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 successfully led 2 **public engagement** projects last year 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**; Designed and **programmed** a custom **3D Printer**, created an **Eco-friendly** shopping **Chrome Plugin.**
I recently competed in the Finals of the **Triumph Design Awards** and the **Young Engineer of the Year Awards**.

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. **Predicted 1st Class Degree with current 87% Average**

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 As and 1 B.	2016

Work Experience

Labman Automation Ltd: Robotics Engineer (Fixed Term Contract) 2020

At Labman, I was responsible for primarily 3 projects; Filtration and Extraction Robot for protein substrate testing; Pneumatic Cheese moulding robot and an stepper-board soak test rig to dynamically test inhouse designed circuitry.
My main project (Filtration & Extraction Robot) involved complex **mechanical design, electrical schematic** modification and **programming** in **C# WPF** to interface with **Industrial PC's** (IPC) and a host of sensors. I learnt to **troubleshoot** schematics to use **sink/source IPCs** and program **asynchronous threads** to control multiple sensors simultaneously.
I was challenged to create an durable Pneumatic Cheese Piercer, I learnt to **cascade decay valves** and **trigger valves** to **link** complex **pneumatic** firing **procedures**. I created my own **CAM Mechanism** to force one-directional rotation from linear motion of a piston.

Olympus Technologies Ltd: Project Engineer (Fixed Term Contract) 2019

My responsibility was **managing, designing, building** and **programming** a robotic **palletising cell** that interacted on a Bosch Linear Slide, to meet a gap in the market Olympus had identified, whilst **maximising efficiency** from a **offline application** Olympus had been developing alongside. It incorporated in-depth **Solidworks Design**, **negotiating** with manufacturers and **programming** Universal Robots (In both native UI and Java).
I was given **responsibility** of **managing** a team of 4 engineers to ensure the robotic palletiser was fully **functional** and **efficient** for the PPMA **trade show** where Olympus showcased the project.

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 3D 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 CAD, Arduino **Programming** and **app development** to remotely control setting on the rig.

Projects

A-Level Project

Designing a training aid to develop flicking skills for GB Underwater Hockey Players which is now a **sustainable business**. Required in depth **analysis** of effects of **buoyancy**, **drag** and **fluid dynamics** on the product and its materials.
The project gained **prizes** for innovation and design in **Triumph Design Awards**.
I received **prizes** for pitching and design at the Finals of **Young Engineer of the Year Awards** at Big Bang Fair in Birmingham MEC. Shortly afterwards, I **launched** small-scale **production** of this product using my custom-built 3D printer and **optimised** production time to **increase profits** for this product. I am currently **expanding** the **range** of products offered.

Skills and Achievements

RAENG Leadership Scholarship

I was recently awarded this **prestigious award** by the **Royal Academy of Engineering** to help with **personal** and **professional development** through workshops, grants and networking opportunities. This recently enabled me to undertake **critical thinking**, memory enhancement and **business management courses** amongst many opportunities.

Sheffield Engineering Leadership Academy (SELA)

As part of Sheffield Engineering Leadership Academy, I have been blessed to attend many Personal Development Courses in **Time Management**, **Active Listening**, **Emotional Supportiveness** and **Networking.**

Duke of Edinburgh Gold Award

Volunteered as a **leader** at a local cub pack, requiring **risk mitigation** and **adaptational planning**. I played Underwater Hockey and became **captain** for U19 Regional team where I developed **teamworking**, **confidence** and **communication**. I learnt Trumpet, requiring **perseverance** and **self-motivation**.
I undertook a 3-Day expedition with 3 friends. We had to **keep morale high** when a team member became **injured** on top of 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 cub **pack nights**. 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)

I learnt how to effectively work in and lead a team. I undertook leadership roles in scenarios requiring **different leadership styles**. These taught me vital skills in **recognising when** and **how** to apply **forms** of **leadership** to **maximise team cohesion**. I learnt to **recognise individuals potential** assigning tasks to maximise **efficiency** and **co-operability**.

Other Achievements

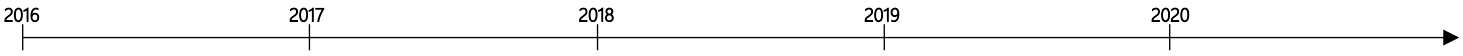
Underwater Hockey Coach UKCC: Goal setting, Active Listening and Empowering Individuals.

Young Leader Award (Scouting): Improvisational Planning, Risk Assessment and Event Organisation.

Queen Scout Award: Dedication, Organisational and leadership skills.

Young Engineer of the Year Finalist: Won awards for Best Pitch and Design.

RAENG Leadership Scholarship: Empowering Speech, Public Speaking and Critical Thinking.



Underwater Hockey Referee: Observational, Argument Management and Situational Judgement.

Gold Duke of Edinburgh's Award: Motivating Individuals, Decision making during Emergencies.

Triumph Design Awards Finalist: Won Design and Innovation Awards.

Sheffield Engineering Leadership Academy: Difficult Conversation Management, Active Listening and Time Management Skills.

Throughout my degree so far, I have maintained an 87% average.
At University, I volunteer as a tutor for fellow classmates and run Revision/Tutorial Sessions throughout the year.
With Sheffield Scuba-Diving Club, I am treasurer a role requiring **organisation**, **financial planning** and **accountancy** skills.
I led 2 public engagement events to promote engineering for secondary school kids through the Sheffield Engineering Leadership Academy initiative.

References

Further references available upon request.

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