ALFRED RENN
SOFTWARE ENGINEER

💼 WORK EXPERIENCE

ByteSnap Design
🌐 https://www.bytesnap.com/
August 2022 – March 2023

Software Engineer
Designed, developed, and engineered various web applications for both internal and customer projects, utilizing a range of programming languages and frameworks to build powerful software solutions.

Highlights

◁ Utilised **Vue** and **TypeScript** to create an intuitive, user-friendly web application, using robust design patterns and best practices to ensure optimal functionality and user experience

◁ Designed and developed a responsive, feature-rich web application using **Flutter** and **Dart**, incorporating a range of views and user-friendly interfaces for maximum ease of use

◁ Employed **WPF** and **C#** to create a high-performance application, using **SQL** and an MVC architecture to facilitate the viewing, manipulation, and analysis of data

◁ Streamlined the deployment process of complex code with multiple dependencies, using **Docker** and **GitLab** CI to optimise the development process and improve productivity

Durham University Physics Department
🌐 https://www.dur.ac.uk/qlm/
June 2021 – August 2021

Solar Physics Research Student
Researching novel telescope imaging techniques using quantum gases

Highlights

◁ Developed robust code with **Python** for fabricating and analysing images from a solar telescope

◁ Performed deep literature review to justify techniques used in the creation of said telescope

◁ Discussed and acted upon desires and needs of telescope engineers, theorists, and observationalists

Durham University Physics Department
🌐 https://www.durham.ac.uk/departments/academic/physics/
August 2020 – October 2020

Content Developer
Developing interactive teaching content for a better online learning experience in the pandemic

Highlights

◁ Utilised **Python** to create highly interactive learning resources for Durham physics students

◁ Worked remotely with lecturers to deliver content tailored to their needs and desires

◁ Organised fellow interns as a group by creating task rotas to encourage teamwork and mitigate work-duplication, establishing efficient development

Viper RF
🌐 https://www.viper-rf.com/
August 2019 – September 2019

Design Engineer (Internship)
Designing and testing real-time optimisation for an ion satellite thruster

◎ CONTACT

📍 | Birmingham, West Midlands GB

✉ | **alfredirenn@gmail.com**

🌐 | **http://alifeee.co.uk**

📡 | **Blog**
https://blog.alifeee.co.uk

in | **LinkedIn**
alfredrenn

○ | **GitHub**
alifeee

🏛 EDUCATION

2018
2022

Durham University
🌐 https://www.durham.ac.uk/
🎓 MPhys

Physics

Grade: 1st (77%)

Courses

◁ Masters Project

◁ Atoms, Lasers and Qubits

◁ Advanced Theoretical Physics

◁ Advanced Astrophysics

◁ Advanced Laboratory

2016
2018

Cottingham High School and Sixth Form College
🌐 https://www.cottinghamhigh.net/
🎓 A Level

Physics, Mathematics, Further Mathematics

Grade: A*A*A*

Courses

◁ A* Physics

◁ A* Mathematics

◁ A* Further Mathematics

2011
2016

Cottingham High School and Sixth Form College
🌐 https://www.cottinghamhigh.net/
🎓 GCSE

Grade: 6A*, 4A, 2D*

Courses

◁ A* Mathematics

◁ A English

◁ + 5A*, 3A, 2 Dist*

Highlights

◁ Programmed and debugged a real-time optimisation algorithm on a microcontroller with **C**

◁ Provided R&D updates and creative input to problem solving

◁ Worked on commercially sensitive and highly confidential new product developments using advanced software

◁ Liaised directly with customers on work done with radio-frequency electronics

CRODA
🌐 https://www.croda.com/
June 2017 – June 2017

Chemical Engineering Maintenance Technician (Work Experience)
Maintenance of chemical engineering equipment

Highlights

◁ Shadowed engineering, maintenance, and instrumentation teams at a chemical-production facility

◁ Designed hanging basket using TIG welder, requiring fast learning of techniques

◁ Worked alongside diverse teams with a professional conduct

◁ Gained an awareness of health and safety, commercial awareness, value for money, and customer service

New Village News
June 2014 – June 2017

Paper Boy
Delivering newspapers to local residents as a subscription service

Highlights

◁ Demonstrated reliability and excellent timekeeping on my weekly morning paper round

◁ Undertook additional responsibilities as required covering people's rounds last minute when needed

✹ AWARDS

July 2019

Durham University
🏆 Florence Nightingale Award for Graphical Excellence

Awarded for the optimal presentation of quantitative data to illustrate a Helmholtz coil. Used **Python** for graphing.

July 2019

Durham University
🏆 Durham Award for Academic Excellence

Awarded for achieving over 80% in first year of university.

👥 VOLUNTEER

British Heart Foundation
🌐 https://www.bhf.org.uk/
March 2023 – Present

Electrical Tester
Testing electrical equipment for the British Heart Foundation home shop

☷ SKILLS

Data Analysis

Python   **Statistics**

Web Development

HTML   **CSS**   **JavaScript**   **Vue**

♥ INTERESTS

Board games

Founding president of Board Gaming Society at Sixth Form

Electronics

Arduino (microcontroller and circuit board building)

PC building

☑ REFERENCES

Available on request
— Jim Mayock, Viper RF

Available on request
— Dr. Ifan Hughes, Durham University

Available on request
— Graeme Wintle, ByteSnap Design

National Citizen Service

🌐 https://www.ncsyes.co.uk/

June 2016 – July 2016

National Citizen Service

Highlights

◀ Outdoor activities as a team including orienteering

◀ Organisation of charity fundraiser and litter pick as a group of young people

👷 PROJECTS

◀ **Custom racing wheel**: Used Arduino to create a steering wheel for driving games, improving practical knowledge of electronics and coding skills, and evolving a robust toolset for microcontroller development

◀ **Real-time power optimisation for a satellite thruster**: Used a microcontroller to minimise power losses for a microwave generator, to be used in space satellites, improving industry knowledge and personal skills

◀ **Optical rotation research project**: Investigated the phenomenon of optical rotation when light is shone through sugar solutions, including potential uses in science and industry, culminating in a 5-page scientific report

◀ **Personal website**: Used free time over summer to learn HTML/CSS/JavaScript to create a versatile website with physics simulations, games, and a collation of many physics resources for fellow Durham students

◀ **Quantum mechanics simulation**: Simulated a finite square well with Python to create a learning resource for physics students, requiring data manipulation and creative problem solving to get a responsive application

◀ **Atomic-force microscopy**: Imaged surfaces on the μm- and nm-scale to investigate the effect of carbon micro-particle size on the surface structure of glass, culminating in a 10-page scientific report

◀ **Machine learning for optimising laser cooling experiments**: Used machine learning to optimise the cooling of atoms in a laser trap, culminating in a 33-page scientific report