

James Dillon

Software · Electronics · Product Design

Letchworth, Hertfordshire • 07821 867254 • jamesdillon_@outlook.com
linkedin.com/in/jamesdillondev • github.com/JamesDillonDev

jamesdillon.uk
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coursework and projects



PROFILE

Sixth form student studying Maths, Computer Science and Product Design, looking for a software or engineering apprenticeship. I have worked part-time as a junior software engineer at Janus Technology since July 2025, building features that went out to real customers, and spent a placement at MBDA working on a Raspberry Pi guided missile project. Outside of school I build things end to end, from a self-hosted website and home server to 3D-printed electronics projects. I am also a Sergeant in the Air Cadets, so I am used to teaching, organising and being responsible for other people.

KEY SKILLS

Languages	C#, Python, JavaScript
Web & software	SvelteKit, HTML/CSS; building web apps and plugins to a brief
Infrastructure	Docker, Linux, self-hosting, home networking, automated image builds and deploys
Version control	Git, GitHub, self-hosted GitLab
AI tooling	LLM-based automation, Model Context Protocol (MCP) servers, structured knowledge bases
Hardware	Raspberry Pi, Zigbee, sensors and smart devices, wiring and low-voltage installation, hardware integration, testing and fault-finding
Design	Product and concept design, CAD, 3D printing, electronics, prototyping and iterating from a brief (A-Level Product Design, GCSE DT grade 9)

EDUCATION

Knights Templar School Sixth Form | Baldock, Hertfordshire Sept 2024 – present

- **A-Levels (predicted):** Product Design A*, Computer Science A, Maths B
- **Extended Project Qualification — A* (50/52):** designed and built an automatic pet feeder, covering the research, design, electronics and build. Full write-up on my portfolio.
- **GCSEs:** grade 9 in Design and Technology and Computer Science; 8 in Physics and Media; 7 in Maths and Chemistry; 6 in Biology; 5 in English. Cambridge National in Enterprise and Marketing — M2 (grade A equivalent). Graded coursework is on my portfolio.

WORK EXPERIENCE

Janus Technology | Junior Software Engineer (part-time) July 2025 – present

- **Support ticket automation (osTicket)** — built a plugin for the open-source osTicket helpdesk that reads an incoming ticket, works out the likely problem and drafts a step-by-step reply, so common queries get a useful first response without waiting for an agent.
- **Stile app for AVProEdge** — added the live video preview feature to a released app that controls multiview video walls. Every draggable source now shows a real-time preview, so users can tell inputs apart before assigning them to a display.
- **AI knowledge base** — set up a linked Obsidian vault holding API references, example projects and in-house library notes so AI tools can pull the right context instead of the team pasting docs into a chat window. Also tested several MCP servers and wrote a custom one to connect AI tools to our self-hosted GitLab.
- Worked to a brief on each project, mostly on my own but within a team, and iterated on feedback. Completed workplace fire warden training.

MBDA | Engineering Work Experience 2026

- **Miniature guided missile** — worked in a team to design and program a model guided missile running on a Raspberry Pi, helping with the code, integrating the hardware, testing the system and tracking down faults. Code on GitHub at JamesDillonDev/mini-missile.
- Rotated through systems testing and validation, materials, hardware-in-the-loop, electronics, production and project management, which showed me how a large engineering programme is delivered from concept through to implementation.

PROJECTS

jamesdillon.uk — Portfolio Website | SvelteKit, Docker, Raspberry Pi

2025 – present

- Built the site in SvelteKit and self-host it from a custom Docker image. Pushing to Git builds a new image that my server pulls and swaps in automatically, so a deploy takes nothing more than a git push.
- Wrote a custom in-page PDF viewer component so my coursework can be read on the site instead of having to be downloaded first.

Home Assistant Smart Home | Docker, Zigbee, Raspberry Pi

2025 – present

- Rebuilt the family smart home around Home Assistant in Docker. Started with Tapo smart plugs for lighting, then added Wake-on-LAN control for the TV and Sonos playback.
- Moved over to Zigbee using a Sonoff dongle and motion sensors for automations like hallway lights that come on at night and switch themselves off, including planning cable routes and running low-voltage cabling safely and neatly.
- Added a wall-mounted Raspberry Pi 4 touchscreen panel so the whole house can use the system without reaching for a phone. I diagnose and fix the hardware, network and integration problems myself.

Jellyfin Media Server | Self-hosted home lab

2025 – present

- Run a Jellyfin server holding our media and the CDs I have ripped, so the family has one central library. Set up to be reliable and simple enough that everyone can use it without my help.

LEADERSHIP & VOLUNTEERING

RAF Air Cadets, 248 Squadron | Sergeant

2022 – present

- Promoted through four ranks to Sergeant, responsible for the training and welfare of junior cadets on weekly parade nights.
- Methods of Instruction qualified, so I plan and deliver lessons to groups of 10–20 and assess cadets afterwards. Also hold the Silver Leadership award.
- Qualified First Aid Instructor (St John Ambulance), able to teach and assess first aid as well as respond to incidents.
- Represent the squadron at public events such as Remembrance Sunday, and competed in athletics at Wing and Regional level.

Scouts and Explorers | Young Leader

2014 – present

- Help run weekly meetings at my old Scout group, planning activities, keeping sessions on track and supporting the leaders.
- Help organise weekend camps and residentials: sorting equipment, giving safety briefings and running outdoor activities.
- Volunteer on the BBQ and bar at Balstock and the Baldock Beer Festival, serving 100+ members of the public, handling cash and keeping a busy food station clean and safe.

Duke of Edinburgh's Award | Bronze completed, Silver in progress

2022 – present

- Expeditions in North Yorkshire and the Peak District involving route planning, navigation and teamwork, volunteering in the local community, and a cybersecurity club covering online safety and ethical hacking.

QUALIFICATIONS, AWARDS & INTERESTS

Qualifications	Instructor First Aid, St John Ambulance · Methods of Instruction · BTEC Level 2 in Teamwork and Personal Development (GCSE equivalent) · Air Cadets Silver Leadership · Fire Warden (valid to 2027)
Awards	EPQ A* (50/52) · Gold medal, Wing-level athletics · GCSE grade 9 in Design and Technology and in Computer Science
Interests	Running (5K PB 20:35), home lab and self-hosting, 3D printing and electronics projects

Full write-ups, coursework and source code: jamesdillon.uk