

EDUCATION

University of Cambridge, Clare College

Oct 2022 – Jun 2026

MEng, BA Chemical Engineering via Natural Sciences • First Class

Cambridge

- **Plant design:** Process coordinator for a five-person team designing a 20,000 tpa, 99% purity biobutanol plant from wheat feedstock, integrating the process areas and balancing local optimisation against whole-plant performance.
- **Fermentation design lead:** Modelled and optimised fermentation and solvent recovery in MATLAB and Aspen Plus; specified all equipment, wrote the control philosophy and start-up/shutdown procedures, produced AutoCAD layouts, and conducted a HAZOP and relief-stream analysis.
- **Dissertation:** Developed a new protocol for producing stable lipid membrane models (GUVs) at low temperatures; analysed fluorescence microscopy data and showed that dye localisation skews fluidity measurements.
- **CFD study:** Modelled two Fontan procedure connection geometries in Ansys, comparing power loss, wall shear stress and hepatic flow distribution.
- **Sustainability analysis:** Assessed algae-based polymers as replacements for food-packaging barrier films, including exergy hotspot calculations across a cradle-to-grave lifecycle and a stakeholder analysis.
- **Literature review:** Reviewed recent Metal-Organic Framework drug-delivery research and its barriers to clinical use.

The London Oratory School

Sep 2015 – Jun 2022

A-levels: Mathematics A*, Further Mathematics A*, Chemistry A*, Physics A*

London

GCSEs: 12 subjects at grades 8–9 including Maths, Sciences, English, Spanish, French, Latin and Ancient Greek; FSMQ A

EXPERIENCE

FairHeat

Jun 2025 – Sep 2025

Junior Engineer, Summer Intern

London

- Tested a large-scale techno-economic district heating model against operational customer data, reducing it to its core equations to show where its assumptions were conservative.
- Ran feasibility scenarios for proposed UK heat networks, assessing pipe sizing, pressure requirements, cost and payback across different customer numbers.
- Worked in a six-person team assessing a modular energy centre for around 70 GWh of annual heat demand (ASHPs and gas boilers), drafting site layouts in AutoCAD.
- Updated seven RIBA Stage 3 LTHW schematics in AutoCAD following a HAZOP and built reusable valve symbols and templates for future drawings.
- Learnt Power Automate independently to replace the Excel site-visit process, cutting reporting time from about six hours to under thirty minutes; tested it with the site team and trained colleagues so it was taken up across FairHeat.
- Wrote Python code to process a year of Met Office data into wind roses informing air-source heat pump layouts, and standardised pipe sizing for large-diameter (DN300+) pipework in Excel.
- Wrote a cyber-security specification clause and 10-page design supplement for clients' building services.

Places Leisure, Tooting Bec Lido

Jun 2022 – Sep 2022

Place-Maker

London

- Helped less tech-confident customers adopt a new online booking system; set up stock reordering for the pool shop.

SKILLS

Modelling

Aspen Plus | MATLAB | Ansys (CFD) | Python | Excel

Design & safety

AutoCAD (layouts, schematics) | HAZOP | Control Philosophy | Relief Analysis

Other

Power Automate | Fluorescence Microscopy | ImageJ | Lifecycle and Sustainability Assessment

ACHIEVEMENTS & ACTIVITIES

- **Awards:** Pressed Steel Prize for Engineering (2024, 2025) for over 75% in exams; Clare College Foundation Scholarship (2024, 2025); Clare College Honorary Scholarship (2026).
- **Clare College Amateur Golf Society:** Founded the society, secured college funding and ran fortnightly range trips and socials for 20+ mostly beginner members; it continues under a new committee.
- **Rowing:** 2016–2022, captaining a boat at Henley Royal Regatta in 2022.
- **Leadership & volunteering:** Vice Chair, Science Society of the London Oratory (2021–22), organising guest lectures; Gold Duke of Edinburgh's Award; helped elderly neighbours with practical tasks (2012–2024).

British, Irish and Australian citizenship | Clean UK driving licence | CSCS trainee card