Nour Morsi BEng, MRes, AFHEA, AMIMechE

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Research interests

3D-printing, rapid prototyping, robotics and autonomous systems, artificial intelligence and machine learning; computer and robot vision.

Education

Industrial PhD in Robotics and Machine Vision Systems & PGR Certificate of Research **Glasgow, UK**

Glasgow Caledonian University- Spirit Aerosystems, Glasgow *2020-present*

- Specialized in robot motion integrated with machine vision, 3D printing, and AI.
- Thesis title: Feasibility testing and part handling by advanced simulation for small and medium sized enterprises.
- Developed automated robotic systems for adaptive inspection, requiring expertise in robotic motion, machine vision, light systems, and machine learning integration.
- Received **Best Poster Award** at the PGcon Conference 2022

BENG in Mechanical Engineering (1st Class Honours) **Glasgow, UK**

University of Strathclyde, Glasgow 2016-2020

- *Dean's Honour list (2017,2018,2019)*
- Thesis title: Evaporative Cooling System in Building Components.
- Design and simulation for cooling components , achieving a 30% cooling improvement.

WORK EXPERIENCE

Teaching Assistant

Glasgow Caledonian University, Glasgow *2022 –2023*

- Developed and supervised image processing and machine learning tutorials for students.
- Supervised 1st and 3rd year electrical and mechanical projects and python lab sessions.

Robotics Specialist

Dubai TRA Summer Camp, Dubai *2019-2020*

- Planned robotics educational and recreational activities for students.
- Proposed and planned interactive workshops, increasing summer intake by 20%

Junior Mechanical Engineering Intern

Heights Contracting LLC, Abu Dhabi *2018-2019*

- Analyzed pressure valve designs using finite analysis and non-destructive testing.
- Provided implementation strategies on the assembly of pressure valves.

Publications

- **Morsi, Nour M.,** Harrison, C., Mata, M., & Semple, D. (2021). Feasibility Testing of Robotics and Part Handling by Advanced Simulation for Small and Medium-Sized Enterprises. International Conference on Robotics, Computer Vision, and Intelligent Systems - ROBOVIS 2021.

- **Morsi, Nour M.,** Harrison, C., Mata, M., & Semple, D. (2023). Autonomous robotic inspection system for drill holes tilt: feasibility and development by advanced simulation and real testing. The 28th International Conference on Automation and Computing (ICAC2023).
- **Morsi, Nour M.,** Harrison, C., Mata, M., & Semple, D. (2024). In-progress: Development of an adaptive robotic inspection system for aerospace components. Anticipated publication in Frontiers in Robotics and AI.

Technical training & courses:

- Supervised Machine Learning: Regression and Classification – Coursera
- Associate Fellow of Higher education- Advanced Higher Education, UK
- Python Programming bootcamp- IT Professional Training (ITPT).

Technical skills

- Design and build end effector systems using Solidworks, Ansys, and 3D printers.
- Programming languages: C++, Python, Matlab.
- Familiar with many libraries for scientific and robot related work such as: Tensorflow, NumPy, SciPy, Pandas
- Libraries: Tensorflow, NumPy, SciPy, Matplotlib, Scikit-learn, OpenCV.
- Experience with Arduino, Raspberry Pi, ROS, and Linux.

Extra-curriclar activities

- ImechE Member – Active member of the ImechE (Associate Member)
- Stem Ambassador- Organised and assisted workshops hosted in Glasgow Caledonian University.