

Ahmed Fathy Abdelkhalek

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Work Experience

Design Engineer Team Lead

Aug 2025 - Present

FabriHub, Full-time

Cairo, Egypt

- Leading a team of 4 design engineers to achieve an 80% project delivery rate.
- Managing the design-to-quote pipeline by communicating with other departments to define client requirements and assess DFM, costs, and feasibility.

Teaching Assistant

Sep 2024 - Jul 2025

The German University in Cairo, Full-time

Cairo, Egypt

- Taught 300+ students in several courses including Advanced CNC, Industrial Automation, CAD/CAM, and Electric Circuits II.
- Assisted in the preparation of course content, quizzes, and exams for the aforementioned courses.

GUC-IAS Workshop: Cooperation of Heterogenous Agents in Industrial Application

Nov 2024

University of Stuttgart

Stuttgart, Germany

- Integrated 3 robots, a Unitree Go1, TurtleBot, and Franka Emika Panda, for collaborative operations to perform sequential object handovers.
- Led the Unitree Go1 team, guiding, coaching, and directing team members to help achieve the aforementioned task.

Mechatronics Technical Engineer, KUKA Department

Jul 2024 - Sep 2024

Smart Systems, Full-time

Cairo, Egypt

- Developed automated solutions for different applications, including bathtub spray painting and pick and place, using KUKA robots and their simulation platform, KUKA.Sim.
- Implemented 12+ designs for numerous projects, including robotic cells, calibration tools, and robot teaching tables.

Engineering Design and 3D Printing Services

Jul 2022 - May 2024

Self-employed, Part-time

Cairo, Egypt

- Designed, manufactured, and tuned a Delta robot 3D printer that is capable of ± 0.15 mm tolerances.
- Provided design and 3D printing services for local clients in Egypt to accelerate prototyping phases.

Education

MSc in Engineering and Material Science, Mechatronics Department

Feb 2024 - Nov 2025

The German University in Cairo

Cairo, Egypt

- Thesis grade:** Excellent (1.0) **Overall grade:** Excellent (1.0)

BSc in Engineering and Material Science, Mechatronics Department

Sep 2018 - Jun 2023

The German University in Cairo

Cairo, Egypt

- Thesis grade:** Excellent (1.0) **Overall grade:** Very Good (1.8)

Skills

CAD and Electronics: SolidWorks, AutoCAD, KiCad

Simulation: Simulink, Simscape Multibody, Gazebo Classic, ANSYS, KUKA.Sim


Programming Languages: Python, MATLAB, C++, , KUKA Robot Language (KRL)

Frameworks & Developer Tools: ROS1, Linux, Git, \LaTeX

Languages: Arabic (Native), English (C1), German (A2)

Publications

A. Fathy, O. M. Shehata and E. -S. I. Morgan, "Development and Validation of Multi-Model Miniature Delta Robot Platform for Precise Manipulation Tasks," 2025 6th International Conference on Control, Robotics and Intelligent System (CCRIS), Guangzhou, China, 2025 

A. Fathy, M. Ashraf and A. El-Badawy, "Computed torque control of a prismatic-input delta parallel robot," 2022 4th Novel Intelligent and Leading Emerging Sciences Conference (NILES), Giza, Egypt, 2022 

Honors and Awards

3rd Best Paper Award

2022 4th Novel Intelligent and Leading Emerging Sciences Conference (NILES)

Oct 2022

Giza, Egypt

Certifications

SOLIDWORKS Additive Manufacturing Associate | Dassault Systèmes 


Jun 2025

SOLIDWORKS CAD Design Professional | Dassault Systèmes 


Apr 2025

SOLIDWORKS CAD Design Associate | Dassault Systèmes

Apr 2025

McKinsey Forward Program | McKinsey & Company 

Jul 2024

Computer Vision for Engineering and Science Specialization | Mathworks 

Jun 2024

State Estimation and Localization for Self-Driving Cars | University of Toronto 

Nov 2023

Introduction to Self-Driving Cars | University of Toronto 

Oct 2023