

BEN SMITH

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PERSONAL PROFILE

I am a fourth-year mechanical engineering student at Strathclyde University with over twelve months of industrial experience in four different companies, looking to advance my technical skills, strengthen my professional mindset and push myself to succeed. I am a Certified Solidworks Associate (CSWA), with industrial and product design experience on Solidworks and Autodesk Inventor and ANSYS software.

EDUCATION

BEng Mechanical Engineering, First (Predicted), Strathclyde University, Sep 2017-Present

My degree has equipped me with a firm understanding of FEA and CFD analysis, CAD software, product design, manufacturing processes, material science, and programming, with an average grade of 86% over three years.

Final Year Project: Simulating Thermal Distribution During Friction Stir Welding

- Designed and implemented a transient thermal FEA model in ANSYS to characterise the thermal incompatibility during dissimilar material friction stir welding of aluminium and copper.

Team Project: Hydrokinetic Turbine

- Designed and built a hydrokinetic cross flow turbine, in a team of five third-year students, to acquire the maximum possible energy rate from a raised water supply.
- Took on the team manager role in the project, where I challenged the group to achieve our collective best, delegated roles relevant to individual strengths, addressed uncooperating members, and directed efforts to meet deadlines throughout the year.
- Created our full design assembly on Solidworks, programmed theoretical flow calculations on Matlab prepared components for 3D printing and laser cutting, and spent many hours above the required to improve and advance our design.

QUALIFICATIONS

- ✓ Certified SolidWorks Associate – Mechanical Design
- ✓ 3 Advanced Highers grade A: Physics, Mathematics and Music
- ✓ 5 Highers grade A: Physics, Mathematics, Chemistry, English and Music

WORK EXPERIENCE

Design & Inspection Engineer (Internship), Ritchie Precision Engineering Ltd, Jun – Sep 2020

- Due to my level of contribution to the company and capacity to progress in every area I was placed, I was offered a permanent position before graduating, effective immediately with an uplift on graduate salary.
- The Senior Manufacturing Engineer commended me on my ability to learn and apply knowledge rapidly and exceptional work rate, working several hours overtime each week and consecutive 13-hour days when deadlines were pressing.
- Played a key role during the business' two-fold expansion and opening of its second factory by taking on responsibility for designing fixtures, product inspection, procurement and client interaction.
- Gained immersive knowledge of management and cost reduction strategies utilised within fabrication businesses and the philosophy for sustaining strong customer relationships.
- Selected personally to scope out capabilities of newly purchased inspection software to increase the accuracy and throughput of the company's inspection stage.
- Conducted several ANSYS FEA simulations on components to resolve issues of compressive deformation and thermal expansion during manufacturing operations.

Product Design Consultant, OBADIAH Coffee Roasters, Aug 2019 – Jan 2020

- Contracted as sole product design consultant for Obadiah Coffee Roasters to design a bespoke sustainable coffee container for café functionality.
- Exceeded the expectations of my client in work rate and product quality, being the initiator of correspondence, setting targets, and continually re-evaluating our project strategy.
- Developed significant technical proficiency of design operations, coordinating the supply chain and process route.
- Dedicated over 120 hours, on top of my university studies, to developing the product, which is due to be launched later this year.
- Commended by Obadiah's founder for high productivity, technical knowledge and versatility, and our product gained significant interest when pitched in Australia to the board of coffee wholesaler Five Senses.

CAD Designer (Internship), Helia Photonics Ltd, May – Aug 2019

- Redeveloped their fixture to hold micron-thick semiconductor bars during thin-film coating processes and innovated the procedure of transferring the fragile bars between fixtures in a cleanroom environment.
- Designed cost-efficient components for a semiconductor SCARA robot, modelling and creating technical drawings and inspecting using CMM machines after fabrication.
- Managed projects covering 3D modelling, component procurement, and system installation, significantly advancing my experience of product regeneration.
- Learned the intricacies of design intent, using Autodesk Inventor extensively to create component geometry relevant to its fabrication process, tailoring it specifically to CNC milling, laser cutting and 3D printing.

Opto-Mechanical Engineer (Internship), Optos Plc, Nikon Group, Jun – Aug 2018

- Built and tested several opto-mechanical modules ready for integration into Optos' world leading retinal imaging instruments, gaining fluent understanding of each module's function within the system.
- Determined strategies for improving the production process by creating simpler designs and clearer manufacturing and building instructions in accordance with their technical requirements.
- Investigated the competency and reliability of modules through cyclic stress testing, heat tempering and fatigue assessment, enhancing my aptitude for performance analysis and product evaluation.

VOLUNTARY EXPERIENCE

Band & Production Coordinator, Hillsong Church Edinburgh, Jun 2018 – Present

- Organise our church worship band collective of forty singers, musicians and sound engineers, leading weekly rehearsals and equipment training, enhancing my methods of directing and coaching people.

ACHIEVEMENTS

- ✓ Dean's Certificate for Distinction in 1st, 2nd and 3rd Year Mechanical Engineering
- ✓ West Calder High School Dux, 2017
- ✓ John Tease Mathematics Award - Best Score in Higher Mathematics (99%), 2016
- ✓ Bronze Duke of Edinburgh, 2016

PERSONAL INTERESTS

Music: I play several instruments including piano, trumpet, guitar and drums, write and perform my own music, and have taught a special-needs student guitar. I played in my gold-standard school wind band for seven years and lead trumpet for three years. **Other interests** include weekly 5-a-side football, tennis and volleyball.

REFERENCES ARE AVAILABLE UPON REQUEST