AMINE GASMI

Electrical & Automation Engineer
Tunisian | +216 50 304 095 | gasmiaminee@gmail.com | Driving Licence B
linkedin.com/in/amine-gasmi | Portfolio: https://aminegasmi.vercel.app/

PROFESSIONAL SUMMARY

Electrical & Automation Engineer with hands-on experience in industrial automation, Siemens PLC programming, HMI integration, embedded systems, and PCB design. Experienced in improving industrial equipment reliability, quality control, and manufacturing processes through practical engineering solutions. Combines technical problem-solving with international leadership, communication, and project coordination experience gained through IEEE activities.

PROFESSIONAL EXPERIENCE

Engineering Intern: Final Year Project Feb. – Jun. 2026
Hutchinson Tunisia
- Improved a leak-testing machine: modified the PLC program and modernized the Weintek HMI, integrating a poka-yoke system as well as a scanning and archiving system for full traceability.
- Designed a custom PCB (KiCad) and programmed its microcontroller, interfacing the machine's sensors.
- Led the project end-to-end, trained operators, wrote the technical documentation and validated on the production line: full traceability and ≈80% cost savings.

Robotics Instructor Nov. 2024 – Dec. 2025
- Introduced children to robotics (Arduino, ESP32, IoT) and led projects using LEGO WeDo kits and Kodu.

Summer Internships 2021 – 2024
Technician Intern – Elevator Company (STEMAS) | Aug. – Oct. 2024
- Installation, maintenance and troubleshooting of elevator systems (wiring, triangle/star motor setups).

Summer Intern – Tunisian Electricity and Gas Company (STEG) | Jul. – Aug. 2022
- Studied the combined-cycle electricity production process and calculated turbine and pump efficiency.

Technician Intern – Electrical Building Company | Jun. – Jul. 2021
- Single-phase and three-phase electrical panel connections and diagrams.

EDUCATION

Engineering Degree in Electrical & Automation Engineering 2023 – 2026
Ecole Polytechnique de Sousse, Tunisia
- Focus areas: electrical engineering, power systems, embedded systems, industrial machine control engineering, PCB, robotics and IoT.

B.Sc. in Physics & Energy: Renewable Energy 2020 – 2023
Higher School of Science and Technology of Hammam Sousse (ESSTHS)
- Specialization: renewable energy, electrical engineering, power systems and energy efficiency.

PROJECTS

Academic Industrial Automation & Control Projects 2024 – 2026
- Developed Siemens S7-1200/1500 PLC programs with WinCC HMI/SCADA for industrial processes, applying GEMMA for operating-mode and sequence management.
- Automated motor drives, pumping stations, industrial furnaces, and traffic-light systems, implementing sequencing interlocks, safety logic, and speed control, with project simulation and validation in Factory I/O.
- Designed and tuned closed-loop PID control models in Simulink (speed, level and temperature control), analyzing step response, overshoot and settling time.

Intel Farm: Solar-Powered Smart Greenhouse May 2023
Final Year Project (Bachelor's) | Patent granted on 12/02/2025 by INNORPI
- Designed a solar-powered smart greenhouse with automated IoT monitoring and control of temperature, humidity, soil moisture and irrigation, designed to evolve with additional features such as AI-based automation.
- Related PV work (separate academic projects, 2024–2026): modeled a PV system with a DC-DC boost converter in MATLAB/Simulink and implemented PSO and P&O MPPT algorithms (50 kHz PWM), comparing convergence speed and tracking accuracy.

Embedded Systems & Multi-Protocol Communication Projects 2024 – 2026
- Developed embedded projects on Arduino, ESP32 and STM32 covering sensor interfacing, actuator control and small-scale automation, using SPI, I2C and UART.
- Implemented wireless data exchange and remote control between platforms via LoRa, BLE, Wi-Fi and RF, plus CAN bus and Modbus for industrial node communication.
- Built IoT integration flows linking master/slave platforms for monitoring and control over the local network via IP addressing.
- Designed several PCBs in Altium covering circuit layout, DC-DC converter boards, and connector/port design.

AI-Based Industrial Visual Inspection System Ongoing
- Developing an edge-AI solution for automated visual inspection and OK/NOK product classification using a Raspberry Pi and camera.

- Implementing image acquisition, preprocessing, and defect detection using Python, OpenCV, and YOLO.
- Designing Raspberry Pi–PLC communication with a Siemens S7-1200 for automated rejection of defective products.

TECHNICAL SKILLS

Programming & Electronics : C/C++, Arduino, ESP32, STM32, PIC, MPLAB, Raspberry Pi, Linux, Python, VHDL, Verilog
Automation & Supervision : Siemens TIA Portal, WinCC (HMI), Weintek, Factory I/O
Electronic & Electrical Design : KiCad, Altium, Proteus, Eplan
Computation & Simulation : MATLAB / Simulink
Communication Protocols : SPI, I2C, UART, Modbus, LoRa, BLE, Wi-Fi, RF, CAN bus
Computer Vision : OpenCV, YOLO
Energy : RetScreen, PVsyst, EES

LANGUAGES

English: fluent | French: fluent | Arabic: native

CERTIFICATES

Siemens TIA Portal · MATLAB · Simulink · DELF B2 · TOEIC B1 · Social Marketing · Solar Energy Systems · IEEE Entrepreneurship · Six Sigma Yellow Belt · EF SET English Certificate (C1 Advanced)

EXTRACURRICULAR ACTIVITIES

Vice-Chair: IEEE PES Tunisia Section Apr. 2023 – Jun. 2025

- Organized regional meetings; chaired the IEEE PES Tunisia General Meeting, 4th Edition congress (2023); chapter awarded "Best PES Student Branch Chapter in Tunisia" (2022).

Other IEEE Engagements

- PES Day Region 8 Leader (2023); Reviewer, IEEE Young Professionals (YP) Fund Committee.
- Region 8 Representative & Media Chief, IEEE MTT-S YP (2024–2026).
- Panelist and speaker at: Power Africa Congress Marrakech (2023); IEEE PES GTD Professional Chapters Training, Istanbul (2023); IEEE TSYP (2025–2026).

HOBBIES

Football, gym, camping, volunteering