

# Hana BEN ALAYA

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## Experience

### ACTIIS TUNIS

*Piping Flexibility Analysis Engineer*

April 2025 – October 2025

Tunisia

- Performed flexibility studies and hydraulic analyses of piping networks using CAESAR II, in compliance with EN 13480 and ASME B31.3 codes.
- Modelled piping networks, conducted static and dynamic analyses for various load cases, and defined the support system.

### WE MAKE 3D

*Electromechanical Engineer*

July 2024 – August 2024

Tunisia

- Designed a storage, drying, and heating box for filament using SolidWorks.
- Programmed a filament heating system using Arduino.

### GEFTECH

*Electromechanical Engineer*

July 2023

Tunisia

- Studied and designed an aircraft turbine blade part using SolidWorks.
- Prepared a manufacturing process plan with G-code.

### Les Ciments de Bizerte

*Technician*

Feb 2022 – June 2022

Tunisia

- Studied and designed a combined system including a pallet conveyor and a lifting table using SolidWorks.

### Ennakel Automobile

*Technician (Worker Internship)*

Jan 2020 – Feb 2020

Tunisia

## Projects

### CNC Machine for Acoustic Foam Cutting | G-code, ESP32, ISIS, Universal G-code Sender, SolidWorks

- Created 3D models and simulations for a CNC machine designed to cut acoustic foam using SolidWorks.
- Implemented GRBL for CNC machine control, improving the precision of the manufacturing process.

### Filament Drying and Heating Storage Box | PlatformIO, ISIS, SolidWorks

- Designed and simulated a 3D heated storage box for filament drying using SolidWorks.
- Developed electronic wiring diagrams using ISIS.
- Programmed the system with PlatformIO (Arduino) to maintain optimal drying conditions.

## Certificates

### SolidWorks Associate – Mechanical Design (CSWA)

Higher Institute of Technological Studies of Kairouan

April 28, 2022

### Applications of AI for Predictive Maintenance – NVIDIA

ESPRIT Private Higher School of Engineering and Technology, Tunis

October 24, 2024

## Technical Skills

**Programming Languages:** C, C++, Python, MATLAB, VHDL

**Mechanical CAD:** SolidWorks, AutoCAD, CAESAR II

**Electrical:** PSIM, Proteus

**Embedded Systems:** ESP32, STM32CubeMX, Quartus, Arduino, Node-RED, Altium Designer, WINDEV

**Industrial Automation:** TIA Portal V16, Factory IO

**ERP / Industrial Management:** SAP

## Education

### Private Higher School of Engineering and Technology (ESPRIT)

*Electromechanical Engineering*

Tunisia

### Higher Institute of Technological Studies of Kairouan

*Advanced Technician in Mechanical Engineering*

Tunisia