# Samuel Scott

Avionics Lead at Project Sunride ||

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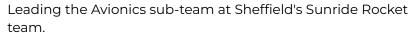
www.linkedin.com/in/robosam2003/

github.com/robosam2003

## **EXPERIENCE**

# <u>Sunride Project</u> — Avionics Team Lead

MAY 2022 - PRESENT



- Managing a skill-diverse team
- Leading design of high performance PCB hardware (Altium)
- Design of high level software for a rocketry context (C++)
- Development of low level sensor libraries for embedded platforms (C++) For example:

<u>github.com/TeamSunride/Arduino-LSM6DSO32</u> github.com/TeamSunride/Arduino-LIS3MDL

- Leading development of long range telemetry systems.
- Development of accurate rocket simulation software for algorithm verification and development.
- Integrating hardware and telemetry systems and communicating with other disciplines
- Fostering the use of the Systems Approach.

# <u>Sheffield Space Initiative Society</u> — Team Mentor

OCT 2022 - PRESENT

Mentoring teams participating in the UKSEDS National Rocketry Championship, especially with regards to Avionics.

This role also involves running <u>rocketry training sessions</u> for the SSIS, on topics I'm experienced in - <u>Avionics</u>, <u>Altium Designer</u>, ait/qithub and C++ programming.

### <u>Phlux Technology</u> — *Robotics and Automation Intern* JUN- SEP 2023

Developed a custom automation solution for on-wafer semiconductor device testing. - <u>LinkedIn Post</u>

- Developing customer requirements through the Systems Approach
- Developing custom computer vision, database management, and GUI software.
- Integrating with commercial CNC motion stages and optics.
- Automated control of measurement equipment for *fully automatic* "set-and-forget" wafer testing.

#### **Various Self-Run Businesses**

I have run several small businesses over the years, including dropshipping, eBay reselling, and appliance repair services.

### **Work Experience at University of Sheffield**

FEB 2018

Shadowing a computer science lecturer and helping create Sheffield's first <u>Raspberry Jam</u> (Raspberry Pi enthusiast event).

## **SKILLS**

- C/C++ & Python Very Skilled.
- MATLAB & Simulink Skilled
- Java Skilled
- Version control software (<u>Git</u> and <u>Github</u>) Very skilled
- ECAD for PCB design (<u>Altium</u> and <u>Eagle</u>) Very skilled
- MCAD (<u>Solidworks</u>, <u>Fusion360</u>) Very skilled
- Rapid Prototyping and design techniques (3d Printing)
- Skilled in Steel fabrication Cutting, drilling, assembly and welding.
- Skilled with motor control (BLDC, DC, Stepper etc)
- Skilled in development of robotic systems - from concept to implementation, using the Systems approach

## **AWARDS**

**IET Diamond Jubilee Scholarship** - for academic merit

**Earnest Adlington Scholarship** - for academic merit

Mark Firth Scholarship - for academic merit

**Undergraduate Academic Achievement Scholarship** - for academic merit

# **LANGUAGES**

**English -** Native proficiency **Dutch -** Working proficiency

## **PROJECTS**

# Maxwell - Open Source 3-phase Motor Controller

JUN 2023 - PRESENT

Developing a 3-phase motor controller (BLDC, PMAC) for robotic actuator applications:

https://github.com/robosam2003/Maxwell

# $\begin{tabular}{ll} \textbf{Combat Robotics (Robot Wars)} & -- \end{tabular} + \text{Heavyweight (110KG)} \\ and & \text{Featherweight (13.6KG) class} \\ \end{tabular}$

SEP 2017 - PRESENT

I led a four person team who created a heavyweight class (IIOKG) combat robot called <u>Real Steel</u> for live shows such as "<u>Extreme Robots</u>". We have entered into many of these events and are learning an incredible amount during the entire process. I am mainly responsible for the electronics and motor drives, and I am the main driver of the robot.

As a personal project I have also made a featherweight version (13.6KG) called "The Hound". For more, see: https://www.youtube.com/watch?v=MelQNC1I7Wshttps://www.youtube.com/watch?v=uqQFWDsKzqUhttps://www.youtube.com/watch?v=hyeBX0XCpUM

## **Quadrupedal Dog Robot**

AUG 2019 - APR 2020

I have experimented lots with walking robots, designing and building a quadrupedal dog-like robot, using servo actuators, and the raspberry Pi. This was a particularly challenging project. Getting it to balance on four legs while trying to move around the environment required constant tuning and in some cases entire redesigns. See:

github.com/robosam2003/Quadruped-Knightcrawler

#### **RP2040 Spectrum Analyser**

APR 2022 - SEP 2022

This project takes sound data from a PDM microphone, performs the fast fourier transform on it, and displays the frequency magnitudes on 288 NeoPixel LEDs. See:

github.com/robosam2003/RP2040-Spectrum-Analyser-cpp

#### **Daedalus Rocket**

NOV 2021 - JUL 2022

I led the avionics sub-team for a UKSEDS National Rocketry Championship entry. We came 3rd overall. See: aithub.com/robosam2003/UKSEDS\_Daedalus

#### **Autonomous Navigation Robot**

SEP 2020 - MAY 2021

An autonomous robot that used a LIDAR sensor and stepper motors to navigate a "factory floor" - For my A-Level computer science coursework. See:

github.com/robosam2003/Autonomous-Navigation-Robot

#### **3D Printed Prosthetic Hand**

SEP 2020 - MAY 2021

My first robotics project - featured here: <a href="https://www.voutube.com/watch?v=MelONC117Ws">https://www.voutube.com/watch?v=MelONC117Ws</a>

## **EDUCATION**

**University of Sheffield** — MEng, Intelligent Systems and Control Engineering

SEP 2021 - PRESENT

Currently in 3rd year

1st year - 86% grade point average.

2nd year 85% grade point average.

## King Edward VII School, Sheffield

- A-Levels

SEP 2019 - JULY 2021

Grades in Computer Science, Physics, Maths and Further Maths: **A\***, **A\***, **A\***, **A** 

Bethany School, Sheffield — GCSE

SEP 2019 - JULY 2021

11 GCSEs in a range of subjects:

Mathematics(8), Combined Science(9,9), Design and Technology(6), Computer Science(8), French(8), Art(7), Religious Studies(6) English Language(6), English Literature(6), Further Mathematics(A\*).

(Note: 8 and 9 are equivalent to A\*)

## REFEREES

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