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Liam Huckle

Education

University of Leeds, School of Mechanical Engineering, 2019 – Present, M. Eng Aeronautical and Aerospace Engineering, 4th year

Year 1 Modules:	Year 2 Modules:	Year 3 Modules:	Year 4 Modules:
Computers in Engineering Analysis	Vibration and Control	Aerospace Vehicle Design	Computational Fluid Dynamics (CFD) Analysis
Design & Manufacture 1	Design & Manufacture 2	Aerodynamics and Aerospace Propulsion	Aerospace Systems Engineering
Thermofluids 1	Thermofluids 2	Aerospace Flight Mechanics	Aerospace Structures
Solid Mechanics	Engineering Mechanics	Finite Element Methods of Analysis	Rotary Wing Aircraft
Engineering Materials	Mechatronics and Measurement Systems	Individual Engineering Project (Immersive CPU cooling)	Engineering Psychology & Human Factors
Engineering Mathematics	Economics and Management		Team thesis (Industry Link: Rolls-Royce)

Redhill High School – Johannesburg, South Africa, 2010 – 2018, National Senior Certificate

Average of 85% across 7 subjects including: Mathematics 91%, Physical Sciences (chemistry and physics) 87%, Geography 94%

Academic Projects

Year 4: Team project thesis – Rolls-Royce served as the industrial supervisor for this project, offering a serpentine cold plate heat exchanger design for optimisation. Our team employed multi-objective design optimisation to identify an optimal cold plate design that met the performance criteria set by Rolls-Royce. In my role as a CFD specialist, I developed a fully parameterized CFD simulation of the heat exchanger to generate data for the multi-objective surrogate model. I applied my skills in CAD modelling, thermofluids theory and Ansys software packages in this project.

Year 3: UAV drone – Part of a team of 15, working on creating a mid-sized (18 kg) UAV drone capable of delivering payloads. Many design considerations were made and evolved as our team revised our design. Key aspects included material choice that offered weight savings, affordability, and manufacturability. I had the leading role in translating our concept design measurements into a physical CAD model. I verified the UAV constraints with every design change. In addition to this, working in a large team was challenging and required a great deal of patience when doing so remotely.

Technical Skills

- SolidWorks (CSWA)
- MATLAB
- Ansys Fluent
- Renishaw QuantAM
- Abaqus FEA
- Ansys SpaceClaim

Work Experience

3D Metalforge LLC (July 2022 – December 2022)

Employed as an operations Intern at an additive manufacturer primarily targeting the oil and gas sector. My responsibilities and experience at 3DMF include:

- Operating and maintaining both polymer and powder bed fusion 3D printers
- Troubleshooting of equipment and process issues
- Scheduling equipment downtime/maintenance and relaying this to management
- Designing/viewing client parts and determining the viability of production
- Continuously improving process parameters for metal additive manufacturing
- Supporting external collaboration projects for new products or process development works
- Documenting data and submitting project results in a timely manner

Key Employability Skills

- Responsibility & accountability – for example, as a pilot, inspection of the aircraft, determination of airworthiness and maintenance of passenger safety; and with 3DMF, compliance with strict operational standards and handling of hazardous materials for additive printers in a safe manner
- Adaptability – able to remain calm and focused under high stress scenarios
- Teamwork – for example, at university, working with fellow students on collaborative tasks and organising workflow efficiency; and at 3DMF, collaborating with senior engineers in challenging time zones (USA-Singapore).
- Problem Solving – for example, at 3DMF, strong technical insight and creative acumen was essential to optimise the orientation and subsequent support lattice for additively manufactured parts
- Verbal Communication Skills – for example, as a pilot, exchanges with Air Traffic Controllers and general air traffic, and more generally, multiple collaborative projects during high school, university and industry
- IT – experienced user of MSOffice applications including Excel and Word
- Structured communication – thesis investigating and optimising heatsink design for single-phase immersion coolers used in large-scale datacentres.

Personal Achievements

- Obtained a Private Pilot's Licence (PPL) at age 18 – over 100hrs total flight time
- Placed in the top 1% of students for Geography in South Africa (National Senior Certificate)
- Starting line-up for Redhill High School Rugby 1st Team - best backline player (2015)
- Over 50hrs of community service – various community upliftment projects

Interests and Hobbies

- Student affiliate of the Royal Aeronautical Society
- Keen sportsman, particularly: rugby, football and competitive Esports
- Aviation enthusiast (pilot)
- Playing guitar for dexterity and relaxation

References

Academic:
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Work experience:
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