Samuel Scott

Avionics Lead at Project Sunride

Automation Consultant at Phlux Technology

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

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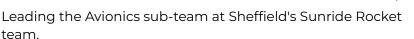robosam2003@gmail.com
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EXPERIENCE

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 LSM6DSO32 and LIS3MDL.
- Leading the development of liquid engine propulsion control hardware and software.
- Fostering the use of Systems engineering.

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 — *Automation Consultant*
SEP 2023 - PRESENT

Consulting on all things automation related:
- Continued development of automated wafer testing systems
- Development of automated device handling systems
- Development of machine vision systems
- Upgrading automation systems with distributed control (using ROS2)

Phlux Technology — *Automation Intern*
JUN- SEP 2023

Developed a custom automation solution for on-wafer semiconductor device testing. - LinkedIn Post
- Developing customer requirements through Systems engineering.
- 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 other experience
Other experience includes:
- Self run Ebay reselling businesses
- Self run Appliance and electronics repair business
- Work experience at the university of Sheffield (Developing electronics and computer science outreach programs)

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 in development of robotic systems - from concept to implementation, through systems engineering

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

ACS330 Future Factories Project
SEP 2023 - PRESENT

Developing a *flexible automated manufacturing framework* for machining and assembly operations - Part of my 3rd year group project.

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

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

Various other projects
My other personal projects include:
- Real time LED Spectrum analyzer - Github
- Daedalus Rocket - A custom avionics system for a G-class rocket for the UKSEDS National Rocketry Competition - Github
- 3D printed Prosthetic Hand - My first robotics project - featured here: 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

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