



ZAKARIA EL MLILAH

MECHATRONICS ENGINEER | PRODUCT DESIGN & MANUFACTURING

Mechatronics Engineer with experience in mechanical design, product development, manufacturing processes, and technical coordination. Skilled in Design for Manufacturing (DFM), configuration management, process improvement, and cross-functional engineering coordination from design through validation.



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- Tan-tan 82000, Morocco
- UTAC Test Track Driving Certification

EDUCATION

Mechatronics Engineering Degree
ENSA TETOUAN 2019-2024

SKILLS & TOOLS

Calibration and Configuration Management

- Configuration Control & Change Management
- Cross-functional coordination
- ECU Flashing & Software Deployment
- Vehicle Diagnostics and root cause analysis

Mechatronics & Engineering Design

- Prototyping & Product Development
- Design for Manufacturing & Assembly
- GD&T Standards
- Robotic Mechanism Design

System engineering & modeling

- System definition & Requirements engineering
- Functional and structural architecture

SOFTWARE

- Design:** CATIA V5, Fusion 360, Blender
- Simulation & Modeling:** MATLAB, Simulink, Cameo, SysML.
- Automotive:** INCA, MDA, DiagAlyzer, IDVH, SAP
- Programming:** Python
- Prototyping:** Cura, FDM 3D Printing

CERTIFICATS

- Autodesk CAD/CAM/CAE** for Mechanical Engineering
- Manufacturing Process Selection And Design For Manufacturing (**DFM**)
- Generative Design for Additive Manufacturing
- Automotive Product Design Using **CATIA**
- Introduction to Model-Based Systems Engineering (**MBSE**)

LANGUAGES

- Arabic** Native.
- English** Advanced
- French** Intermediate
- German** Basic

WORK EXPERIENCE



Mechanical Design Engineer | Internal Projects

Ennopulse

Since July 2025

- Designed and optimized vehicle seat belts simulator components for crash and safety validation.
- Optimised models using CAE simulation feedback to improve structural performance and manufacturability.



Configuration Management & Testing Engineer

Ennopulse for FEV

Since Jul 2024

In-Field Configuration Management & Testing Engineer *MMAC, Ouedzem Since Feb 2026*

- Coordinated fleet validation activities involving powertrain calibration, workshop, logistics, suppliers, and technical centers to ensure configuration compliance and vehicle readiness for validation campaigns.
- Managed ECU flashing, telecoding, and calibration deployment while maintaining software and hardware configuration control and traceability using SAP & internal tools..
- Performed diagnostics, root-cause analysis, and functional verification using ETAS tools and Exxotest to support issue resolution and configuration validation.

Fleet Configuration Management - Technical Referent

Casablanca Jul 2025 - Jan 2026

- Served as Technical Referent for the Configuration Management team, contributing to a 20% increase in FTR and 5% reduction in NFTR.
- Coordinated with cross-functional stakeholders to ensure deliverables met project requirements and configuration standards.
- Reviewed team deliverables, mentored new members, and standardized internal documentation to improve quality and onboarding.
- Developed KPI dashboards to monitor quality, productivity, and team performance.
- Managed 400+ deliverables (~26% of the team's annual workload) while consistently meeting quality and project objectives.

Hardware Configuration Management Engineer

Casablanca Jul 2024 - June 2025

- Coordinated with calibration engineers, workshop teams, and logistics to plan, implement, and track vehicle hardware modifications across ICE, hybrid, and electric vehicle programs.
- Verified hardware modification requirements against vehicle configurations using parts drawings, technical documentation, BOMs, and internal configuration management tools.
- Ranked highest in workload volume within a team of five, completing 27% of the team's annual activity while maintaining project schedules and configuration accuracy.



End of Study Internship | SCR Catalyst Modelisation & Calibration

FEV North Africa

Casablanca Feb 2024 - Aug 2024

- Modeled SCR catalyst for exhaust NOx reduction using MATLAB/Simulink, including calibration map generation for engine and SCR control.
- Calibrated engine and SCR tables to improve NOx emissions reduction while maintaining engine performance.



Application Internship | ADAS MBSE system engineering

Cagimini Engineering

Casablanca Aug 2023 - Sept 2023

- Modelled an ADAS collision avoidance system using MBSE approach, from system requirements definition to high-level and low-level system structural, and functional architecture design with Cameo and SysML.

PROJECTS

Educational 6-axis Robot Arm Modeling

May 2023 - Aug 2024

- Designed a 6-axis robotic manipulator as an educational platform for schools and students to gain hands-on experience in robotics, motion control and power transmission.
- Optimized the mechanical structure using FEA-based static stress analysis to improve stiffness, rigidity, and structural performance.

Automotive Interior Component Design

Since March 2026

- Designed-engineered damaged or unavailable vehicle interior trim parts using CAD and 3D printing.
- Optimized component geometry for 3D printing while maintaining fit and functionality.
- Selected appropriate materials to achieve heat resistance and long term durability