MAHMOD EL SHAL

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EDUCATION

2023 - PRESENT

MSC ROBOTICS, THE UNIVERSITY OF MANCHESTER

- Foundation in robotic systems, autonomous robots and robotic Manipulators.

Robotic System Design Project | Group

- Developing mobile robot (based on the Leo Rover robot) to autonomously retrieve an object from an unknown environment.
- Designing load cells for attaching sensors, cameras and a robot manipulator.
- Leading the development of the robot's software and implementing computer vision and machine learning algorithms utilising ROS 2, Gazebo simulation, and coding in Python and C++.

2020 - 2023

BENG (HONS) MECHATRONIC ENGINEERING,

THE UNIVERSITY OF MANCHESTER

The Embedded System Project | Group

- Designed and programmed an autonomous line following track buggy using STM32 microcontroller.
- Designed the chassis of the buggy using SolidWorks software, and the PCB using Altium designer. Achieved a total mark of 81%.

Final Year Project | Individual

Developed a ROS-based robot guide dog system for the blind.

- Conducted a robot simulation using Gazebo simulator to implement SLAM navigation algorithm for a quadruped robot.
- Used OpenCV computer vision library to implement object and facial detection application and developed a strong understanding of Computer Vision principles.
- Designed and 3D printed Haptic feedback unit that interfaces with the robot to provide reliable inputs for the user. Overall Grade: 77%.

2019 - 2020

INTERNATIONAL FOUNDATION YEAR, INTO MANCHESTER

- Chemistry (A*), Mathematics (A*), Physics (A*)

EXPERIENCE

2020 - PRESENT

ONLINE TRANSLATOR AND DESIGNER

- Provide translation services for articles, reports and thesis to clients and ensure long-term satisfaction.
- Working with clients cultivated various valuable skills, including effective communication and time management.

JUN 2023 – AUG 2023

MECHATRONICS INTERN, NANOGRAFT, MANCHESTER

- Designed 3D CAD prototypes for various prosthetic attachments including lock mechanisms and sensors' mounts.
- Reviewed PCB schematics to identify areas for improvement. Rerouted tracks to optimise layout, ensuring efficient signal flow and minimizing interference.
- Categorized and documented the various designed components, to allow for a seamless communication with manufacturers during the production phase.

2019 – 2020

TEAM MEMBER, PC REPAIRING CENTRE

- Part of a four-member team responsible for diagnosing computer problems, repairing both software and hardware and providing customer service.
- Responsible for building and setting up desktop PCs to be ready by the specified date.

SKILLS

- MATLAB, Simulink, LabVIEW
- PLECS, LTspice
- Fusion 360, Solidworks
- 3D Printing tools such as Ultimaker
- Microsoft office
- C, C++ and Python
- Machine Learning
- ROS / ROS2, Gazebo Simulator

LANGUAGES

- English
- Arabic
- Italian

References on Request