



Mazen Mohsen

Date of birth: 06/08/2001 | **Nationality:** Egyptian | **Phone number:**

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WORK EXPERIENCE

04/2023 – CURRENT Nuremberg, Germany

CHIEF ROBOTICS SCIENTIST ISENTO GMBH

Managing the robotics research division at Isento, reporting directly to CEO

- Developing the robot from a concept to a ready for market stable version
- Growing software team (cerebra) including 6 software developers to create a web application for interacting with the robot in addition to mentoring multiple interns
- Designing ROS system architecture and integrating with cerebra application with CEO
- Facilitating workshops to involve other departments in company in development and decision making
- Awarded for common good use of AI by Bundesministerium fur Arbeit in Berlin
- Finalist in 8th Digicon Munchen digital innovation award

08/2022 – 04/2023 Nuremberg, Germany

ROBOTICS SCIENTIST ISENTO GMBH

As the first employee in the research department responsible for developing the first affordable humanoid robot; PIB, I had to create a solid base for the project to build upon, here are some of my achievements:

- Designed multiple joints including elbow, wrist, thumb and partially neck.
- Designed a new hand using half the number of motors in the old design thus reducing cost and power.
- Designed and implemented the whole electronic and power system of the robot.
- Worked on conceptual interactive synthetic skin, including its physical design, electronic chips and code for interfacing.
- Developed software basis of Pib, including setup scripts setting up ROS, Depth-AI and Cerebra, face tracking using open CV and facilitated communication between Rpi and Tinkerforge using Python APIs.
- Created all documentation for Pib including: Building manuals, printing tutorials, software tutorials and confluence pages for working strategy
- Participated in multiple fairs including maker faire Hannover and Dedacta

03/2022 – 08/2022 Remote, Australia

LEAD COMPLIANCE E-LEARNING ENGINEER CCST

Responsible for creation of safety and compliance courses for workers and personnel in factories.

- Created 8+ modules for dealing with machinery and vehicles in a safe way
- Participated in implementing the modules with online Moodle using AWS

05/2021 – 02/2022 Remote, United States

LEAD IOT INSTRUCTOR CODING DOJO

Part of the Internet of things bootcamp teaching team as an instructor.

- Participated in delivering training in Arduino, Rpi, Python, Machine learning and AWS.
- Created recorded videos for networking interfaces.
- Mentored one of the 3 graduating teams for their final project: a smart city.
- Created curriculum for blockchain, cybersecurity and FinTech bootcamps.

02/2021 – 05/2021 Remote, Russia

CYBER-PHYSICAL SYSTEMS RESEARCHER INNOPOLIS UNIVERSITY/LABORATORY OF CYBER-PHYSICAL SYSTEMS

Researched reinventing wheels for wheelchairs that would allow the disabled to ascend stairs and steep places that would be nearly impossible without human aid.

- Designed a mechanism that turns wheels of the wheelchair to feet and vice versa.
- Created control system and computer program to facilitate this movement.

01/2018 – 03/2021 Cairo, Egypt

VARIOUS POSITIONS SNAPOLOGY / EARTH ACADEMY / ETC.

Various entry to mid-level positions as a mechanical engineer and robotics courses instructor

EDUCATION AND TRAINING

01/2023 – 01/2025

MASTER OF ARTIFICIAL INTELLIGENCE University of Essex

Field of study Machine learning, Numerical analysis and R programming, Intelligent agents, Research methods, Knowledge representation and reasoning

08/2023

EXECUTIVE CERTIFICATE: AUTHENTIC LEADERSHIP AND BUSINESS ETHICS David Eccles business school - University of Utah

Recipient of Daniels fund scholarship (merit based)

09/2019 – CURRENT

BACHELOR OF MECHATRONICS ENGINEERING Arab academy science and technology

Field of study Mechanical design principles including stress analysis, material science and mechanics, Embedded programming including Arduino, Esp32 and Node MCU, CAD, manufacturing and 3D printing, Circuitry and electronics engineering, Natural sciences, mathematics and statistics

05/2023 – 07/2023

RAPID PROTOTYPING USING 3D PRINTING SPECIALIZATION Arizona state university / Coursera

