

# Mohamed Tarek El-Demerdash

## *Mechatronics & MEP Engineer*

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### SUMMARY

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Mechatronics Engineer with hands-on experience in industrial maintenance and a solid foundation in MEP systems including HVAC, Firefighting, and Plumbing. Skilled in mechanical design, AutoCAD drafting, and load calculations using HAP v6.2. Experienced in supporting production operations and equipment maintenance in industrial environments. Seeking a junior MEP or Mechatronics engineering role in construction or industrial sectors.

### WORK EXPERIENCE

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#### **Blue Fields Company (SPECTRA)**

June 2025 – November 2025

##### *Maintenance & Production Supervision Engineer*

- Supervised industrial production lines to ensure operational efficiency and product quality.
- Performed routine and corrective maintenance for specialized industrial machinery supplied to international clients.
- Conducted quality control inspections and monitored final assembly processes prior to equipment delivery.
- Coordinated technical support between engineering and operations teams, reducing equipment malfunction response time by 20%.
- Assisted in troubleshooting mechanical and electromechanical system issues to improve system reliability.

### TECHNICAL TRAINING & PROJECTS

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#### **Professional MEP Engineering Training**

- Performed basic HVAC cooling load calculations for residential projects using HAP v6.2.
- Produced mechanical shop drawings and layouts using AutoCAD and Autofluid.
- Completed introductory firefighting system design and basic hydraulic calculations using Elite Fire.
- Gained basic exposure to Revit MEP for mechanical modeling and BIM fundamentals.

#### **Graduation Project:**

##### **Autonomous Window Cleaning Robot Lead Design Engineer**

July 2024 – February 2025

- Designed an autonomous window-cleaning robot using an impeller-based suction system for vertical adhesion.
- Developed a timing-belt-driven locomotion mechanism to enhance stability and movement accuracy.
- Implemented embedded control systems for motion control and safety operations.
- Achieved high academic evaluation for innovative mechanical design and engineering problem-solving.

## EDUCATION

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### Bachelor of Engineering in Mechatronics

Tanta University | 2020 – 2025

- **GPA:** 3.36 / 4.0
- Completed the 5-year engineering program in 4.5 years (Accelerated Completion).

## TECHNICAL SKILLS

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### MEP Software:

AutoCAD, HAP v6.2, Elite Fire, Autofluid, Duct & Pipe Sizers, Revit MEP (Basic)

### Mechanical & Mechatronics:

SolidWorks, MATLAB, Proteus

### Programming:

C++, Embedded C, Python

### Operating Systems:

Linux (Ubuntu – Basic)

## CERTIFICATION

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- AI (Artificial Intelligence) course from Zewail University, Automotive.
- Mechanics course from Engovation.
- Certified in Project Management from UCCD.

## LANGUAGES

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### Arabic

Native

### English

Advanced (B2)

### German

Basic (A2)