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## About me

High-achieving University of Bristol Computer Science student, on track for a First Class. Aspirations as a developer; eager to learn more about and engage in FE/BE/full-stack web and/or software development. Looking to expand my skills in through an internship during the summer of 2023.

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## Education

### University of Bristol

2021 – 2024

BSc Computer Science: First Year – First Class

Term 1: Mathematics A: 83%, Imperative & Functional Programming: 75%, Computer Architecture: 73%

Term 2: OOP & Algorithms: 84%, Mathematics B: 86%

A Levels – 3A\*s (Mathematics, Computer Science, Physics)

Cambridge Technical – Distinction (Engineering)

GCSEs – two 9s (including Physics), five 8s (including Computer Science, Maths, English Language and Literature), A (Further Maths), 7, 6, B

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## Skills and Proficiencies

Languages: C, Java, JavaScript, TypeScript, HTML, CSS, JSX, Python, Haskell

Technologies: React, Git, GitHub and GitHub Pages, Unix/Linux, JUnit, npm, SpringBoot

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## Coursework

### Object Oriented Programming Final Coursework

March – May 2022

- Over 60 hours of face-to-face pair programming in Java saw us produce both an implementation of a graph-based board game, and an “exemplary” AI which was “agonisingly close to near-unbeatable”.
- Produced an alpha-beta pruning Minimax algorithm with weighted static evaluation.
- Co-authored shortest path algorithm used to heuristically rank moves.
- Utilised test-driven development with JUnit, creating assertion-based test cases.
- Developed my teamworking ability through clear communication with my teammate.

### Imperative Programming Final Coursework

December 2021

- Designed and implemented a solution for converting between different image formats in C.
- Developed bespoke compression from PGM to a course-defined layered vector format, using rectangle inscription through a largest-area-under-histogram algorithm.
- Test-driven development through assert.h and custom assert function.

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## Experience and Projects

### Playlist Puller (Spotify, Invidious and YouTube APIs)

June 2022

- Program reads playlists off authenticated Spotify accounts and recreates them as YouTube playlists.
- Familiarised myself with the Spotify, YouTube, and Invidious APIs.
- Used Python libraries including Spotipy, Requests, and Google’s libraries for OAuth.

## Portfolio Website

July 2022

- Created a React project via npm to produce my own component-driven portfolio website from scratch.
- Worked with JSX, API calls to GitHub, and functional components in JavaScript/TypeScript.
- Created my own re-usable JSON-driven components, parsing data to generate page content. This allowed for easy modification and addition of content to the page.
- Generates some page content through GitHub API calls.
- Hosting on GitHub Pages, I purchased a custom domain. Having set up the required DNS rules, the Pages URL and subdomain (www.elliottmb.dev) resolve to my custom apex domain (elliottmb.dev).

## Computer Science Society Game Jam 2021

October 2021

- Led a team of 3 which worked to create a Halloween themed game in 24 hours.
- Programmed a 2D object-oriented physics and collision engine in JavaScript with mechanics like a player, smooth camera, damage, and enemies. Accommodated and complemented teammate's work.
- Clearly outlined and delegated tasks to other members of the team.

## Aviva Digital – Shadowing

June 2018

- Shadowed employees from all departments including front and back-end development, and UI design.
- Learnt how Aviva uses AWS/cloud integration for data analysis and storage.
- Immersed in Rapid Application Development; attended a scrum and was given a comprehensive explanation of how Git and GitHub streamline collaborative software development.

## Pseudo-3D Raytracing

August 2021

- Includes my implementation of sphere tracing, in 2D, with multiple purely defined shapes.
- Learnt low-level graphical rendering method and gained experience optimising rendering calculations.
- Player navigates a 2D maze from a first-person perspective (generated using my implementation of a Randomized Depth-First search algorithm).
- Implemented performant/costless “lighting” effects by exploiting elements of sphere tracing.

## Employment, Work Experience and Achievements

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### Sales Assistant at Mountain Warehouse

June 2022 – September 2022

- Worked as an integral part of a highly functional and energised team delivering excellent customer service at Mountain Warehouse.
- Developed my interpersonal skills, gained great confidence in conversing with/helping with customer queries in a new and challenging environment.
- Able to adapt my service approach depending on the individual, took pride in my work and always accepted extra hours when they were asked of me.

### The Scholars Programme

2020

- Completed a course involving writing many essays on a subject taught at university level by a University of Cambridge PhD student.
- Grade of final cumulative essay: 2:1.

### National Citizen Service

June – July 2019

- Two-week Social Action Project as part of a team of 6 other teens with the aim of improving the local community.
- Volunteering and fundraising for the local charity. Volunteering included site clearing.
- Organised and ran a pub quiz for the village, serving as one of our fundraisers.