Courses taught in specialization:

- Engineering and product design processes
- Prototyping
- 3D Printing Technology Deep Dive and Use Cases

06/2023 – CURRENT

MODERN ROBOTICS SPECIALIZATION Northwestern university / Coursera

Courses taught in specialization:

- Foundations of robot motion
- Kinematics
- Dynamics
- Motion planning and control
- Robot manipulation and wheeled mobile robots
- Mobile manipulation capstone

20/06/2022 – CURRENT

ROBOTICS SPECIALIZATION University of Pennsylvania / Coursera

Courses taught in specialization:

- Aerial robotics
- Computational motion planning
- Mobility
- Perception
- Estimation and learning
- Robot manipulation and wheeled mobile robots
- Robotics capstone

01/09/2022 – CURRENT

MACHINE LEARNING SPECIALIZATION Deep.Learning.AI / Coursera

Courses taught in specialization:

- Supervised machine learning
- Advanced learning algorithms
- Unsupervised learning and reinforcement learning

DIGITAL SKILLS

microcontroller programming such as Arduino ESP8266 and RaspberryPi | MATLAB&Simulink | C/C++ | Python | Articulate Storyline 360 | ROS (basic) | AutoDesk Inventor | IoT | Tinkerforge | Open-CV | Linux (Terminal Commands, Bash/Shell) | CAD Onshape | 3D printing | Microsoft Office | Atlassian (JIRA/CONFLUENCE) | product Development

ADDITIONAL INFORMATION

PUBLICATIONS

Literally reinventing the wheel: A novel approach to a leg-wheel mechanism that morphs half of the wheel into a foot

– 2022

Accepted in RaseConf and awaiting publication

Greenate: an agricultural rover to battle climate change – 2022

Published as part of 14th UGRC proceedings

CONFERENCES AND SEMINARS

13/09/2022 – 14/09/2022 – Remote, Belgium

RaseConf "Literally reinventing the wheel: A novel approach to a leg-wheel mechanism that morphs half of the wheel into a foot" accepted as a research paper in the conference.

08/08/2019 – 08/08/2019 – TEDx STEM school KFS, Cairo, Egypt

TEDx speaker

03/08/2018 – 04/08/2018 – TEDxMIU, Cairo, Egypt

TEDx speaker

PROJECTS

2022 – CURRENT

Wheg Wheg is short title for "Literally reinventing the wheel: A novel approach to a leg-wheel mechanism that morphs half of the wheel into a foot" research paper

2022

iFarm iFarm is a new automated farm that needs no guidance, monitoring or help from the user. iFarm can seed, water and harvest the crops, all while monitoring vital information like temperature and soil moisture so that it can act according to this data

2021

Stair wheelchair Part of a research team at Innopolis university working on making stair climbing wheelchair

2017

Author of Intermediate electrical engineering book An introductory book to the world of electrical engineering published on Amazon

2020

ACPD ACPD is a drone for monitoring COVID-19 safety procedures, it won:

- Finalist Amazon MENA hackathon
- Participated AUC robotics

2019

Greenate Greenate is an agricultural rover to battle climate change, it won:

- Top 10 VOIS hackathon
- Top 10 UGRC
- Egypt young inventor

HONOURS AND AWARDS

Top 10 junior researchers in Egypt – Nile university

28/03/2021

Top 10 VOIS Hackathon – Vodafone intelligent solutions Greenate agricultural rover project

12/02/2021

Finalist in Amazon MENA hackathon – Amazon

11/05/2015

Egypt's young inventor – Ministry of education

CREATIVE WORKS

E-learning work samples - portfolio

Link https://drive.google.com/drive/folders/1hjY27jV779n6Rok_pzEOl0J0gNmdhj?usp=sharing

VOLUNTEERING

12/2013 – 09/2017

Volunteer - Resala charity organization

INTERNSHIPS

2020

Siemens

2019

TIEC-Ministry of communications

2017

IBM

REFERENCES

CEO of CCST - Christine Makumbe

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Director of skills and workforce at Coding Dojo - Shashank Yadav

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