Elliot Michael Buckingham

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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 through engaging with web, software and/or Machine Learning applications. Seeking to expand my knowledge and skillset in through an internship during the summer of 2023.

Education

University of Bristol 2021 – 2024

BSc Computer Science – Year 1 (First Class): Mathematics A (83%), Imperative & Functional Programming (75%), Computer Architecture (73%), OOP & Algorithms (84%), Mathematics B (86%)

University Technical College Norfolk 2019 – 2021

A Levels – 3A*s (Mathematics, Computer Science, Physics)
Cambridge Technical – Distinction (Engineering)

Aylsham High School 2014 – 2019

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

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, GDB

Relevant Coursework

University of Bristol, Object Oriented Programming Final Coursework March – May 2022

- 60+ hours face-to-face pair programming in Java. We completed an implementation of a node/graph-based board game, and an "exemplary" AI, "agonisingly close to near-unbeatable" (quotes from marker).
- Produced an alpha-beta pruning Minimax algorithm with weighted static evaluation of play-states.
- Co-authored shortest-path algorithm give a relative heuristic rank of terminal states based on player.
- Utilised test-driven development with JUnit, creating assertion-based test cases.
- Developed teamworking ability through clear communication with my teammate.

University of Bristol, 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 via a largest-area-under-histogram algorithm.
- Test-driven development through assert.h and custom assert function.

Experience and Personal Projects

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.
- Automatically 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.elliotmb.dev) resolve to my custom apex domain (elliotmb.dev).

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Playlist Copier, "Playlist Puller" 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.

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.

Raytracing, Sphere tracing 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 maze from a first-person perspective in pseudo-3D (generated using my implementation of a Randomized Depth-First search algorithm).
- Implemented performant/costless "lighting" effects by exploiting elements of sphere tracing.

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, Aviva's highly agile development environment.
- Shown how Git and GitHub streamline collaborative software development.

Employment and Achievements

Mountain Warehouse, Sales Assistant 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.

University Technical College, 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.