

-----Education-----

Imperial College London**September 2017- Present**

Completed first and second year Electronics and Information Engineering with a 2:1.

Relevant modules: Simulation and Modelling; Machine Learning; Artificial Intelligence; Mathematics for Signals and Systems; Deep Learning; Object Oriented Programming; High-Level (functional) Programming; Software Engineering; Computer Architecture 1 and 2; Data Structures and Algorithms; Algorithms and Complexity; Databases; Computer Networks and Distributed Systems; Language Processors; Mathematics 1 and 2; Computer Vision.

Dr Challoners Grammar school**September 2010-2017**

- A Levels: Mathematics, Further Mathematics, Physics Electronics (A*AAA) 2017
- Regional runner up in Young Enterprise 2017
- A (highest attainable mark) Additional Maths (OCR Free Standing Qualification) 2015
- Junior Maths Challenge multiple silver awards

-----Work Experience/Relevant Projects-----

Series of C++ projects**October 2017 – Present**

- MIPS Simulator: A C++ programme would emulate a CPU's memory and register file when given MIPS-1 big-endian binaries (Graded 77%)
- C98 to MIPS compiler including lexer, parser and code generator. Also using the same skeleton to create a c98 to python translator (Graded 66%)
- Smaller projects include mastermind solver, production and evaluation of complex binary trees, "2048" game and sudoku checker

Neural Network Library (graded 100%)**December 2020**

- Developed a library (using only numpy) for implementation and training of neural networks.

Monte Carlo Simulation and Analysis of CPU Cores' Interaction with Ticket Spinlocks (graded 60%)**December 2020**

- Mathematical model and further analysis of the effect of increasing number of cores with respect to performance
- As a personal project I simulated the above coursework using a Monte Carlo Chain from scratch

Decision Tree Classification (graded 69%)**November 2020**

- Classification of phone location using signal strength received from 8 Wi-Fi routers around a house

LLVM Undergraduate Research Opportunity**August 2020 – October 2020**

- Implementing resource sharing between different statically and dynamically scheduled components by using LLVM to manipulate source IR to comply with HLS and Dynamic scheduling tools

IBM workshop (graded 71%)**July 2019**

- 3 days of lectures on IT architecture and security given from multiple IBM specialists
- 2-day assessment on IT architecture including deliverables such as: System Context, Architectural overview and Component model Diagram, Architectural Decisions and a final presentation to IBM seniors.
- Deciphered a long brief into concise functional and non-functional requirements
- Furthered teamwork and leadership skills working in a group of 9, sharing management responsibilities throughout tasks

SQL databases Coursework (graded 68%)**February 2019**

- Formulated a series of SQL queries to solve a variety of problems

FPGA Real Time Image Processing end of first year project (C and python) (graded 72%)**March 2018 – June 2018**

- Developed a deep understanding of optimisations specific to FPGAs and general computer architecture, such as arbitrary precision types, unrolling loops and pipelining
- Developed time and resource management skills including the creation and application of Gantt and Activity Network diagrams
- Took the lead role writing an 8000-word technical report

-----Skills and Interests-----

Advanced mathematics receiving 100% on multiple A-Level maths and further maths modules, linear Algebra. C++, Python (including but not limited to pytorch, keras, tensorflow), SQL, F#, MATLAB, Prolog and Java. Experience with all 3 major operating systems and developer tools such as Visual Studio and Git.

I am a competitive person and enjoy a variety of team sports and games including football, tennis and chess. In high school, a group and I set up 2 five aside teams that competed weekly. I am fascinated by motorsport and enjoy when possible endurance and F1 Grand Prix races. I love solving problems and was a frequent winner in my high school engineering society.