

## EDUCATION

### MSc Artificial Intelligence; Imperial College London

Oct 2021 - Oct 2022

- Achieved 76.0% in the course modules.
- Courses taken in Computer Vision, Reinforcement Learning, Symbolic AI, Machine Learning, Deep Learning, Natural Language Processing, Robot Learning & Control and Machine Learning for Imaging (self-studied).

### BEng Mechanical Engineering (First); Imperial College London

Sep 2018 - Jun 2021

- Averaged 74.3% across the course and placed on the 2019 Dean's List (top 10% of cohort).
- Specialised in Embedded C for Microcontrollers, Computational Continuum Mechanics, Mechatronics, Machine Dynamics, Fluid Mechanics, and Engineering Design & Manufacture.
- Wrote a literature review on machine learning techniques for diagnosing Parkinson's Disease.

## SELECTED PROJECTS

### MSc AI Individual Project: *Depth-uncertainty estimation for surgical scenes*

Mar 2022 - Aug 2022

- Developed a monocular self-supervised model for predicting depth and its uncertainty, to help guide doctors during endoscopies by highlighting areas where the depth estimation is likely to fail.
- The final model was shown to match the performance of similar depth estimation models, while also predicting uncertainty with high accuracy.

### MSc AI Group Project: *Scalable brand sentiment tracking via public news*

Dec 2021 - Mar 2022

- Deployed a system for crawling news articles and tracking the public sentiment towards any brand using AWS.
- Developed the runners for extracting news articles daily from CommonCrawl using Fargate, and the sentiment prediction using EC2.
- Wrote the unit tests and pipelines for deployment via GitHub Actions.
- By the end of the project, we were processing over 500,000 news articles per day.

### BEng Final Year Project: *Biofuel Engine ECU*

Oct 2020 - Jun 2021

- Designed a control system to replace the current ECU on a Honda CBR motorbike engine that would allow it to run on ethanol, by optimising the fuel/spark timings.
- Led the design of the control system software, simulation tests and printed circuit board.

## EXPERIENCE

### Full-stack Developer; Lambda Feedback (Imperial College London)

Jun 2021 - Sep 2021

- Designed and deployed an online learning platform prototype for delivering problem sheets, using AWS.
- Developed a system for creating new grading scripts, which allows tutors to write their own code (in almost any language) and deploy it on AWS Lambda so they can tailor the platform to their course.
- Led the design of the database and wrapper for storing the sheet data as JSON documents.
- The project was given extra funding based off the prototype. It is now in alpha testing, which is being trialled in the Mechanical, Aeronautical, Physics and Biology departments. I continue to work on the project part-time.

### Software Developer; Imperial College London

Jul 2020 - Oct 2020

- Upgraded an online system for delivering and grading Fluid Mechanics problem sheets to students.
- Our team developed a set of python tools for mass-producing problem sheets from JSON files and a template, which reduced tutor workload as each sheet no longer needed a custom UI.
- I developed the schema and validation scripts for this system, and led the design of the template UI.
- The system has been used extensively in MechEng and was expanded to other courses.
- Invited back by supervisor to continue this work the following year (see above).

### Software Internship; Santander UK Technology

Feb 2018 - Aug 2018

- As part of the Digital Transformation team, I developed a set of python tools to extract survey information about other teams in SanTech. This allowed us to better understand what talks and training sessions to run on agile methodologies.
- As part of the Continuous Governance team, I built a prototype app to visualise the risks a new piece of software has based on its design. This could then inform the team developing the software on how best to improve it.

## HACKATHONS

### IC Hack 2022: *Solar Searcher*

5-6<sup>th</sup> February 2022

- In 24 hours, we developed a webapp for finding the best places in a country to deploy solar panels using satellite images, local solar radiance and a deep learning model for identifying suitable land from its texture.

### Google Hash Code 2022

24<sup>th</sup> February 2022

- Competed against teams all over the world to find the best solution to an optimisation problem in under 4 hours.
- Our team *Hit The Code Jack* ranked 255<sup>th</sup> out of the 10,000 competing, as well as 14<sup>th</sup> in the UK and 1<sup>st</sup> in Imperial.

## SKILLS

**Programming Languages:** Proficient: C, Python; Intermediate: JavaScript (Node); Basic: Bash.

**Music:** Classical pianist to grade 8. Played with 3 bands; one swing, one afrobeat, and one rock'n'roll.

**Piloting:** Gained pilot's license in May 2019. Over 70 hours flying experience, and 15 hours PIC.