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) | [github.com/mcatmur32](https://github.com/mcatmur32)

# Profile

MPhys Physics (expected First) seeking Graduate Software Engineer 2025 role at SS Analytical, coding and problem-solving experience in Python and MATLAB, with Git-based version control, exposure to Agile practices, testing and CI/CD concepts, and a strong interest in financial services and regulatory compliance.

# Education

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

**Grade:** First (expected)

* Relevant modules: scientific and high-performance computing, advanced mathematical methods, numerical methods and simulation.
* Investigated nucleation metastability in the 2D Ising model using dozens of Monte Carlo simulations in MATLAB; co-authored a short paper within three weeks.
* Numerically solved partial differential equations in C via finite-difference methods to model industrial heat flow (95%).
* Developed N-body integrator in Python running 10,000+ simulations and performed advanced stability analysis (MEGNO) and post-processing.
* Co-developed PID stabilisation algorithm in LabVIEW for a nodding-donkey system; implemented control logic and extended functionality (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 top academic performance.
* Completed a 5000-word extended project on mitigation of climate change (100%), demonstrating research, analysis and reporting skills.
* Presented research to 160+ students and staff, receiving strong feedback and demonstrating clear communication.

# Work Experience

**June 2025 – October 2025**

**Undergraduate Researcher**

Warwick Mathematics Institute

* Modelled finite-difference schemes for wave propagation across 100+ aeroacoustics simulations in MATLAB, analysing accuracy versus computational cost.
* Benchmarked and analysed performance of 10 high-order numerical schemes, optimising selection for accuracy and efficiency.
* Documented code and results to ensure reproducibility and presented outcomes via a departmental poster.

**January 2024 – March 2025**

**Project Manager**

Warwick Aerospace Society

* Led a 12-member team to design and build a proof-of-concept UHF satellite ground station; coordinated four sub-teams and weekly meetings to deliver within 10 weeks.
* Introduced GitHub-based version control for model development, authored 30+ pages of technical documentation and produced a detailed bill of materials.
* Implemented MATLAB/Simulink modelling for rotator control and led integration testing and debugging during the build phase.
* Reported progress to senior leadership and ensured project milestones and quality standards were met.

**June 2024 – August 2024**

**RF Seekers Summer Intern**

MBDA UK

* 10-week placement in the Modelling and Algorithms team working on SAR imagery processing within AESA radar systems.
* Optimised a matched-filter algorithm in MATLAB using FFT, reducing runtime by 85% and materially improving system performance.
* Co-developed a data-analysis application used by six colleagues to rapidly analyse range–Doppler images and integrated a mid-fidelity algorithm for quick sanity checks.
* Delivered 50+ commits using professional version control practices and presented technical outcomes to 20+ colleagues.

# Projects

**AI CV Generator July 2025 – ongoing**

* Built a CV and cover-letter generator using OpenAI's API in Python; used Pydantic for structured JSON output and docxtpl to produce Word documents.
* Implemented SQL databases to track applications and progress; achieved scores above 50% on three ATS-checker sites and resulted in two job offers from 200 applications.
* Applied iterative testing, input validation and Git-based version control to improve reliability and reproducibility.

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

* Developed a web app to process party drink orders, handling 80+ orders over six hours and removing queues using Ajax for asynchronous updates.
* Implemented backend order processing and status updates and iterated the UI following user feedback.
* Received positive feedback from two software engineers and all bar staff for reliability and usability.

# Skills

**Languages**: Python, MATLAB, C, SQL, JavaScript, HTML, CSS, JSON, Willingness to learn C# / .NET.

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

**Tools:** Git, GitHub, LabVIEW, Visualisation and analysis (Origin Pro), Version control, Familiarity with unit/integration testing concepts and CI/CD workflows, Exposure to Agile/Scrum practices and issue tracking.

**Soft Skills:** Analytical thinking and problem-solving, Teamwork and collaboration, Clear written and verbal communication, Proactivity and adaptability, Attention to detail and quality focus.

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