
MOHAMMED ECH-CHAIBI

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PROFESSIONAL SUMMARY

Junior Automation & Mechatronics Engineer with skills in PLC programming, industrial robotics, embedded systems and computer vision. Experienced in designing automation sequences, developing HMI/PLC interfaces and producing engineering documentation (GAMP V). Strong foundation in control logic, system integration and industrial process optimization. Motivated to contribute to smart manufacturing and advanced automation projects.

WORK HISTORY

Automation engineer, 12/2025 - current

University of Limerick - Limerick

- Designing an autonomous robotic harvesting system integrating an industrial robot, vision-based plant recognition, and embedded control.
- Developing OpenCV-based alignment and readiness detection to identify harvestable plants and correct pick positioning.
- Building the hydroponic NFT monitoring system using ESP32 sensors, with real-time feedback displayed on a user interface.

Automation engineer, 10/2025 - 12/2025

University of Limerick - Limerick

- Programmed a Studio 5000 PLC to control a multi-step handling sequence for cube orientation, rotation, and inspection.
- Designed HMI screens for operation, status monitoring, alarms, and manual control, following GAMP 5 good practice principles.
- Implemented safety functions including E-stop, pause/resume logic, interlocks, and alarm handling in line with IEC 61508 concepts.

Intern - manufacturing engineer, 04/2025 - 09/2025

Flying Whales - Bordeaux

- Modeled the airship's evolving mass and calculated helium quantities across 50 assembly stages, including min/max helium scenarios, while ensuring tilt, CG, and buoyancy compliance.
- Developed original formulas to compute helium height in 14 cells and introduced a new imbalance-detection method to make the inflation process more accurate and easier to operate.
- Analyzed how factory temperature and pressure variations affect helium volume and behavior, and initiated a risk assessment to ensure the robustness of the helium filling sequence.

Intern - Lean Manager, 05/2024 - 09/2024

SITI TEA - Marrakech

- Analyzed production workflows using Lean tools to improve system efficiency and operational flow.
- Developed standardized work instructions and proposed layout and process optimizations to simplify

operations and reduce non-value-added activities.

- Performed PID tuning on a dosing system (doseur) to stabilize flow control, improve dosing accuracy, and ensure repeatable process performance.

SKILLS

- Automation & PLC: Allen-Bradley Studio 5000, Siemens TIA Portal, State machines & structured sequence design, Emergency stop logic, safety interlocks, Sensor/actuator control & wiring basics.
- Robotics: Mitsubishi RT Toolbox/Melfa Basic, Robot calibration, Robot-PLC communication, 3D Modeling.
- Software & Tools: Python, C/C++, sensor integration, MATLAB, Git, Serial TCP communication.
- Industrial engineering: Lean principles, process analysis, KPI dashboarding, workflow optimisation.
- Soft Skills: Problem-solving, Fast learning & adaptability, Analytical Thinking, Teamwork & coordination.

EDUCATION

Master of engineering: Mechatronics, 09/2025 - 08/2026

UNIVERSITY OF LIMERICK - LIMERICK

- Coursework in robotics, automation, control systems, embedded systems, and machine vision.
- Practical work with Mitsubishi industrial robots, PLCs, sensors and system integration.

Engineering Degree: Industrial Engineering, 09/2023 - 08/2025

IMT NORD EUROPE - Douai

- Focus on industrialisation, manufacturing systems, process optimisation and 3D modeling.
- Coursework in mechanical design, operations research, systems engineering and project management.
- Hands-on projects in automation, production flow analysis and prototyping.

CPGE: Engineering, 09/2021 - 09/2023

Ibn Timiya - Marrakech

- Two-year intensive preparatory programme focused on advanced mathematics, physics, and engineering fundamentals.

CERTIFICATIONS

***Lean Six Sigma Green Belt certified**, with practical experience applying process-improvement tools.

*Completed a **MOOC in Project Management**, developing skills in planning, scheduling, and risk management.

LANGUAGES

French

Fluent

English

Fluent

Spanish

Elementary

HOBBIES AND INTERESTS

- Chess / Cooking / Tennis / Traveling