

# Ben Ireland Sinclair

Lower Cottage, Shilstone, Modbury, Plymouth PL21 0TW

2 Ivy Place, Bath, BA2 1AR

Telephone: - Home 01548 830809- Mobile 07539783870

E-mail: - bis23@bath.ac.uk

## Personal statement

A creative, thoughtful, mature and hardworking student. Able to demonstrate flair and imagination with excellent analytical and problem-solving skills. Able to meet deadlines and organise time effectively. An extremely driven student with an extensive mix of skills and a long-standing interest in physics, maths and engineering and a passion for gaining a greater understanding of the world and its workings. Has the determination to succeed and is flexible to changing demands. Highly focused and motivated which makes him a respected member of the faculty.

## EDUCATION

### 2017 – 2022 University of Bath

**MEng (hons) Integrated Mechanical and Electrical Engineering with a year in industry placement**

#### 1<sup>st</sup> Year Modules

- Circuit theory
- Digital Electronics
- Mathematics 1 & 2
- Solid mechanics 1 & 2
- Thermodynamics:
- Design materials & manufacturing 1 & 2
- Robotics & mechatronic systems

### 2009 – 2017 Kingsbridge Community College, Devon

**A Levels:** Physics (A), Maths (A), Maths Mechanics (A), Product Design (B)

**GCSEs:** 11 GCSEs at grades A\*-B, including Physics (A\*), Maths (A\*), Product Design (A\*), Computer Science (A\*)

## ENGINEERING EXPERIENCE

- **Team Bath Racing Electric:** Currently working with Team Bath racing electric, designing low voltage components and sub-assemblies. I am currently reviewing previous years' circuit designs for evaluation and improvement.
- **University projects:** Undertook conceptual iterative design projects for several objects including a gearbox and a small automatic cone laying machine, as part of the Design Materials and Manufacturing module.
- **CAD Design:** Highly proficient in CAD Design. Actively use it for personal design work and at secondary school I designed a fire pit using CAD software which went through the manufacturing process and is currently still in use.
- **2015 - Work Experience at Yeo Valley Manufacturing Plant:** A one-week placement in the engineering and logistics department. I was given several tours and shown the operating principles of many of the pieces of plant machinery needed to run and maintain large factories.

- **Arc welding and agricultural machinery maintenance:** Familiar in the basics of Arc and MIG welding along with agricultural machinery maintenance from working alongside my father doing maintenance on lawn mowers, tractors and bicycles over many years.
- **Commercial Mulching Machine:** Produced a design for a waste paper reuse device with the restriction of being human powered. The resulting design was produced in a prototype with many parts being additively manufactured and CNC machined, this was completed as my final A2 project.

## ACHIEVEMENTS

### Academic and Educational

- Youngest scientist to be published in The Lancet, aged 10. With a team of young students, worked on an experiment to prove that bees can be trained to solve simple puzzles.
- In the summer of 2014 contributed to a team who produced prototypes for basic algae-based fluid reactors for solar panels that produced glucose. The development was taken to late stage with large scale test beds being constructed.
- Awarded Arkwright Scholarship in 2014 and received the accompanying grant. This further fuelled an interest in engineering and broadened interests from Aerospace Engineering through to Robotics, Mechanical Engineering and Physics.

### Additional Technical Courses

- Head Start/Nuclear Physics – Manchester University. Four-day course focussing on application of nuclear physics. Visiting the optical, nuclear and simulation labs. Also, Jodrell Bank radio telescope and Daresbury Laboratory to demonstrate the uses of a synchrotron light source and its applications in modern material science and research.
- Small Piece Trust – Aeronautical Engineering at Loughborough University. Overview of Mechanical, Aeronautical and Automotive Engineering, as well as Electronic, Electrical and Systems Engineering.

## COMPUTER SKILLS

- **General use:** Adept Knowledge of the Microsoft Office Suite of software, capable of producing professional documents and excel spreadsheet tools.
- **Programming:** Basic knowledge of programming languages, visual basic, MATLAB, system veri-log.
- **CAD and CAM:** Excellent knowledge of the CAD packages Solid works and Fusion 360 and consequent application of CAM to manufacture different models (3D CAD Mentor and advisor to students and staff at school).

## EMPLOYMENT

### Holidays/term times of 2015 - 2017 The Sportsman's Arms, Dartmouth

- Worked as a kitchen porter turning over up to 600 covers in a day, maintaining an efficient and professional work ethos in a highly pressurised environment.

### Summer 2018 The Beach and School House, Modbury

- Worked as a full-time kitchen porter and prep chef. I was part of an effective team within a high turnover, fast moving holiday cafe/restaurant.

## INTERESTS

- **Spare Time and hobbies:** Skiing, Walking, Climbing, Cycling, CAD modelling, Gaming, Reading, Politics.
- In possession of a 3D printer which I refurbished using 3D printed parts.
- **Academic areas of interest:** Keen interest in spaceflight especially regarding nuclear and other high energy propulsion mechanisms.

- **General:** Long standing interest in physics and gaining a greater understanding of the world around me.