



United Arab Emirates, Abu Dhabi +971566113381 b\_aljazzar@yahoo.com Nationality: Palestinian

## Mechatronics Engineer / Electromechanical Engineer/Robotics Engineer

As a Mechatronics Engineer with 8 years of experience, I am an expert in 3D design, complex system analysis and modifications, and Python development. I have a solid educational background and research experience as a research assistant at UAE University. I have built a Humanoid robot named "Bu Saif" and contributed to a patent (US11573635) for a face mask with EMG sensors for communication. I possess excellent communication and leadership skills and have a passion for robotics and automation. I am confident that I can bring innovation, quality, and creativity to any organization.

## PUBLICATIONS

United States Patent 11573635: Face mask for accurate location of sensors relative to a user's face, a communication enabling face mask, and a communication system including the face mask.

<https://patentimages.storage.googleapis.com/73/15/54/9ddd67aef63072/US11573635.pdf>

## WORK EXPERIENCE

### Mechatronics Engineer

Jun 2021 - Present

Tatweer Middle East and Africa, Abu Dhabi

Mechatronics Engineer Consultant at the Manufacturing Innovation Laboratory at the Ministry of Interior in Abu Dhabi:

- Contribute to developing innovative solutions for the Ministry of Interior's challenges.
- Work on preliminary designs for innovative ideas to improve efficiency and productivity.
- Utilize Python development skills to create custom software solutions for various projects. Develop and implement embedded systems for the Ministry's various projects.
- Hold training courses and workshops for the Ministry's employees to improve their technical skills and knowledge.
- Collaborate with cross-functional teams to ensure seamless integration of mechatronic systems and solutions.
- Stay up-to-date with the latest industry trends and advancements in mechatronics engineering to ensure the Ministry's systems and solutions are cutting-edge and efficient.
- Manage and prioritize tasks and projects effectively to ensure timely and successful completion. Provide technical support and guidance to the Ministry's teams and stakeholders.
- Maintain high levels of professionalism and ethical standards while carrying out duties and responsibilities.

### Research Assistant

May 2019 - May 2021

United Arab Emirates University, College of Information Technology., Al Ain, United Arab Emirates

- In charge of the main research project about a humanoid Robot called Bu-Saif. ([Details mention in achievements](#))
- In charge of prototyping 3D designs.
- Helped in several university events coordinating robots.
- I have developed prototypes affordably and quickly manufactured by 3D printing aimed to reduce the shortage of ventilators due to the COVID-19 pandemic.
- I developed prototypes and a product now available in the market for changing the elevator's touch buttons to touchless, avoiding the COVID-19 pandemic.
- contributed to a patent (US11573635) for a face mask with EMG sensors for communication.

### Mechatronics Engineer

Nov 2018 - Apr 2019

- Fadel Al Dhaheri General Trading, Dubai, United Arab Emirates maintenance for massage chairs.
- maintenance for toy machines.
- machine maintenance for motherboards.

Flash Tech Company, Gaza, Palestine

- Designing maintenance strategies, procedures, and methods. Monitoring and controlling maintenance costs.
  - Calculate the electrical loads of houses.
  - Install solar cells on platforms above surfaces.
  - Assembling control box for solar cells, inverters, and batteries. Maintenance of automatic control of the machine.
  - Development of PLC machines and programming.
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## EDUCATION AND QUALIFICATIONS

**BSc in Mechatronics Engineering**

Oct 2011 - May 2017

Al-Azhar University-Gaza, Gaza, Palestine

**Mechatronics** engineering is a multidisciplinary field that combines principles of mechanical, electrical, and computer engineering to create complex systems that are efficient, reliable, and versatile.

The graduation project "Shrimp Rover Robot" was explaining the meaning of Mechatronics, as it was a robot combining Mechanics, Electronics, and Control.

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## ACHIEVEMENTS

**Busaif Humanoid Robot 2020-2021:**

I built a Python program on Bu Saif to perform a mini-mental state examination (MMSE), the program includes a set of questions that the robot Bo Saif asks the patient and automatically evaluates the answers, works to read the attention and interaction of the person in front of him, and calculates the time the patient took to respond to the question, and we get a memorandum of understanding with Dubai health authority, to collaborate between UAE University and Dubai health authority to develop on Bu Saif robot and contribution to the treatment of the elderly who suffer from cognitive functions.

**Meta Touch project 2020:**

Developed prototypes and a product now available in the market for changing the elevator's touch buttons to touchless, avoiding the COVID-19 pandemic.

**5TH JOINT UAE SYMPOSIUM ON SOCIAL ROBOTICS (JSSR2020):**

I was an Organizer and was in charge of logistics at the conference.

This event features a multidisciplinary program that brings together renowned developers, roboticists, and social scientists from across the globe to discuss the state of the art in social robotics.

<https://conferences.uaeu.ac.ae/jssr2020/en/index.shtml>

**Busaif Humanoid Robot 2019:**

I have built the Humanoid Intelligent Robot "Bu Saif" from scratch, which has been presented at GITEX 2019 Exhibition in Dubai, it's based on the Natural Language Processing Program (python programming), which gave him the ability to understand Arabic human text, and makes him respond to the person in front of him. Bu Saif has a head made from silicon that looks like a human head with actuators inside it, and a body with arms, to give him the ability to act like a real human.

**Shrimp Rover Robot 2016:**

It is based on the technology that designed certain mechanical mechanisms and contains six wheels each one of which has an independent motor mounted to it that allows it to move like shrimp to overcome obstacles.

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## SKILLS

Microsoft Office	Expert
SolidWorks 3D Design	Expert
Fusion 360 3D Design	Expert

Python Programming	Experienced
Autodesk AutoCAD	Skillful
ROS (Robot Operating System)	Skillful
Robotic	Experienced
Proteus	Expert
CNC Machines	Experienced
Laser cutting machines	Expert
3D printing machine	Expert
Electronics hardware	Expert
Embedded system	Expert

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## LANGUAGES

English	Advanced
Arabic	Native

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## INTERESTS

Drawing, 3D Designing, kung fu, Robotics

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## REFERENCES

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