vite), and worked with developers using Scrum methodology (sprints, backlog).

Field Electrical Maintenance & Lighting Technician Apprentice (B.Tech. Program) — **Sept. 2024 - Aug. 2026**

Sorégies (Regional Energy Utility) — *Poitiers, France*

- **Electrical Field Troubleshooting:** Located and repaired electrical faults on the power distribution network (insulation defects, hardware replacement) under European low-voltage safety standards (EN 50110 / B1V, B2V, BR).
- **Cost Estimates & Jobsite Monitoring:** Prepared cost estimates, conducted site surveys, and followed work on public lighting jobsites.
- **Office Automation (VBA & Python):** Created Excel VBA macros and Python scripts to automate recurring maintenance spreadsheets and data entry.
- **Energy Saving:** Programmed smart LED drivers using **NFC** for 50% nighttime dimming.

Operational Crew Trainer & Shift Lead (Student Job) — **2021 - 2024**

McDonald's (12 to 24h/week while pursuing university degrees) — *Poitiers, France*

- Supervised floor teams of **5 to 15 crew members** during rush hours; trained and onboarded **20 to 40 new workers** on company standards, operating procedures, and safety.

TECHNICAL PROJECTS & PERSONAL ACHIEVEMENTS

Local AI Deployment & Autonomous Task Agents (Personal Project) — **Python, Ollama, GPU**

- Deployed and ran local open-weights LLMs under **Ollama** (14B and 7B on dedicated GPU) for autonomous task automation; centralized and monitored connected smart home data streams.

Autonomous Mobile Robot - National Cachan Robotics Cup — **Altium, dsPIC33/PIC16, 3D**

- Full mechatronic design in a 5-student team; designed custom power and control board in **Altium Designer** (dual microcontroller architecture with **dsPIC33 / PIC16**, manufactured via **JLCPCB**, soldering); modeled chassis in **Fusion 360** with laser cutting.

Autonomous Drone & Embedded Vision (Wildlife Conservation Challenge) — **OpenMV H7, MicroPython**

- Integrated an OpenMV H7 smart camera (MicroPython) to detect visual markers for wildlife protection (farmland bird nests); collaborated with military drone operators and national wildlife conservation volunteers.

Stäubli Robotics & International Academic Exchange (Univ. of Pavia) — **VAL 3, Stäubli Robotics Suite, English**

- Modeled 3D simulation and programmed a Stäubli 6-axis arm in **VAL 3** for automated chess gameplay (Scholar's Mate); trained Italian engineering students in English at the **University of Pavia**.

ACADEMIC EDUCATION

Master of Science in Engineering (Electrical & Control Systems Track) — **2026 - 2029 (Expected)**

National Institute of Applied Sciences (INSA Toulouse) - Graduate School of Engineering — *Toulouse, France*

Current Coursework (S5): Feedback Control Systems, Analog & Active Filters, Cache & Computer Architecture, C Programming & Data Structures, Linear Systems Modeling, Sequential Logic.

Upcoming Coursework (S6): Advanced Analog Electronics, Multilayer PCB Design & Assembly, IoT & Energy Harvesting, 4G/5G Wireless Networks, Electromagnetic Compatibility (EMC) & Thermal Design.

Bachelor of Technology in Electrical Engineering & Industrial Computing — **2023 - 2026**

University of Poitiers (Institute of Technology) - Ranked 2nd of 21 (Overall GPA: 16.3/20 - Top 10%), Ranked 1st in S4 — *Poitiers, France*

Completed Coursework: Industrial PLCs (Schneider, Siemens), Power Electronics, Embedded Microcontrollers (C, dsPIC), Altium PCB Layout, Industrial Robotics (Stäubli), Sensors & Instrumentation.

Undergraduate Studies in Applied Physics & Mathematics | High School Diploma — **2021 - 2023**

University of Poitiers - Foundations in Math & Physics (2021-2023) | Scientific Baccalauréat at Lycée Stendhal (2021, Advanced Math Honors) — *Poitiers, France*