

William Betteridge

MEng (Hons) Electronic Engineering student at the University of York
Email: wab513@york.ac.uk | Mobile: 07703437333 | Website: wabetteridge.co.uk

I am an enthusiastic engineer with a practical ability to explore, understand and develop creative solutions, interfacing between software and hardware. I also enjoy helping people and solving problems, especially being involved in outdoor activities as well as volunteering in a wide range of areas.

EDUCATION

MEng (Hons) in Electronic Engineering, University of York September 2021 – June 2025

- 4th year: predicted 1st, 3rd year: 75%, 2nd year: 69%, 1st year: 85%
- Key modules: Control Engineering, Systems Programming, Machine Vision and Human Machine Interaction, Robotics Design & Construction, Semiconductor Devices, Nanoelectronics & Photonics, Mobile Comms & Internet Protocols

Calday Grange Grammar School September 2019 – June 2021

A Levels:

- Maths, Electronics, Physics: A*, A*, A

GCSEs: September 2016 – July 2019

- 10 GCSEs (grades 6-9, including five 9's).

PROJECTS

MEng Project - Autopilot for Aerial Photography February 2025 – June 2025

- Completed a literature review to select an appropriate methodology for autonomous path planning in 3D, considering a range of genetic and shortest path algorithms; to provide the best balance between efficiency and real-world applicability.
- Designed a user interface in python to interface with a bespoke adaptation of the Travelling Salesman Problem written in MATLAB to incorporate altitude adjustments and wind direction.
- Constrained the algorithm to consider battery life preservation and environmental conditions which may provide increased user flexibility adding the ability to know when UAVs can safely land and refuel for optimum photo coverage.
- A range of standardised geometries to optimise the computational efficiency of the algorithmic model will be used to test the application.

Machine Vision & Image Processing Timelapse Camera September 2024 – November 2024

- Produced a timelapse system allowing the creation of autonomous timelapse videos using a Raspberry Pi.
- Planned an expansion incorporating astrophotography aiming to track the night sky as the earth rotates.

3rd Year Software Engineering Group Project – 74% September 2023 – June 2024

- Took on the role of software manager for a team of nine, leading the planning, design, and coordination for efficient implementation of software components in “DocDuck”, an Engineering Maintenance & Asset Manager Application.
- Communication with team members to manage the quality of the software through a verification/validation process.

3rd Year Robotics Design and Construction – 76% September 2023 – January 2024

- Constructed and programmed an autonomous robot in C++ via the use of sensors and shortest path algorithms to navigate through the maze whilst constructing an occupancy map to allow the robot to return to the start position.
- Adapted and improvised many iterations of code to find a solution for the robot to solve the maze using an embedded system with infrared and ultrasonic sensors interfaced using I2C and differential drive motors.

WORK EXPERIENCE

Nervous Systems Internship – University of York June 2024 – September 2024

- Developed the first practical hardware implementation of a biologically inspired spiking neural network at the University of York's £850,000 EPSRC funded Nervous Systems research group.
- Implemented custom artificial neural microcircuits to control a robot and achieve basic obstacle avoidance.
- Learned advanced Python programming skills using the Brian2 SNN library to create a modular program design and also acquired a deeper understanding of hardware-software communication.
- Published an abstract and poster at the 2025 IEEE Symposium Series on Computational Intelligence and presented the same research at an international workshop on Reliable and Sustainable Neuromorphic Hardware in York.

Photography Business - Willabphotography November 2020 – Present

- Established a social media presence for a personal photography business.
- Created a vibrant portfolio of work, produced and sold scenic calendars since 2021, raising money for charity.

- Commissions for candid photos at anniversary celebrations and sold Lakeland postcards in a local artisan shop.

Lifestyle Courier – Evri (Hermes)

July 2022 – August 2022

- Excellent 5-star customer service reviews, demonstrating essential time management, route planning and customer liaison skills. Going “above and beyond” expectations and aiding customers.

Heswall monthly magazine delivery – Talkabout Publishing Ltd

July 2016 – September 2021

- Delivery of local news magazines. Involving route planning and time management.

VOLUNTEERING & RESPONSIBILITIES

York Engineering Society

April 2023 – April 2024

- Secretary for York Engineering Society and the IET on campus group.
- Took the joint lead role organising and scheduling creative and unique events for a 280-member society.
- Established communication with new external companies and employees to arrange speaker talks.
- Directed a committee of twelve, delegated tasks and responsibilities to other committee members.
- Streamlined the planning & delivery of events simplifying the process for committee to collaborate and organise events.
- Attended North Yorkshire IET meetings to explore opportunities for the society, (talks and local network volunteers).

ShockSoc

April 2022 – April 2023

- Press & Publicity for ShockSoc (Later became York Engineering Society)
- Designed and created weekly newsletters to inform society members about upcoming events.
- Ran and maintained a social media presence posting eye catching graphics for each event.

Scouting

October 2017 – June 2021

- Young leading with Cubs, organised and led engaging/fun activities for the cubs.

Heswall Parish Youth Community Outreach Program

July 2019 & July 2021

- Leading and running activities for families and children in deprived areas of The Wirral.

Local Nature Reserve Maintenance

June 2019 – September 2019

- Volunteered as a member of a ranger team to maintain the nature reserve and prevent loss of native species.

ACHIEVEMENTS

Duke of Edinburgh - Silver

December 2019

- Co-ordinated and completed a 3-day expedition, overcame challenges of tough terrain and navigation.

Duke of Edinburgh - Bronze

October 2018

Duke of York - Bronze

June 2017

Piano, Violin, Drums, & Music Theory Grade 5

January 2016 – December 2019

SKILLS & INTERESTS

Full clean driving licence + Pass plus skills

Passed May 2021

Academic and Programming Knowledge & Skills

- Programming Languages: C, C++, Java, Python, VHDL, ARM Assembly, MATLAB, HTML & CSS
- Environments & Tools include Windows, Linux, Git & GitHub, LaTeX
- Creative thinking and solutions applied in circuit design & programming solutions.

Uni Societies + Extra Curricular

- Involved in many university societies, including the photography society; participating and winning an exhibition around the theme of “Indoors & Outdoors”.
- Played in the school orchestra as deputy lead violinist, working as a team.

Hill Walking – Completing the Wainwrights

- Hill walking in the Lake District, currently enjoying the challenge of completing all the Wainwrights. Currently at 160/214 completed.

Sports

- Golf, including playing in regular junior golf competitions, and now adult golf competitions. Persevering through Chronic Fatigue to maintain exercise and improve stamina.
- Achieved Black Belt in Taekwondo at a young age.