

# Paul Cohen | Mechanical Design Engineer

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*Hard-working and highly motivated engineer, with key strengths in CAD modelling, structural analysis and project management. Pursuing a career in the areas of product and machine design, with a focus on sustainable engineering.*

## Education

### Emmanuel College, University of Cambridge

Cambridge, UK

*M.Eng. Mechanical Engineering, **Distinction***

2013–2017

Covered a general engineering syllabus for the first two years, before specialising in mechanical design in the final year. Achieved 1st class grades in all years.

### Massachusetts Institute of Technology

Cambridge MA, USA

*Cambridge-MIT Exchange, **GPA 4.9/5.0***

2015–2016

Specialised in mechanical design and manufacturing, including precision machine design, finite element analysis, electromechanical system design, and design for manufacturing, as well as an English literature course at Harvard.

### Haberdashers' Aske's Hatcham College

New Cross, London, UK

*A-level: Maths, Further Maths, Physics, Chemistry, **A\*s***

2011–2013

## Experience

### Vocational

#### Alloy Product Development

San Francisco CA, USA

*Mechanical Engineering Intern*

Nov 2017 – Nov 2018

Alloy Product Development is a mechanical design consultancy based in San Francisco, California. They specialise in innovative mechanism design and tightly-packaged consumer electronics, working at all stages of the product development process. An initial 3-month internship was extended twice, to the maximum 1 year allowed by the visa. Responsibilities and activities included:

- Ownership of a complex mechanical subsystem for 9 months, designed to withstand high stresses (250kg load, 12 year outdoor lifetime, high-voltage electronics). Providing onsite support at the client as part of a 10-person team from Alloy; liaising with vendors in China, managing quality control and tooling modifications; pushing design changes for DFM and DFA purposes; designing test plans and rigs to meet regulatory requirements; managing priorities and expectations with the client in weekly meetings.
- Prototyping new designs and test rigs in metal, plastics, and wood using hand-tools, CNC machines and additive manufacturing processes.
- Designing and building custom test rigs to validate client engineering requirements; writing scripts in Python for automatic data analysis and presentation.
- Extensive use of top-down 'master modelling' practices in Creo 3.0 CAD software and use of ANSYS FEA software.

#### Frazer-Nash Midhurst

Petersfield, UK

*Mechanical Engineering Intern*

Jul-Sep 2016

Frazer-Nash is a precision engineering and design company that specialises in the food industry. I worked in both the drawing office and on the factory floor. Responsibilities included:

- Developing the concept design for a 3D-printed horseshoe. Modelling in Autodesk Inventor and Magics; setting up and running builds on Renishaw AM250 SLM machine; working closely with stakeholders to inform design.
- Turning parts on a manual lathe from engineering drawings. Included various materials (stainless and alloy steels, aluminium bronze, aluminium), to tolerances as low as 0.013mm.
- Detailing engineering drawings of parts and assemblies, to be machined in house.

## Global Maritime Consultancy Ltd.

London, UK

Intern

Aug-Sep 2016

A marine, offshore and engineering consultancy. Based in the Design department, I worked with Naval Architects, Civil Engineers and Draughtspersons. Projects undertaken included:

- Using Autodesk Inventor to create parametric models to be used in concept design visualisations.
- Investigating the stress analysis capabilities of Inventor compared with GeniE, by recreating a crane pedestal in each programme and applying systematic tests.
- Verifying and modifying calculation tools for vessel structure design.
- Applying quality assurance controls to ensure compliance with American Bureau of Shipping classifications.

## Miscellaneous and Voluntary

### Self-employed

London, UK

Maths and Physics Tutor

Jan 2019 – present

Tailoring lessons to each student to help them achieve their potential, specialising in A-level and IB Physics and Maths.

### Samos Volunteers

Samos, Greece

Volunteer

Sep 2019

Samos Volunteers provides psychosocial support for asylum seekers who are trapped in dangerous conditions in the refugee camp on Samos. I helped them deliver their services - teaching lessons in their adult learning centre, washing laundry to improve basic hygiene, and assisting the smooth running of the community centre.

### Oxfam Bookshop

Greenwich, London, UK

Store volunteer

Jan 2019 – Jun 2019

Oxfam is an international charity fighting poverty around the world, known for its distinctive and high-quality charity shops. I worked 2 days a week at their bookshop in Greenwich, where I was in charge of stocking and managing the Academic section of the bookshop as well as dealing with customers and sorting donations.

## Projects

### University of Cambridge

Cambridge University Eco Racing

Oct 2016 – Oct 2017

CUER is a student organisation that designs, builds, and races solar powered vehicles. As one of two co-heads of the mechanical team, I was responsible for the design and fabrication of various mechanisms and structural parts, including the solar panel reconfiguration system, door mechanism, and key structural components. I was also responsible for leading and mentoring a design team of 8 students

### Massachusetts Institute of Technology

2.009: The Product Design Process

Sep – Dec 2015

Technical team leader for the development for an innovative rock climbing product, as part of team of 22 students.

- Chaired team meetings; organised subteams; designed and prototyped concepts; managed \$6500 budget.
- Fielded technical questions from audience of 1100. Voted 2nd out of 8 teams by audience.
- Obtained provisional patent on technology.

## Skills and Awards

### Languages

- French
- C++
- Python
- Matlab
- Excel VBA

### 3D Modelling

- Solidworks
- Inventor
- Creo
- ANSYS
- MasterCAM

### Competencies

- Mechanical Design
- Injection Molding
- Project Management
- CAD modelling
- Mill & Lathe machining

### Awards

- Ash Senior Scholarship
- Wallace Prize
- Rowley Mainhood prize
- College prize (Emmanuel)
- Frank Marriott Scholarship

## Interests

I am a keen cyclist, rock climber and bike polo player. I spent the last 8 months training for the NorthCape4000, a 4400km single-stage cycling race from Turin to North Cape, coming 6th out of 130 starters. I also enjoy listening to jazz, tinkering with bicycles, reading, spending time in museums, and exploring new cities.

## References

Available upon request.