RAFI Nasrallah

Engineering Student

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Profile

Aspiring Electrical Engineer driven by curiosity and a passion for technical challenges. Currently seeking a stimulating 6-month End-of-Studies Internship (Capstone Project), I aim to leverage my adaptability and eagerness to learn to contribute to your innovative projects.

Education

2023 – 2026 **Engineering Degree**, *ENSET*, Mohammedia
Major: Electrical Engineering and Industrial Systems Control (GECSI).

2022 – 2023 **Bachelor in Physical Sciences (Electronics)**, *Faculty of Sciences Ben Msik*, Casablanca

2020 – 2022 **Associate Degree in Physics (DEUG)**, *Faculty of Sciences Ben Msik*, Casablanca

2019 – 2020 **Technical Baccalaureate (High School Diploma)**, *Technical High School*, Mohammedia
Electrical Option.

Professional Experience

Jul 2025 – Sep 2025 **Engineering Internship - Automation & Design**, *SMCV*, Mohammedia
- Programming and supervision of a plastic injection machine.
- Design and integration of a mechanical arm for nut insertion process optimization.
- Complete study, design, and automation of a hot nut insertion press.

Jul 2024 – Aug 2024 **Technical Internship - Electrical Grid**, *ONEE*, Mohammedia
- Analysis of Siemens digital relays and development of testing procedures.

Technical Projects

Electronics Reverse Engineering, Simulation, and Optimization of a Phase-Controlled Triac Dimmer for a 1.4 kW Universal Motor.

Design and simulation: Class D Amplifier, Single-phase SPWM Inverter, Regulated Boost Converter, and Filtered Rectifier.

Embedded Sys. Control and supervision of a pump using ESP32 and web interface.

Design and PCB implementation of an L-C Meter.

Automation Programming and supervision of a Smart Conveyor (PLCnext PLC, Schneider VFD).

Reprogramming of a mattress spring assembly machine (Delta PLC).

Sizing Sizing of a pumping station (Power balance, cabling) and standard compliance.

Modeling Design of an orbital autopilot (Luenberger Observer + State Feedback) for stabilization.

Non-linear control (Backstepping Law) of a Micro-Grid wind turbine.

Output feedback control for fast charging (CC-CV) of Li-ion batteries in a grid-connected storage system.

Num. Simulation Finite Element Analysis of TE10 mode propagation (Waveguide).

Technical Skills

Expertise Industrial Automation & Supervision, Power Electronics & Electrical Grids, Embedded Systems & IoT, Modeling & Advanced Control.

Software Siemens TIA Portal, PLCnext Engineer, MATLAB/Simulink, Caneco BT, ETAP, Proteus, PyTorch, Google Colab, Ansys (HFSS/Mechanical), Autodesk Inventor, AutoCAD, Fusion 360.

Programming	C/C++, Python, Ladder/SCL, VHDL.
Languages	**Arabic** (Native), **English** (C2 - Advanced), **French** (B2 - Intermediate).