

Ahmed Mahgoub

Mechanical Design Engineer

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Education

2017 – 2022

Bachelor of Science.

Faculty of Engineering, Ain Shams University

- Major: Mechanical Power Engineering
- Graduation Project: Design and Manufacturing Micro Gas Turbine (Jet Engine).

2022– 2023

Full Embedded System Diploma

Under the supervision of Eng. Mohamed Abd El-Basset, Principal Embedded Software Engineer at Valeo

Content Includes:

- Programming: C,C++, Data Structures
- AVR MCU Peripherals: GPIO, ADC, Timers, Interrupts, EEPROM, ICU

Experience

Feb 2025 - Present

Mechanical Design Engineer

Elsewedy Electric - Egypt



R&D Mechanical Engineer at Elsewedy Electric – Power Transformer Division, specializing in transformer tank design and analysis. Responsible for 3D modeling using SolidWorks and AutoCAD, and structural/thermal simulation using ANSYS. Contribute to technical documentation, tender preparation, and cross-functional collaboration to ensure compliance, manufacturability, and performance.

Jul 2024 - Feb 2025

Research and Development Engineer (R&D)

Carrier, Midea - Egypt



Design AC refrigeration systems, simulate circuits, and align projects with schedules. Develop sourcing strategies and provide technical support using 2D and 3D modeling software for design and simulation.

Jun 2023- Jun 2024

Mechanical Design Engineer

Egypt's Future for Sustainable Development Agency- Egypt



Managed design reviews and Bill of Quantities for armed forces projects.

Sep 2023- 2024

Mechanical Design Engineer: Provided mechanical design services for various projects in Egypt and KSA, specializing in MEP projects and robotics and other solutions.

Jun 2022- Jun 2023

Private instructor:

Taught courses in Stress Analysis, Theory of Machine, Electronics, and Engineering Physics to undergraduate students.

Software Skills

- Microsoft Office package (Word, Excel, PowerPoint)
- AutoCAD \ Revit
- Inventor
- SolidWorks (Modeling, Assembly, Stress Analysis, Thermal Analysis)
- Ansys Fluent, Ansys Thermal, Ansys Mechanical
- Matalab \ Simulink
- C, C++, python

Internship

Sep 2022-Nov 2022 (Certified)	Internship at Shaker Consultancy Group: Assisted with firefighting, plumbing, and medical gases systems.
Aug 2022-sep 2022 (Certified)	Internship at Enppi (Engineering for the Petroleum & Process): Received technical training in static equipment, rotating equipment, material selection, piping, and project management.
Sep 2021-Oct 2021	Internship at proservice company as a mep site engineer

Projects

2021– 2022	Graduation Project: Micro Gas Turbine (Jet Engine) Designed and manufactured a Micro Gas Turbine with main parts including a compressor, combustion chamber, turbine disk. <ul style="list-style-type: none">• Developed a mathematical model for combustion chamber calculations using EES software.• Conducted thermal expansion simulations for combustion chamber materials using SolidWorks.• Utilized Ansys Fluent for CFD simulations to study air distribution in the combustor and compressor performance.• Performed stress analysis for turbine blades using Ansys Mechanical and SolidWorks
Nov 2020-Apr 2021	Humanoid Robot As part of a freelance project, designed and manufactured a Humanoid Robot intended for nursing duties at Ain Shams Specialist Hospital. The project involved creating the robot from scratch, employing both traditional mechanical methods and 3D printing for various components. Currently, the robot is undergoing implementation at the hospital. Responsibilities included: <ul style="list-style-type: none">• Mechanical design and modeling using SolidWorks software.• Calculating motor specifications and determining speed reduction methods.• Overseeing the implementation and manufacture of most components.
Sept 2021-May2022	Systems for Desert Reclamation in West-West Minya Egypt.
3 rd mech. project	Pumping Station design.
2 nd mech. project	Permanent Magnet Generator.
1 st mech. project	Aluminum Vice.

Volunteer Experience

Resala Charity Organization

Cairo, Egypt

- Collaborated with a team to plan and execute charity events and fundraising activities.

Extracurricular Activities

- Head at Asu Elite Student activity.
- Supply Chain Member, IDT

Languages Skills

- Arabic (mother tongue)
- English (advanced)