
Education

MEng Aeronautical Engineering with a Year Abroad

2020 - 2024

Imperial College London | Massachusetts Institute of Technology (final year)

- Achieved first and second year results equivalent to first class honours (81.43% and 78.13% respectively)
- Regularly use StarCCM+, C++, and MATLAB on high-performance servers for simulations and data analysis
- Sponsored by the IMechE James Clayton Undergraduate Scholarship

A-Levels in Maths, Further Maths, Physics, Product Design (A*, A*, A*, A*)

2018 - 2020

Peter Symonds College, Winchester

- Completed a grade A* extended project qualification investigating ion propulsion of spacecraft and aircraft

Experience

Summer Intern, Simulation & Modelling

06/2022 - 08/2022

MBDA Missile Systems, Stevenage

- Delivered improvements to a high-fidelity Simulink model and evaluated use of alternative programming paradigms
- Identified and reported errors in the model, independently resolving the majority of issues immediately
- Developed new methods for protecting company IP using C++ code generation on complex Simulink models
- Carried out verification studies utilising more than 2000 core-hours on an industrial high-performance cluster

Undergraduate Research Opportunity | 'GPU Parallelisation of a 2D Navier-Stokes Solver'

06/2021 - 08/2021

Imperial College London, Department of Aeronautics, Dr Sylvain Laizet (Supervisor)

- Profiled performance of a 2D flow solver in Fortran and C++, across different compilers and architectures
- Successfully adapted the C++ program using SYCL to accelerate computation on heterogeneous systems
- Understood the tenets of GP-GPU computing and explored the relevant frameworks in Fortran and C++
- Executed verification studies on cloud-based, high-performance, heterogeneous computing clusters

Lead Aerodynamics and Simulations Engineer

10/2020 -

Imperial College London Rocketry, Altitude Record Team

- Succeeded in breaking the UKRA altitude record for an I-Class rocket
- Conducted CFD studies for transonic flight regimes using StarCCM+, with mesh sizes in excess of 3 million cells
- Negotiated sponsorship with ESTECO, acquiring licenses to modeFrontier optimisation software
- Integrated Python, openRocket, and StarCCM+ workflows into modeFrontier and performed design optimisation, contributing to our record-breaking effort
- Explored and evaluated capabilities of alternative CFD codes, including SU2 and openFoam
- Currently evaluating verification and validation processes, due to difficulty attaining relevant real-world data

Duty Manager

03/2020 - 01/2021

The Food Warehouse, Basingstoke

F1inSchools Alumnus, Judge, and Event Volunteer

2017 -

- Achieved 5th place at the 2017 World Finals in Kuala Lumpur, Malaysia, out of 51 global teams
- Inspire the next generation of engineers by mentoring current teams in engineering and professional skills
- Volunteer regularly at regional, national, and world finals since 2019