

KIERAN DALTON

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EDUCATION	2018-	Pembroke College, University of Cambridge BA (Hons) Natural Sciences Third Year: Physics. First Class and 20 th in cohort (awarded Foundress Prize). Second Year: Physics and Mathematics. Exam percentages in high first range. First Year: Physics, Mathematics, Chemistry, Materials Science. First Class and 4 th in cohort of 604 (awarded Satish Kumar Aggarwal Prize).
	2016-2018	Ysgol Friars, Gwynedd A Levels: Physics (A*), Chemistry (A*), Mathematics (A*), Further Maths (A*) AS Levels: Biology (A)
	2014-2016	Hillgrove School, Gwynedd GCSEs: 12 A*s, including two second languages and computer science.

RESEARCH EXPERIENCE

Summer Research Intern: Quantum Circuits Group, University of Glasgow (2021)

- Working with Professor Martin Weides' Quantum Circuits Group on simulation of a superconducting qubit package and identification of noise sources.
- Involves EM simulation of the qubit package and PCB using Ansys HFSS.
- Attended the IOP 6th Superconductivity Summer School and the Qiskit Global Summer School.

Royal Society Research Intern (2020)

- Worked with the Cavendish Laboratory and BT on guiding millimetre-waves via metamaterial surfaces and extending 5G range.
- The project involved raytracing modelling using MATLAB, with custom reflector models and optimisation work.
- Presented my work at the Royal Society Industry College networking event.

PAWB Summer School (2016-2018)

- Research phase involved empirical investigation of optical phenomena, specifically the linear polarisation of blue sky light due to Rayleigh Scattering.
- Designed and constructed a solar tracking device for photovoltaic cells, involving operational amplifiers, voltage comparators, monostables, multivibrators, and custom logic control (with D-flip flops).
- Developed understanding of optoelectronic devices and formulated and assembled complex logic circuitry.
- Returned to mentor students in photonics and circuit production techniques.

Engineering Education Scheme Wales (2017-2018)

- Designed and constructed a self-levelling platform capable of returning to any angular orientation relative to the horizontal. This project incorporated a lenticular grating, laser diode, rotational optical encoder, and logic circuitry.
- Won the AIRBUS 'Best Application of Engineering and Technology' award (and CREST Gold awards) and attended the 2018 National Big Bang Final.
- As team leader, I enthusiastically adopted leadership and enjoyed organising a long-team project involving circuit design and testing as well as team delegation and the completion of complex tasks before deadlines
- I was awarded Runner-Up EESW Young Engineer of the Year in 2018 for this and my previous project.

EXTRACURRICULAR
STUDY

Quantum Cryptography School for Young Students (2018)

- Involved multiple courses of lectures covering quantum mechanics, classical and quantum cryptography, linear algebra and the theory and implementation of quantum cryptography and quantum computing.
- We performed experiments and had small group discussions with the resident researchers.

International Summer School for Young Physicists (2017)

- One of 40 international students studying advanced physics concepts with lectures from renowned researchers in various fields of theoretical physics.
- Specifically, my mentorship group focused on quantum computing, including the Grover Search algorithm and Shor Code, with daily study sessions with experts culminating in a group presentation on the topic.
- One highlight was the visit to SNOLAB, where we were guided through the experiments in their subterranean clean room.
- Involved two weeks of substantial self-study in the challenging but cooperative atmosphere of the Perimeter Institute.

ADDITIONAL
EXPERIENCE

Academic: Pritchard Prize for Academic Achievement (2017, 2018)
Senior Maths Challenge Gold, British Maths Olympiad Round 2.

Volunteering: Assistant Lifesaving Instructor – Taught first aid and water rescue (2015-2016).
Head Boy – Organised voluntary inter-pupil teaching scheme for literacy and numeracy.
Sixth Form Council – Managed charity work such as Children in Need.
University Physics Society – Sponsorship Officer, specialising in contacting sponsors, negotiating contracts and organising the annual careers conference.

Skills: 4 English Speaking Board Distinctions.
Rotary Youth Leadership Award (2016).

Programming: Completed Harvard CS50 through edX, experienced in C, C++, Java, Python, MATLAB.

Interests: Open-water Swimming, Football.

REFERENCES

Professor Mike Payne

Position: Director of Studies for IB Physical Natural Sciences, Pembroke College; Chair of Computational Physics in the University of Cambridge

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