Maxwell Catmur

[maxcatmur@icloud.com](mailto:maxcatmur@icloud.com) | +44 7507 968831 | 54 Derby Road, London, E18 2PS | [linkedin.com/in/maxwell-catmur-1475a2209](http://www.linkedin.com/in/maxwell-catmur-1475a2209)

# Profile

MPhys Physics (expected First, July 2026). Aspiring Graduate Electrical Engineer with hands-on circuit design, MATLAB/Simulink modelling and LabVIEW PID control experience, plus data capture and analysis. Willing to be on-site 4–5 days per week and to undergo Baseline Personnel Security Standard and higher security vetting.

# Education

**MPhys Physics – University of Warwick October 2022 – July 2026**

**Grade:** First (expected)

* Relevant modules: electromagnetism, control systems, scientific high-performance computing, and advanced mathematical methods.
* Designed, built and tested a DC voltage regulator circuit using op-amps and MOSFETs; performed bench tests and iterative design adjustments.
* Co-developed a LabVIEW stabilisation algorithm implementing PID control for a nodding-donkey system; recorded performance metrics and tuned control parameters.
* Performed large-scale numerical simulations (MATLAB/Python) including 10,000+ runs for orbital-stability studies, applying automated post-processing and data analysis techniques.

**A-levels – Forest School September 2020 – July 2022**

**Grade:** A\*A\*A\*A\*A\* (Maths, Further Maths, Physics, Chemistry, Extended Project)

* Received sixth-form valedictorian award for best academic performance.
* Extended Project (5000 words) on energy technologies and climate mitigation, awarded 100%; developed technical writing and literature review skills.
* Presented project findings to 160+ students and staff, demonstrating clear verbal communication of technical material.

# Work Experience

**Undergraduate Researcher**

Warwick Mathematics Institute **June 2025 – October 2025**

* Modelled finite-difference schemes for wave propagation across 100+ aeroacoustics simulations using MATLAB; compared accuracy and computational cost.
* Analysed numerical dispersion and stability for ten high-order schemes, producing quantitative performance comparisons to guide method selection.
* Prepared and presented a technical poster summarising methodology and results to academic peers, demonstrating technical reporting and data-visualisation skills.

**Project Manager**

Warwick Aerospace Society **January 2024 – March 2025**

* Led a 12-member team to develop an ultra-high-frequency ground station prototype, coordinating multidisciplinary sub-teams and schedules.
* Authored 30+ pages of design documentation, bills of materials and test plans to support prototype build and verification.
* Implemented MATLAB/Simulink models for rotator control and half-duplex communication, and established GitHub version control for model development.
* Coordinated procurement, assembly and system integration in a 10-week build cycle, supporting hands-on testing and fault diagnosis.

**Academic Coordinator**

Warwick Physics Society **March 2024 – March 2025**

* Delivered seven technical revision lectures and led weekly support sessions, translating complex concepts into accessible teaching.
* Organised a departmental event attended by 100+ students and faculty, managing logistics and technical briefings.
* Provided regular feedback and written summaries to students and staff, demonstrating clear written communication and documentation skills.

**RF Seekers Summer Intern**

MBDA UK **June 2024 – August 2024**

* Worked on SAR imagery processing in AESA radar systems; optimised a matched-filter implementation using FFT techniques, reducing runtime by 85%.
* Co-developed a MATLAB data-analysis application to support a performance campaign, enabling rapid post-processing and sanity checks against higher-fidelity models.
* Adopted professional software practices and version control (50+ commits); presented technical findings to 20+ colleagues, developing concise technical reports and slides.

# Projects

**AI CV Generator July 2025 – ongoing**

* Developed a Python application using OpenAI API to generate CVs and cover letters tailored to job descriptions, emphasising structured outputs for ATS compatibility.
* Used Pydantic for structured JSON output and docxtpl for automated Word document generation; implemented SQL databases to track applications and outcomes.
* Measured ATS performance (scored >50% on multiple checkers) and iteratively improved parsing and keyword matching; supported evidence-based evaluation of CV wording.

**Drinks Ordering Web App August 2018 – September 2018**

* Built a web application (AJAX) to manage orders at an event of 100+ guests, processing 80+ orders and eliminating queues through asynchronous updates.
* Implemented front-end and back-end integration to capture user inputs, update order status and log transactions in a lightweight database.
* Received positive usability feedback from event staff and two software engineers, demonstrating rapid prototyping and end-user testing.

# Skills

**Languages**: Python, MATLAB, Simulink, C, SQL, JavaScript, HTML/CSS.

**Libraries:** NumPy, SciPy, Matplotlib, pydantic.

**Tools:** LabVIEW, Git / GitHub, Microsoft Office, Origin Pro, docxtpl.

**Soft Skills:** Analytical thinking and problem-solving, Technical report writing and presentations, Collaborative multidisciplinary teamwork, Attention to detail and methodical testing, Adaptability and proactive initiative.

**Interests:** Power engineering (motors, batteries, variable speed drives) — interest and academic exposure, Embedded systems and firmware basics, Defence, maritime and naval systems (UK MOD standards — keen to learn).