Rowan Aufenast, Meng

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Roles
Robotics/Mechtronics Engineer, Product Design Engineer, Mechanical Engineer

Profile
Flexible Robotics Engineer, graduated with a MEng in product design engineering. Highly motivated with strong Hardware, practical, creative, and teamwork skills to approach problems from many angles. I have been creating and solving problems for most of my active life, from Lego to steel, undertaking engineering projects in the Agritech industry and in my own time, varying from small electronics to large vehicles. I am fascinated by new technology and products, having always disassembled, repaired, and modified countless items.

Qualifications
Loughborough University, Product Design Engineering MEng 2016-2021

- **1st** Class Honours in Product Design Engineering MEng with a diploma in industrial studies

Farlingaye Sixth Form 2014-2016

- A2 levels- **AAAB** in Maths, Physics, Product Design and General Studies

Farlingaye High School

- 10 GCSEs **A*-A,** including Maths, Statistics, Physics, Resistant Materials, Systems and Control

Relevant Skills
Practical
- Experienced use of **Milling and Turning** in industry and personal projects
- Moderate Experienced in MIG **welding** for personal metal fabrication projects.
- Very Experienced with **3D printing** Ultimaker, Prusia, Bambu, Creality
- Use of various **Metrology** equipment, including tensiometers and CMM machines
- Experienced with Soldering, wire harness and PCB fabrication

Software
- Experienced using **CAD and CAM,** Onshape, Siemens NX, Solidworks, moderate experience using PTC Creo & Fusion 360
- Experienced using **3D slicing and printing** using Simplify 3D, Cura, and Bambu Studio
- Moderate Experience **PCB Design** in Ki CAD
- Experienced in using the **Project Management** tool Asana
- Moderate experience with Adobe Photoshop for interfaces and poster creation
- Experienced with Autodesk Sketchbook Graphical art platform for digital sketching
- Microsoft Office Suite and G-Suite
- Novice Vs Code C++ and Github

Engineering
- **Sheet metal** fabrication for the design and production of robotics chassis and harvesting systems
- **DFM and DFA**
- Power train design for small Logistics robots
- **Electronics** Enclosures and Wiring for manipulation, Linear motion and Robotics Control cabinets
- Robotics **End Effectors** and Manipulation gripping, cutting and transferring items
- Automation and **Sensing**, use of Contact and non-contact sensors for movement and item detection
- **Liner Motion** Design for Cartesian Robotics
- Familiarity with key **standards** for autonomous robots, particularly ISO 3691-4:2023.
- CAD Administration management of CAD BOMs and standard component libraries
- Novice **Pneumatics** used for test rigs at Bosch

Employment and Experience

Muddy Machines Ltd – Lead Robotics Engineer– January 2025 – June 2025

- **Hardware team lead** on the Squirrel, a small agricultural logistics platform, HW team of 3
- **Project management** for day-to-day tasks and meetings for the Squirrel project
- Designed, prototyped and documented the development of the new electronics control enclosure
- Software team collaboration to facilitate constant improvement cycles of **SW and HW Integration**
- CAD Admin and in charge of Testing and Logistics of multiple robots on test

Muddy Machines Ltd – Mechatronics/Robotics Engineer– October 2021 – January 2025

- Designed, prototyped and tested **Tenderstem™ broccoli harvester**, team of 2
- Designed, prototyped, and tested in the field, Courgette Harvester, team of 2-4
- Assisted in the design, prototype and extensive field testing of **Sprout large Robot**
- Assisted in design, prototype, batch manufacture and field testing **Asparagus harvester**

Bosch Home and Garden – Engineering Internship – August 2018 – July 2019

- Worked in pre-launch **product quality** and was responsible for identifying post-launch product quality issues
- New product **R&D**, including testing, Quality, CAD work using PTC Creo
- Local expert on **tensiometer** in the metrology lab for various testing
- Industrial diploma/dissertation on bypass blade cutting forces and energy usage, manufactured two test rigs for acquiring data on the subject.

Bawdsey Primary School –Volunteering – Lego League Competition 2012-2016

- Contributed to a national-level competition by assisting in the design, construction, and programming of a basic robot.
- Gave me skills in teaching and simplifying complex knowledge to a level that will be understood by the audience

St Mary's Church, Bawdsey – Groundskeeping – 2014 to 2016

- Taught me how to use my time efficiently and conduct my own periodic safety and maintenance checks on grounds-keeping vehicles and equipment.
- Independent working and decision making.

Key Achievements

Successful research design and production of my own.

Personal Projects

- Two-cylinder diesel 3 kW generator
- Beetle class fighting robot powered by 3 brushless motors, wielding a horizontal spinner weapon
- 250cc off road go-kart and 124cc off road go-kart
- Conversion of a 1000cc diesel UTV into a 550cc petrol recreational off-roader
- Restoration and repair of a 2000 2.4 TD Toyota Hilux
- 550mm Hex rotor drone platform and 218mm FPV racing drone
- Mini RC FPV 3D printed tank
- V8 Shaped Intel Core i7 and GTX 1080 gaming PC with custom cooling and construction of customer rigs
- Various 3D printed products, ranging from headphone holders to drones

Education projects

- CTIS Design for JANKEL Armouring LTD (Meng 5th Year Industrial Project)
- Evaporative immersion cooled laptop test rig dissertation (Meng 4th year)
- Bypass Blades test rigs and dissertation (industrial placement Project with BOSCH)
- Folding Hex rotor drone capable of dropping aid capsules from the air (A2 Product Design)

Hobbies

- **CAD and 3D printing** allowed me to expand on my creativity and produce my own products
- **Remote Control** Cars, Tanks, Boats, Drones and Planes marked the beginning of my interest in robotics, combined with 3D printing and CAD, allowed me to design and make my own RC vehicles
- **Off-road vehicles,** both driving, modifying of road vehicles for recreational uses
- **Building Things,** my true passion lies in building and creating through a hands-on approach. Many of the skills I've developed are self-taught, having been gained through countless hours of tinkering and experimentation in my workshop.