Samuel Rhodes

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Personal Profile

I currently study Robotics, Mechatronics and Control Systems Engineering at the University of Sheffield.
Leadership Roles I have undertaken include being a Leader of a Cub Pack involving managing trips and nights away, being a Team Captain of my Underwater Hockey Team (UWH) at a regional level and Coaching UWH to beginners.
I am currently leading a public engagement project as part of the Sheffield Engineering Leadership Academy.
Among many projects I have set for myself; I have built a wood lathe from scratch requiring electrical and mechanical skills; designed my own range of Bespoke Wooden Trumpet Mouthpieces; Designed a working 3D printable Grandfather Clock in Solidworks.
I recently competed in the Finals of the Triumph Design Awards with my A level Project. In March 2019, I competed in the finals of the Young Engineer of the Year Awards at Birmingham MEC.

Technical Skills

Proficient in the use of Microsoft Office, including Word, Excel and PowerPoint.
Proficient with Corel, SolidWorks and Fusion360. Experienced with Keyshot, Pycharm and Visual Studio.
I am competent in MATLAB, Octopuz and familiar with Labview and Polyscope.
Proficient in CNC/CAD/CAM Manufacture, 3D Printing, Laser Cutting and Woodworking (with Lathes and Carvers).
Proficient in programming C and C++ and developing wiring diagrams and then programming Arduino's in their native IDE.

Education and Qualifications

Meng (Hons) Mechatronic and Robotic Engineering- University of Sheffield. 2018-2023

Relevant Modules: Systems Engineering Mathematics, Modelling Analysis and Control, Digital and Embedded Systems, Electric and Electronic Circuits, Mechatronics, Signals Systems and Communications, Orientated programming, Intelligent Systems.

Heckmondwike Grammar School and Sixth Form

A Levels:	Maths (A*), Product Design (A*), Physics (B), Further Maths AS (B) EPQ A	2018
GCSEs:	8A*s with English Language, Literature and Maths. 4 A's and 1 B.	2016

Work Experience

Olympus Technologies 4 Month Summer Placement 2019

My responsibility was managing, designing, building and programming a robotic palletising cell that interacted on a Rexroth Linear Slide, to meet a gap in the market Olympus had identified, whilst maximising efficiency from a offline generated app Olympus had been developing alongside. It incorporated in-depth Solidworks Design, interacting with manufacturers and programming Universal Robots (In both native UI and Java).
I was given responsibility of managing a team of 5 engineers in order to ensure the robotic palletiser was fully functional for Olympus' Open day and efficient by the PPMA show Olympus showcased the project at in early October.

Amongst other projects, I was responsible for designing and researching an automated gripping system for Nestle. I was given an research budget and designed an SLS nylon printed modular gripper which allowed maximum flexibility for the company, of which Olympus is now seeking to patent.
I was instrumental in designing an automated camera panning rig for Olympus' custom promotional videos involving 3D CAD, Arduino Programming and interacting with Python n a Raspberry Pi.

Projects

A-Level Project

Designing a training aid to develop flicking skills for GB Underwater Hockey Players.
Required in depth analysis of effects of buoyancy, drag and fluid dynamics on the product and its materials.
Project gained prizes for innovation and design in Triumph Design Awards.
I also received prizes for pitching and design at the Finals of Young Engineer of the Year Awards at Big Bang Fair in Birmingham MEC. I intend to go into small-scale production of this product later this year using a custom built 3D printer and jigs designed specifically to minimize production time and increase profits for this product.

Skills and Achievements

RAENG Leadership Scholarship

I was recently awarded this prestigious award to help with personal and professional development through workshops, grants and networking opportunities enabled through the Royal Academy. Through this, I have recently undertaken several ventures surrounding

Duke of Edinburgh Gold Award

Volunteered as a leader at a local cub pack, requiring organisation and ability to improvise under pressure. I played Underwater Hockey as my sport becoming captain for our U19 Regional team allowed me to develop teamwork, confidence and communication. I learnt Trumpet for my skill, which required perseverance and self-motivation.
I took part in a 3-Day expedition in the Yorkshire Dales with 3 other friends. During which we had to plan routes, keep team morale high especially for our team member who became injured whilst peaking Penyghent. This taught me invaluable skills in situational analysis and improvisation under pressure.

Young Leader Award and Queen Scout

To complete my Young Leader Award and Queen Scout I had to lead many pack nights at our local cubs. This involved planning, running and evaluating nights. In addition, I had to camp for 20 nights, run a series of 6 themed nights for Explorers which required adaptation and communication skills and complete 6 training weekends on Leadership and First Aid.

Rotary Young Leadership Award (RYLA)

During the course, I learnt how to work effectively in a team as well as how to lead one. This involved taking leadership roles in different scenarios requiring different leadership styles. These taught me vital skills in recognising when and how to apply different forms of leadership to create an effective team. In addition, I learnt to recognise potentials of team members and match tasks to suit them in order to maximise efficiency and co-operability.

Other Achievements

Underwater Hockey Coach UKCC Level 2-4th Sept 2016
Underwater Hockey Referee Level 2 June 2017
Young Leader Award May 2017
Queen Scout Award Oct 2018
Gold Duke Of Edinburgh's Award Oct 2017
RYA Level 2 Sailing May 2012
Associated Board Grade 5 Trumpet Merit Summer 2017
Throughout my degree so far, I have maintained an 87% average.
At University, I have joined the ACSE Assist program, which makes me available to tutor other students and help them with their work as well as running revision and Personal Tutorial Sessions throughout the year.
As part of the SUSAC Scuba Diving Club, I organised and led a diving trip to a local reservoir, this will allow me to not only take leadership in organising but also teach me how to manage larger groups.
I am currently developing my A-Level Project further with the hope of making it commercially viable by March having designed and built a custom 3D printer with the intention of using it for small-scale production of this product.
I am currently planning and leading a public engagement event, aimed at promoting engineering for secondary school kids as part of the Sheffield Engineering Leadership Academy initiative.

References

Further references available upon request.

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