# Samuel Scott

**Avionics Lead at Project Sunride** ||

**MEng, Intelligent Systems and Control Engineering Student, ACSE - University of Sheffield**

Sheffield, United Kingdom
**+447732901637**
robosam2003@gmail.com

www.linkedin.com/in/robosam2003/

github.com/robosam2003

## EXPERIENCE

### Sunride Project — *Avionics Team Lead*

MAY 2022 - PRESENT

Leading the Avionics sub-team at Sheffield's Sunride Rocket team.
- 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:
  github.com/TeamSunride/Arduino-LSM6DSO32
  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.

### Sheffield Space Initiative Society — *Team Mentor*

OCT 2022 - PRESENT

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

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

### Phlux Technology — *Robotics and Automation Intern*

JUN- SEP 2023

Developed a custom automation solution for on-wafer semiconductor device testing. - LinkedIn Post
- 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 Raspberry Jam (Raspberry Pi enthusiast event).

## SKILLS

- C/C++ & Python - Very Skilled.
- MATLAB & Simulink - Skilled
- Java - Skilled
- Version control software (Git and Github) - Very skilled
- ECAD for PCB design (Altium and Eagle) - Very skilled
- MCAD (Solidworks, Fusion360) - 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

**Combat Robotics (Robot Wars)** — Heavyweight (110KG) and Featherweight (13.6KG) class
SEP 2017 - PRESENT

I led a four person team who created a heavyweight class (110KG) combat robot called Real Steel for live shows such as "Extreme Robots" . 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=MelQNC1I7Ws
https://www.youtube.com/watch?v=uqQFWDsKzqU
https://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:
github.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:
https://www.youtube.com/watch?v=MelQNC1I7Ws

# 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

**Zefy Pissaki - Sunride Project Lead**
**07522 400821**
**zpissaki@gmail.com**
**www.linkedin.com/in/zefy-pissaki/**

**Ben White - Phlux Technology CEO**
**07840 034845**
**ben.white@phluxtechnology.com**
**https://www.linkedin.com/in/bswhite/**