

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
<i>Glasgow Caledonian University- Spirit AeroSystems, Prestwick-Glasgow</i>	<i>2020-present</i>
<ul style="list-style-type: none">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
<i>University of Strathclyde, Glasgow</i>	<i>2016-2020</i>
<ul style="list-style-type: none"><i>Dean's Honour list (2017,2018,2019)</i>Thesis title: Evaporative Cooling System in Building Components.Design and simulation for cooling components , achieving a 30% cooling improvement.	

WORK EXPERIENCE

Robotics researcher (recently started)	2024-present
<i>Glenrath Farms & University of Strathclyde, Edinburgh</i>	
<ul style="list-style-type: none">Main tasks include design and implementation of a robotic system capable of detecting date labels, orientation, and packing of egg packs.	
Teaching Assistant	
<i>Glasgow Caledonian University, Glasgow</i>	<i>2022 –2023</i>
<ul style="list-style-type: none">Developed and supervised image processing and machine learning tutorials for 50 students.Supervised mechanical workshops and python lab sessions for over 200 students.Supervised mathematics tutorials for over 600 students.	
Robotics Specialist	
<i>Dubai TRA Summer Camp (organiser of summer camp activities), Dubai</i>	<i>2019-2020</i>
<ul style="list-style-type: none">Planned robotics educational and recreational activities for 500 students.Proposed and planned interactive workshops, increasing summer intake by 20%	
Junior Mechanical Engineering Intern	
<i>Heights Contracting LLC (constructing company), Abu Dhabi</i>	<i>2018-2019</i>
<ul style="list-style-type: none">Analyzed pressure valve designs using finite analysis and non-destructive testing ensuring safety standards are met.Provided implementation strategies on the assembly of pressure valves contributing to efficient assembly processes..	

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

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,
- Libraries: Tensorflow, NumPy, SciPy, Matplotlib, Scikit-learn, OpenCV.
- Experience with Arduino, Raspberry Pi, ROS, and Linux.

Extra-curricular activities

- ImechE Member – Active member of the ImechE (Associate Member)
- Stem Ambassador- Organised and assisted workshops hosted in Glasgow Caledonian University.
- Masters project mentor- Assisted masters students in mechanical and electrical projects.