Joshua Talks

Gonville and Caius College, Trinity Street, Cambridge, CB2 1TA | ✆(+44) 7851 823348 | ✉ joshuatalks96@gmail.com

Education

Gonville and Caius College, University of Cambridge **2018 – 2022**
BA (Honours), MEng, Information and Bioengineering

- First Year (2.1) – General Engineering
- Second Year (Ungraded due to COVID-19) – General Engineering

Royal Grammar School, Newcastle Upon Tyne **2009 – 2018**

- **A-levels:** Mathematics(A*) Further Mathematics(A*) Physics(A*) Chemistry(A*)
- **IGCSEs/GCSEs:** 10A*, 1A**

Skills

Python (NumPy, SciPy, Pandas, Pytest, Django), C++, JavaScript, SQL, HTML, CSS, Git. CAD (SolidWorks). Basic Mandarin

Work Experience

Software Engineer Intern, *PragmatIC (Cambridge)* **Jun 2020 – Aug 2020**

- Worked on a project to create a custom web-based data analysis dashboard using a Django web frame work, Python, Altair plots, JavaScript, HTML, SQL and CSS.
- The dashboard provided interactive visualisation and analysis of large data sets containing 100 000s of entries via user configurable Altair plots and data tables.

Design/Software Engineer Intern, *Huxley Bertram Engineering Ltd. (Cambridge)* **Jun 2019 –Sept 2019**

- Design Team: Worked with CAD on bespoke automated machinery projects solving design problems for an automated silicon chip production, a Vectura inhaler test unit, a high precision tablet press and a hydrogen aircraft panel permeability test unit.
- Software Team: Using Python to create an automated microscope inspection rig to detect and identify faults.

Work experience, *Soil Machine Dynamics, SMD (Newcastle)* **Apr 2017**

- Shadowed managerial team and engineers in the research and production facility. Observed design process; CAD, prototypes and technical drawings of a new ROV model.

Projects

Mine clearing Robot with Computer Vision **Nov 2019**

- Designed and built a robot integrating Mechanical (CAD), Electrical (EAGLE) and software engineering.
- Using C/C++ and Python to code an Arduino based robot that used computer vision combined with IR, ultrasound and hall effect sensors all mounted on a custom chassis to detect, map a route and collect mines.

Two stage Booster Rocket, *Cambridge University Space Flight (CUSF) Society* **2018 – 2020**

- Student-led team to design (CAD), test and manufacture a two stage Booster dart style rocket.
- Worked in Mechanical sub team on parachute release, fuel regulation and disconnection at launch.

Thermoelectric cooling clothing, *CUED 1A Product design project* **2019**

- Prize winner for the design challenge for an Aircon alternative, my design used the Peltier effect for wearable thermoelectric cooling clothes.

Real time UK Flood warning software project **Feb 2019**

- Python project to create a predictive flood warning system based on real current/past data for English rivers.
- Collaborative project using GitHub and PyTest unit tests for a test-driven development process.

Mars lander simulator software project **Jun 2019 – Aug 2019**

- C++/Python project to produce a dynamic simulation that used Euler/Verlet numeric integration to model principle forces from the equations of motion and control theory for an automatic landing procedure.

Package Collection Robot, *Cambridge University Robotics Mini (CUR mini)* **2018 – 2019**

- Integrated Design Project: Including manufacturing techniques, component design, Microcontroller and circuit design, C/C++ and component control, Presentation.

Automated Motor Controller Test Rig, *Team leader Big Bang UK Young Scientists and Engineers Competition* **2018**

- Used C/C++ and CAD to create a configurable automated test rig for a BorgWarner motor controller to increase the efficiency and affordability of production line quality inspection.
- Second place in National Senior Engineering category, Alan Dixon prize, Gold CREST award.

References available on request