

ALEX BENTON MEng

An experienced R&D engineer with a proven record in designing, analysing, fabricating, and optimising mechanical systems. Highly adaptable, proactive, and determined, with competencies through design for manufacturing, computational analysis and project management. A fast learner, with an excellent academic record and a broad knowledge base from technology development to management and strategy. Seeking to apply practiced engineering and commercial proficiencies to the development of key sustainable technologies.

Industrial Experience

- 2024 - 2025** **R&D Design Engineer** **Actuation Lab**
- Designing torque-amplifying, leak-free valves for hydrogen, developing and using a combined skillset of CNC machining, cost modelling, kinematic and static computational analysis, and mechanical system optimisation.
 - Achieving a 55% cost reduction of a core product on a first redesign effort.
 - A further 35% reduction by devising a simplified core mechanism.
 - Contributor to flow control patent, inventor on core mechanism patent.
 - Creation of an automatic cost estimation tool embedded in CAD software.
 - Authorship of core design control SOPs, enabling ISO 9001 accreditation.

- 2022 - 2023** **Research Assistant** **University of Cambridge**
- Involvement in the *Digital Shoestring* project, Institute for Manufacturing
 - Design and implementation of a [modular user interface](#) to enhance and unify the project's low-cost digital manufacturing solutions for SMEs.

- 2021 - 2022** **Industrial Projects*** **University Coursework**
- Creation of a machine learning tool for predicting supply chain delays.
 - Development of a web app for tracking job progress in a machine shop.
 - Design of a novel [pewter deposition](#) valve and a 3D-printed machine frame.
 - Programming of an assembly robot for an automatic manufacturing cell.

- 2019 and 2020** **Junior Developer** **Synergist Express**
- Automation of inter-software data transfers using VBScript, SQL, and 4D.
 - Analysis and modification of the production codebase for multithreading.

- 2017 - 2018** **Student Engineer** **Cambridge Design Partnership**
- Involvement in fifteen engineering design consulting projects.
 - Engaging in best design and V&V practice, giving context to academia.

Education

Year	Course	Grade	Notes
2018 - 2022	MEng Engineering		University of Cambridge
Fourth Year	Class I	MET*	MEng, Honours with Distinction
Third Year	Class I	MET	Ranked 2 nd in the MET Cohort
Second Year	-	General	Not examined, due to Covid-19
First Year	Class I	General	Ranked 1 st in Queens' College

2010 - 2017 **A Levels and GCSEs** **Cheadle Hulme School**

Four A*s at A-Level, in Maths, Further Maths, Physics, and Chemistry.
Ten A*s and one A at GCSE, including Maths, English and three sciences.

*a note on the Manufacturing Engineering Tripos (MET)

The first half of my degree covered the engineering fundamentals of mechanics, thermofluids, electronics, materials, structures, information, and so on. The final half focussed on a full range of design, manufacturing, management, and industrial activities, as well as undertaking substantial project work. I cannot imagine a better foundation for a career in industry.

Key Skills

Design // CAD (SolidWorks, OnShape,) CAM (Fusion,) BS 8888 drawings, CNC machining, rapid prototyping, design to pressure equipment standards, DfMA.

Analysis // Engineering calculations, strong mathematics, modelling and optimisation of mechanical systems.

Project Management // Planning, work delegation, and budget allocation.

Software Development // Data analysis and modelling with Python. Web development with React, JS, and Django.

Commercial // Knowledge of business and project management, IP, technology development, marketing, and strategy.

Communication // Compelling reports, presentations, and project deliverables.

Interests and Pursuits

Sports // 18,000 km of self-supported cycle touring through 25 countries. Captain of Bristol Bombers' mixed lacrosse team. Keen runner and climber.

Making // Projects include a full set of [bikepacking bags](#), a [CNC router](#), and a race-winning [cardboard boat](#), all made from scratch to novel designs.

Photography // Paid and hobbyist travel, event, and architecture photos.

Music // Singer in various choirs, bands, and jam nights. Limited but existent ability in songwriting, keys, bass, flute, and wind synthesiser.

Personal Details

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