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

CONTACT

Birmingham, West Midlands GB

alfredirenn@gmail.com

http://alifeee.co.uk

Blog
https://blog.alifeee.co.uk

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

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

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

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*

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

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

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