Freddie Bawden
Creative Problem Solver

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Education

BSc (Hons) Computer Science (First Class), The University of Edinburgh, (2016-2020)
Notable Courses: Software Architecture, Process and Management; Software Testing; Extreme Computing; Distributed Computing; Computer Communications and Networks

Work Experience

Engineering Intern
Skyscanner
(June - Sept 2019)

- Worked as part of a DevOps team responsible for the front page and website infrastructure, working with **React** and **NodeJS**
- **Worked with designers and product managers** in improving the accessibility of the front-end components, informing design decisions with data
- Identified and built solutions to improve the website's performance such as **image lazy loading and CSS deferral** which improved page load times by 500ms
- Extended a **DroneCI** deployment pipeline to monitor the relative failure rate of old and new deployments to improve reliability when rolling out

QA Engineer
HYP-ED (Sept 2019 - Feb 2020)

- Contributed to a 200 person project that researches, builds and tests futuristic transport solutions; namely a Hyperloop Pod
- **Led a team in creating a continuous integration system** for a **C++** environment to improve software quality and reliability through unit, mocking and static testing
- Communicated across teams to gather feedback and teach members how to use our tools and develop effectively using a test-driven development methodology

Personal Projects

Mandelbrot Maps (Browser-based Fractal Renderer)

- Created a browser-based Mandelbrot fractal viewer for my undergraduate dissertation; allows users to visualise the fractal and learn about its structure
- Involved converting a Java Applet to **React** to create a responsive experience on both desktop and mobile browsers while maintaining native performance
- Used **Rust** and **WebAssembly** to handle the high computation load of rendering the fractal, along with web workers to allow for parallel computation in the client
- Achieved a grade of 83%

Stepz (IoT Step Counting App)

- Worked in a pair to design and implemented a step counter using a wireless IoT device to track the wearer's movement and present data through a **Java** app
- By drawing inspiration from published papers and analysing step data, we created a peak detection system to catch spikes in the user's motion
- The final system was robust against walking, running and climbing stairs and outperformed the Editor's choice step counting app on Android.

Brilliant Online Buying (Automated Shopping Robot)

- Built autonomous shopping system which allows allowing users to order groceries remotely and have a robot collect them for later pickup
- Worked in a group of eight over several months, achieving a final grade of 78%
- Created a **Node JS Rest API** to store customer data, plan movement and encode instructions for the robot
- Added networking capabilities to the robot and produced a system which connected to and orchestrated separate robot controllers wirelessly using **Python**

Toy Browser Engine

- Personal project to create a basic browser engine in **C++**
- Involved parsing raw HTML and CSS, calculating the layout dimensions by following complex W3C guidelines and rendering to produce the webpage.
- Developed a deeper understanding of the mechanics behind a web page, giving me the knowledge to create more performant pages in the future

Other Experience

Extra-Curricular Coding

- **Regularly participate in computing events** such as hackathons and coding challenges to learn about new technologies and develop skills

Swimming Teaching and Lifeguarding

- Responsible for **planning and leading** swimming classes as well as **communicating** with other teachers and parents regularly about swimmers' progress
- Required **working calmly and efficiently** within a team even when under pressure