

# Callum Whitfield

Graduate Mechanical Engineer

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MEng Mechanical Engineering graduate from Loughborough University with a **12 month Year in Industry placement** at Rolls-Royce. Contributed to thermal analysis on **4 gas turbine components**, modelled **18 parts in CATIA V5**, and supported rig testing valued at **£2.3 million**. Proficient in SolidWorks, ANSYS, and GD&T, with a **First Class Honours (73% average)** and IMechE graduate membership on the IEng pathway.

## EXPERIENCE

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**Mechanical Engineering Placement Student**, Rolls-Royce, Derby

Jul 2024 – Jun 2025

Completed a 12 month Year in Industry placement within the thermal systems team at Rolls-Royce Civil Aerospace.

- Performed thermal analysis on **4 gas turbine components** using ANSYS Mechanical, identifying a cooling improvement that reduced peak temperature by **8%** on one turbine blade geometry
- Created and modified **18 3D models** in CATIA V5 for turbine casing and seal assemblies, issuing drawings to GD&T standards
- Supported a **£2.3 million thermal rig test**, assisting with instrumentation setup, data logging, and post-test analysis over a **6 week campaign**
- Presented monthly progress updates to a team of **12 engineers** and contributed to 2 formal design reviews

**Engineering Workshop Assistant (Part-time)**, Loughborough University, Loughborough

Oct 2023 – Jun 2024

Assisted workshop technicians with manufacturing support for student projects.

- Operated CNC milling machines and manual lathes to produce **30+ components** for Formula Student and undergraduate projects
- Maintained workshop equipment and supported **80 hours of supervised lab sessions** per semester

## EDUCATION

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**MEng (Hons) Mechanical Engineering in Mechanical Engineering**, Loughborough University, Loughborough

Sep 2021 – Jul 2026

Graduated with First Class Honours (**73% average**). Programme accredited by IMechE for IEng and partial CEng.

- Final year project on topology optimisation of a lightweight bracket using ANSYS, achieving **22% mass reduction** while maintaining factor of safety above 2.0, graded **78%**
- Group design project (team of 6): designed and manufactured a Formula Student rear suspension linkage, achieving a **14% weight saving** over the previous year's design

## SKILLS

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SolidWorks, CATIA V5, ANSYS Mechanical & Fluent, AutoCAD, GD&T (BS 8888), Thermal Analysis, FEA & CFD, CNC Machining, Tolerance Stack-up Analysis, Technical Report Writing, MATLAB, Microsoft Excel

## CERTIFICATIONS

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**IMechE Graduate Member (GradIMechE)**, Institution of Mechanical Engineers

Sep 2025 – Sep 2025

**CSCS Green Card**, Construction Skills Certification Scheme

Jun 2024 – Jun 2024

## LANGUAGES

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English - Native

## PROJECTS

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### Formula Student Rear Suspension Linkage (Group Design Project)

*Sep 2025 – Apr 2026*

Led the stress analysis and FEA validation within a team of 6 for Loughborough's Formula Student entry.

- Designed a wishbone assembly in SolidWorks and validated with **12 FEA load cases** in ANSYS
- Achieved a **14% weight reduction** compared to the previous year's design while meeting a minimum factor of safety of 1.5
- Produced **8 manufacturing drawings** to BS 8888 for CNC machining of aluminium components

## EXTRA CURRICULAR ACTIVITY

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### Loughborough University Formula Student Team

*Oct 2022 – Jun 2026*

Active member for 4 years, progressing from general team member to suspension sub-team lead in the final year.

- Competed at **Formula Student UK 2025** at Silverstone, finishing **12th overall** out of 78 entries