Maxwell Catmur

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# Profile

Quality Graduate (MPhys Physics, University of Warwick, expected July 2026) with strong analytical ability and advanced MS Office (Excel, Word, PowerPoint) skills. Experience in data analysis, reporting, stakeholder communication and following documented procedures. Enthusiastic, safety-aware and keen to support QHSES and quality management activities.

# Education

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

**Grade:** First (expected)

* Strong academic record: 85% (Year 1), 89% (Year 2), 82% (Year 3).
* Relevant modules: scientific and high-performance computing, advanced mathematical methods, fluid mechanics and control systems.
* Investigated metastability of nucleation in the 2D Ising model using dozens of Monte Carlo simulations; co-authored a short paper with two peers.
* Numerically solved partial differential equations in C using finite-difference methods to model industrial heat flow (assessment: 95%).
* Co-developed a LabVIEW stabilisation algorithm for a nodding-donkey system, implementing PID control and extending functionality (assessment: 86%).

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

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

* Sixth form valedictorian for academic performance.
* Extended Project (5,000 words) on renewable energy, nuclear power and geoengineering achieving 100%.
* Presented research to a cohort of 160+ students and staff, demonstrating clear verbal communication and engagement.

# Work Experience

**Undergraduate Researcher**

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

* Modelled finite-difference methods for wave propagation across 100+ aeroacoustics simulations, monitoring numerical stability and performance.
* Analysed and reported comparative performance of 10 high-order schemes in MATLAB, identifying trade-offs between accuracy and computational cost.
* Prepared concise technical outputs and presented findings at an internal poster event to academic stakeholders.

**Project Manager**

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

* Managed a 12-member team delivering a proof-of-concept UHF satellite ground station, defining milestones and tracking progress using Git and project documentation.
* Produced 30+ pages of technical documentation and weekly reports for senior leadership, ensuring traceability of decisions and materials.
* Coordinated procurement, assembly and testing within a 10-week timeline, implementing processes to reduce rework and meet project goals.
* Introduced structured version control and task allocation to improve collaborative workflows and documentation consistency.

**Academic Coordinator**

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

* Delivered seven revision lectures and ran weekly academic support sessions, organising training materials and monitoring student progress.
* Coordinated a 10-year anniversary talk attended by 100+ students and academics, liaising with senior stakeholders and guest speakers.
* Provided administrative support for educational activities, ensuring sessions followed documented procedures and received positive feedback.

**RF Seekers Summer Intern**

MBDA UK **June 2024 – August 2024**

* Worked on SAR imagery processing chains in the Modelling and Algorithms team; optimised a matched-filter implementation using FFT, reducing runtime by 85%.
* Co-developed a data-analysis application used by six colleagues to accelerate post-processing and rapid sanity checks against higher-fidelity algorithms.
* Researched relevant literature to support algorithm development and communicated technical progress in a placement review to 20+ colleagues.

# Projects

**AI CV Generator July 2025 – ongoing**

* Developed a CV and cover-letter generator in Python using OpenAI's API, producing structured JSON output and Word documents via docxtpl.
* Implemented SQL databases to store application records and track progress, enabling simple reporting and monitoring of outcomes.
* Validated ATS compatibility using external checkers and iterated templates to improve match rates for keywords and role-specific phrasing.

# Skills

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

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

**Tools:** Microsoft Excel (data processing reporting), Microsoft Word, PowerPoint, Git / GitHub, LabVIEW, Origin Pro.

**Soft Skills:** Analytical thinking and problem solving, Effective verbal and written communication, Stakeholder engagement and collaboration, Attention to detail and following procedures, Enthusiastic, adaptable and willing to learn.

**Interests:** Machine learning, Amateur radio, Tennis, Chess.