

# Cameron Williams

Mechanical Engineer (Undergraduate)

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## Professional Summary

Final year BEng Mechanical Engineering student at Cardiff University with a strong interest in computational engineering, particularly in mathematical modelling, analysis, and simulation of physical systems. I've applied Python-based analytical methods to real-world problems through collaborative work with Xtrac for my final year project, developing algorithms and software for accelerated fatigue testing. Having gained industry experience in computer-aided engineering (CAE), I'm eager to develop my skills through industry experience and further study.

## Experience

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| <b>Xtrac</b> , Analysis and Simulation Engineer Internship                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Thatcham, UK<br>Jun – Aug 2025 |
| <ul style="list-style-type: none"> <li>Developed Python-based mathematical models to condense duty cycles for accelerated gear fatigue testing. Expanding this work through my final-year project in a formal collaboration, and building a new dedicated software tool to integrate analysis methods.</li> <li>Conducted FEA on mechanical components using rigorous techniques to meet company standards. Presented results in team meetings, proposed design improvements, and authored detailed technical reports.</li> <li>Analysed track telemetry data to evaluate quality and reliability, producing ISO-compliant duty cycles to support project specifications.</li> </ul> |                                |
| <b>KLA (formerly SPTS Technologies)</b> , Work Experience Placement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Newport, UK<br>Jun 2018        |
| <ul style="list-style-type: none"> <li>Assembled capital semi-conductor equipment in a Class 10 cleanroom, implementing gas delivery pipework and vacuum instrumentation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |

## Education

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| <b>BEng</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Cardiff University</b> , Mechanical Engineering                                                                               | Sep 2023 – Jun 2026<br>(expected) |
| <ul style="list-style-type: none"> <li><b>Final Year Project:</b> Secured collaboration with Xtrac in developing algorithms for condensing duty cycles for accelerated gear fatigue testing, and building a new dedicated software tool to integrate the analysis.</li> <li><b>Gearbox Design Project:</b> Determined specifications using MATLAB for hand-calculations. Optimised design by reducing mass, using FEA to assess strength and misalignment in gear meshing.</li> </ul> |                                                                                                                                  |                                   |
| <b>N/A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>University of Southampton</b> , Engineering Foundation Year                                                                   | Sep 2021 – Jun 2023               |
| <ul style="list-style-type: none"> <li>Literature reviews: 'Smart Cities', focusing on IoT and predictive AI; and renewable heating solutions for an Engineers Without Borders challenge.</li> </ul>                                                                                                                                                                                                                                                                                  |                                                                                                                                  |                                   |
| <b>A-Levels</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Monmouth Comprehensive School</b> , Maths (A), Biology (B), Chemistry (C), Welsh Baccalaureate (B)                            | Sep 2019 – Jul 2021               |
| <b>GCSEs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Monmouth Comprehensive School</b> , 12 A*-B, including: Maths (A*), Physics (A*), Computer Science (A*), English Language (A) | Sep 2017 – Jul 2019               |

## Part-time Work & Extra Curricular

- Pizza Chef (Jul 2021 – Feb 2025):** Exceeded under pressure in busy kitchens while upholding quality and safety standards. I led pizza masterclasses and was commended for my ability to engage children with additional needs.
- BUKC and Tennis:** I thrive from the adrenaline of racing, competing at circuits across the UK and achieving a best result of 5th place out of 36. Away from the track, I enjoy engaging in social tennis matches at University.