Farah Kssayrawi

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About

I'm a Mechanical Engineering student specializing in structures and materials, with a strong interest in systems that are essential to daily life—such as energy supply, fuel transport, and infrastructure reliability. I'm passionate about designing and improving mechanical systems that are not only efficient, but also durable and safe in real-world conditions. I'm especially drawn to roles where precision, responsibility, and long-term performance are key—like those in energy distribution and industrial operations. As a woman in engineering, I'm proud to bring a unique perspective to the field. I enjoy continuous learning, solving challenges, and working collaboratively to create innovative and reliable solutions.

EDUCATION

Lebanese University, Lebanon   Sep 2019 – Present
Final year Mechanical Engineering student (Structures and Materials).

PROFESSIONAL EXPERIENCE

Enumerator, BOT, Lebanon   Aug 2022 – Sep 2022
- Collect data remotely in collaboration with UNICEF.

Private Tutor, Lebanon   Sep 2022 – Aug 2023
- For elementary school students (Mathematics, Physics, Chemistry).

Participant for FGDs, BOT, Lebanon   June 2023
- Discussing career topics, and our opinion about career in Lebanon.

Vehicle repair, Lebanon   Aug 2023 – Sep 2023
- Gained hands-on experience working with various car components, including engines, valves, camshafts, fuel pumps, and gearboxes along with their mechanical parts (gears, shafts, bearings).
- Learned about different engine oil grades and viscosities (e.g., SAE 5W-30, 10W-40), understanding their importance for engine performance and longevity.
- Assisted in oil changes, ensuring the correct oil type and viscosity were used according to manufacturer specifications to optimize engine function.

Mechanical Engineer Intern, AECENAR, Lebanon   Aug 2024 – Sep 2024
- Utilizing FreeCAD software to design mechanical systems such as heat exchangers, exhaust fans, and screw conveyors.
- Contributing to the conceptual design and development of the incinerator for the Mirador project.
- Designing and optimizing the reciprocating grate system using FreeCAD for the efficient waste processing.

SAVOTEC, Lebanon   June 2025 – Present
- Gained hands-on training in welding across multiple positions, including Flat (F) and Groove (G) welds.
- Performed both single-pass and multi-pass welding techniques on various joint types.
- Learned and applied proper electrode selection and nomenclature based on welding procedures (e.g., E6013, E7018).
- Followed strict industrial safety standards to ensure safe welding operations, including wearing personal protective equipment (PPE) such as welding gloves, welding helmets with proper shading, flame-resistant clothing.
- Ensured proper ventilation in the workspace and maintained awareness of fire hazards by keeping flammable materials away from the welding area.
- Operated oxy-fuel gas cutting torches to accurately cut and shape steel materials. Proficient in adjusting gas and oxygen flow rates and flame settings to produce clean, precise cuts.

PROJECTS

Conveyor System Design | Lebanese University
- Calculating power, torque, and stresses for system components.
- Selecting appropriate materials.
- Shaft and bearing design (force analysis and selection of bearings to support system loads).

Microcontroller Embedded Systems Project | Lebanese University
- Implemented and analyzed interrupt handling in PIC24F microcontroller.
- Developed three interrupt-based applications:
  - Internal Interrupt Timer for periodic task execution.
  - External Interrupt (Push Button) for real-time event handling.
  - External Interrupt (Switch Cases) for multi-condition response.

Robotic Arm with Composite Materials | Lebanese University
- Designed a robotic arm to lift up to 150 kg using composite materials.
- Analyzed mechanical stresses like tension, compression, and bending to ensure safety and performance.
- Replaced steel with lightweight materials to reduce weight and improve strength.

Plumbing & HVAC | Lebanese University
Working on the design and calculation of plumbing systems for a two-floor residential villa with a basement, focusing on:
- Drainage Systems.
- Rainwater Systems.
- Water Supply Systems.
- Heating Systems.
- Ventilation Systems.
- AC Systems.

Structural Analysis of a Solar Carport | Lebanese University
- Conducted structural analysis of a solar carport integrated with photovoltaic panels using Robot Structural Analysis. Evaluated stability under various loads (dead, live, wind, and snow) while ensuring compliance with building codes. Implemented a Work Breakdown Structure (WBS) for efficient execution and used Primavera P6 for scheduling and resource management.

Entrepreneurship & Innovation Seminar | Lebanese University
- Presented PathSmart, an AI-driven smart wheelchair designed to enhance mobility for individuals with physical disabilities.
- Covered market analysis, business model development, and social & environmental impact.
- Proposed AI-powered navigation, obstacle detection, and real-time GPS tracking for enhanced safety and independence.
- Explored partnerships with hospitals and NGOs to expand accessibility and market reach.

VOLUNTEERING EXPERIENCE

Volunteer, ICA, Lebanon   Jan 2024 – Dec 2024
- Distribute clothes and food boxes for those in need and provide them with help.
- Doing activities for the children.

Volunteer, Sakf1 Initiative, Lebanon   Sep 2024 – Present
- Help find housing for families displaced by the war.
- Work with other organizations to provide basic needs like food and medical care.
- Handle paperwork and organize housing arrangements.

Volunteer, Utopia, Lebanon   March 2025

- Distribute clothes and food boxes for those in need and provide them with help.

Volunteer, SHiFT, Lebanon   March 2025 – Present

- Engaged in the Yard Youth Platform, contributing to youth-led projects.
- Attended workshops on awareness, personal development, and community engagement.

TECHNICAL SKILLS & LANGUAGES

Tools & Programming Languages: C#, C, Assembly.

Technology: Multisim, MATLAB, AutoCAD, Robot Structural Analysis, LabView, Microsoft Office, COMSOL, SolidWorks, PRIMAVERA, fluidSIM Pneumatics, FreeCAD, SAP2000, Abaqus, Revit, SURFCAM.

Languages: **Arabic**: *Native,* **English**: *Intermediate,* **French**: *Intermediate*