



# JAMES BENNION-PEDLEY

## Embedded Electronics Engineer

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Hi, I'm James. I'm an Embedded Electronics Engineer currently working at **Dyson Ltd.** I work in a department focusing on new technologies for Dyson's future product lines, applying the latest research and helping design engineers realise their ideas!

Strictly speaking, I am an electronics firmware specialist, however from day to day I tend to dabble in everything from PCB layout to web development to graphic design! I have experience working across multiple engineering disciplines in 3 different countries, including time working directly with contract manufacturers in China and Malaysia.

I have a strong skill set in embedded C/C++, both in bare-metal/RTOS and Embedded Linux environments. My previous work has covered everything from FOC motor control, custom ARM bootloader design, Linux kernel drivers for obscure SoCs and more. I have extensive experience working with low layer protocol stacks and hardware-optimised network drivers through various projects relating to sub-microsecond time synchronisation (a topic that has become a bit of an obsession of mine!)

The nature of my job means I can't share the exact details of what I get up to from 9 till 5. However, if you want to get an idea, you can check out my hobby projects! I've always got a project on the go, plus I'm involved in a handful of [open-source projects](#). I publish many of my projects online, under the Internet Moniker [@BOJIT](#).

In my spare time I enjoy hiking, camping and cycling; I play guitar, piano, and the violin. I am also an enthusiastic *luthier* (instrument builder) You can check out some of the instruments I've built [here](#).

## PRIOR WORK & EXPERIENCE

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**June 2025 → Present:** Embedded Electronics Engineer, Tech Research, *Dyson Ltd.*

**January 2024 → June 2025:** Electronics System Integration Engineer, *Dyson Sdn Bhd. Malaysia.*

In response to a resource shortfall on an upcoming product release, I was transferred to a downstream integration team in Malaysia. My responsibilities ranged from diagnosing production line tester issues, working with contract manufacturers on DFM optimisation, creating internal test tooling and co-ordinating verification of intelligent features on our newest vacuum cleaners.

**June 2023 → January 2024:** Embedded Electronics Engineer, Tech Research, *Dyson UK / Singapore.*

In this role I am responsible for proving the feasibility of new technologies in a consumer product setting. The job covers everything from initial proof-of-concept rigs to design-for-manufacture studies. Engineering fields include low-cost sensing, camera systems and embedded Linux development.

**September 2021 → June 2023:** Embedded Software, Upstream Robotics, *Dyson Ltd.*

This position was in a small 4-person team creating embedded platforms for Dyson's future robotics research, focusing on low cost comms networks and FOC actuator design. The work is fast paced, so a good understanding of codebase simplification and multi-repository version control was paramount.

**September 2019 → September 2021:** General Engineering Rotations, *Dyson Ltd.*

My first two years at Dyson were comprised of four-month placements in various engineering functions: I worked in the following teams:

- Power Electronics and Energy Storage
- NPI Software Team: Embedded
- Technology Development: Structural Analysis
- Tech Research: Motors and Rotor dynamics
- Tech Research: Embedded Sensing
- NPI Wearables: Design Engineering

**2015 → 2019:** Head Technician, Poole and Parkstone Grammar School. Responsibilities include AV installations and equipment maintenance/repairs as well as theatre productions and concerts.

**2017 → 2019:** Freelance work as a lighting/AV technician around Poole/Bournemouth

**2017:** One-week placement at *Beakbane* fabrication, Kidderminster [[beakbane.co.uk](http://beakbane.co.uk)]

**2016:** Two-Week placement at *Crimson Guitars*, Piddlehinton [[crimsonguitars.com](http://crimsonguitars.com)]

## QUALIFICATIONS

Bachelor of Engineering (Hons.) [July 2023]  
[Electronics Hardware] – **1<sup>st</sup> Class.**

Degree Apprenticeship, University of Warwick  
Dyson Institute of Engineering and Technology,  
[[dysoninstitute.com](http://dysoninstitute.com)]

A-Levels: [June 2018/ June 2019]

- Mathematics **A\***
- Physics **A\***
- Product Design **A\***
- Electronics **A\***
- Further Maths **A\***

GCSEs: [June 2017] - **12 A\* grade**

## AWARDS

**2023:** Best overall grade in degree – Dyson Institute of Engineering and Technology

**2019:** Poole Grammar School: Best A-Level results in school

**2018:** Winner of 'Pembroke Prize', the school award for overall academic excellence.

**2017:** Arkwright Scholarship [[arkwright.org.uk](http://arkwright.org.uk)]

**2014 → 17:** Poole Rotary Society district engineering competition – 2 wins out of 4 competitions.

**2015:** Valter Prize – David Cockbaine Shield [[dorsetasset.org.uk/about-us](http://dorsetasset.org.uk/about-us)]

**2015:** Team Leader for EDT Go4SET regional design competition, where we came in 1<sup>st</sup> place overall  
[<https://www.thecollege.co.uk/news/judgement-day-young-design-engineers>]

## ENGINEERING SKILLSETS

Experienced	Embedded C/C++	Svelte/Typescript	Git + SCM	CI/CD + DevOps
	RTOS Development	ARM Cortex-M		
Competent	Python / MATLAB scripting	Altium/KiCAD PCB EDA	Embedded Linux (Buildroot + Drivers)	NX / 3D CAD
	SMD Electrical Prototyping	Embedded DSP	BLDC Motor Control	Industrial PLM Tools
Basic	Zephyr RTOS	Optics and Camera Hardware	Cloud Architecture (Cloudflare, GCP)	
Currently Learning	Yocto Linux	Verilog/VHDL	Rust	

## REFEREES

Reference contacts available upon request.