

Elliot Winterbottom

Central Manchester.

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Education

University of Manchester (UOM)

Starting in September

MSc, Robotics

University of Manchester (UOM)

Sept 2021-July 2024

BEng, Mechatronic engineering. First (72.5%)

Huddersfield New College

Sept 2019- July 2021

A-Levels: Maths – A | Physics – A | Computer science – A

Projects

University of Manchester internship: Optimize Robotic Swabbing Control in Diverse Environmental Settings

July 2024 – present

A research internship with the University of Manchester. This role involves:

- The design and construction of a two degrees of freedom robotic swabbing rig requiring
 - Use of 3D modelling CAD (Onshape)
 - Design of custom parts to attach hardware to rig.
 - 3D printing and silicone moulding to manufacture test surfaces and end soft end-effectors.
- Programming of software control hardware and carry out swabbing tests
 - Using python and MATLAB to create simple applications
 - Working with Zaber linear actuators and intel RealSense cameras.

3rd year project – Implementation of Low-Cost Haptics.

Sept 2023 – July 2024

This project involved:

- The implementation of vibrational, tactile illusion-based haptics within a budget.
- This requires me to:
 - Read numerous published studies on the various forms of haptic feedback as well as more specific implementations surrounding tactile illusions such as phantom sensation and tactile brush.
 - Research and select and integrate various hardware components to achieve tactile effects.
 - Design a test to measure the effectiveness of the implementation on others.

Flight software and sensors Engineering for Tin-Can satellite.

Sept 2023 – Present

For Manchester Satellite Development Group, this project involves:

- Aid in the development of a satellite used as an in-flight measurement device for a competition run by the American astronautical society.
- This project required me to:
 - Select and integrate various sensors for use in flight.

- Programming control of embedded hardware within satellite to aid in both flight and measurement, including the use of control algorithms.
- I also helped to run some flight-software workshops for a UK based competition which the society runs annually.

Embedded Systems project

Sept 2022 – Jun 2023

This was a second-year project run as a course unit by the EEE department at UOM and involved:

- The design and building of a line following robot or “buggy” in teams of 5.
- This was organised in competitive format with races at the end of the year, which our team went on to win.
- Due to this, me and my team were given an award presented by the Institute of Measurement and Control.

Other related experience

Electrical lead – Manchester satellite development group

July 2024 – Present

The technical lead of the electrical sub team for Manchester Satellite Development Group’s competitive team.

This role requires:

- Management of an engineering team.
- Logistical organising, component orders, and international travel planning.
- Presentation of designs to a panel of international judges.

Social and social media secretary – Manchester Satellite Development Group

Sept 2023 – July 2024

My first commitment to Manchester satellite development group, I was social and joint social media secretary.

This role required me to:

- Create and post updates and announcements to various social media platforms.
- Create new social media presences for the society.
- Contact potential sponsors with polite and enthusiastic inquiries, securing funding for the society.
- Design and order merchandise for the society’s members.
- Organise and book social events for the diverse interests of our many members.

Part time mathematics tutor

2022-2023

Organised through the Tutor trust charity, this paid role required me to:

- Undergo both teacher and safeguarding training.
- Prepare lessons differentiated for each student involved: bridging gaps in previous learning while pushing them to attempt challenging content.
- Delivering hour long maths tuition sessions at a GCSE level to high-school students on a weekly basis.

1st year student representative

2021-2022

During my first undergraduate year at UOM I represented myself and my fellow students. This role involved:

- Facilitating communication between students and staff to give feedback and empower student voices.

- This role required me to:
 - Regularly poll and consult with my peers to gain feedback for the department.
 - Meet with staff in the staff student liaison committee to present this feedback and discuss the improvements which could be made.

Reference provided on request.