Dhillon Thurairatnam

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Profile

I'm a driven computer scientist at the University of Bristol, on track to graduate with a 1st and pursuing a career in software engineering and machine learning. My skill set includes full stack development, meticulous attention to detail, teamwork, with a proven ability to rapidly acquire new knowledge. I'm currently working on an algorithmic trading strategy project to learn about the use of AI in the financial industry.

Education

University of Bristol
Sept 2022 – Jan 2026 (Expected Graduation)

BSc Computer Science
- Average Grade: 73%
- Relevant Modules: Computer Systems A (70%), Computer Systems B (87%), Data Driven Computer Science (81%), Programming Languages and Computation (78%), Machine Learning (73%), Advanced Algorithms (74%)

Wimbledon College
Sept 2015 – May 2022

- A-levels: Mathematics (A*), Further Mathematics (A*), Physics (A*), Chemistry (A*)
- GCSEs: Mathematics (9), Biology (9), Chemistry (9), Physics (9), Religious Studies (9), Geography (8), Spanish (8), English Literature (7), English Language (7), Business (7)

Languages/ Skills
- Java, demonstrated under 'Scotland Yard Board Game' in the projects section.
- Go and AWS, demonstrated under 'Conway's Game of Life Simulation' in the projects section.
- Dart, in Flutter for full stack development and Google Cloud for backend communication demonstrated under 'MedicRecall Revision App' in the projects section.
- C# demonstrated under 'Zombie Apocalypse Game' in the projects section by following Unity tutorials.
- C++ learnt on Codecademy and used in Leetcode challenges.
- C, Haskell, SQL, React (JavaScript), HTML, JSON and Python learnt and practised in university.

Technical Experience

Epigram Business Team Head of Technology
Sept 2024 – Present

University of Bristol, UK
- Tackled website editor's queries to optimise software usage for society needs.
- Managed and maintained website infrastructure and content to ensure seamless operation and positive user experience by resolving website issues and collaborating with the editorial team to implement design changes on the website, using the Handlebars templating language via the Ghost blogging platform.

Engineering Faculty Research Internship
June – July 2024

University of Bristol, UK
- Worked on investigating machine learning methods for super resolution tasks to upscale models of flow fields in 3D.
- Reviewed research papers on Generative Adversarial Networks (GANs) applied to super resolution and implemented and trained a Multi-Pass GAN using Pytorch.
- Achieved a 50% training time reduction compared to traditional 3D GAN approaches while improving the visual quality of generated flow fields. Authored a comprehensive report and presented findings to my supervisor.

Olympus Rover Trials Software Lead
Oct 2023 – June 2024

University of Bristol, UK
- Designed and constructed a rover that will be remotely controlled to conduct a sample return mission in a team of 9.
- Coordinated the research, development and testing of the software and communication system, facilitating remote control of the rover over Wi-Fi.
- Awarded 83% on our critical design review, which provided technical details on the component selection, software analysis and our strategy for efficient teamwork. Produced a working electrical/software system.

Careys Work Experience Week
June 2018

London, UK
- Reviewed construction site blueprints, estimating the quantities and costs of materials required.

Additional Experience

Graduate Teacher (Level 1 & 2)   Sept 2024 – Present
University of Bristol, UK
- Guided software engineering project students on the agile development process.
- Assisted unit directors teaching cybersecurity and operating systems theory in the Computer Systems B module.
- Addressed student queries on algorithms, data structures and processing fundamentals in the Algorithms and Data module.
- Read through problem sheets for each class to prepare myself to communicate concepts to students effectively.

2nd Year Computer Science Course Representative   Sept 2023 – June 2024
University of Bristol, UK
- Responsible for representing peers' academic interests to university staff.
- Conducted cohort feedback surveys to gather data and liaised with faculty members to discuss course improvements, resulting in a 15% increase in student satisfaction scores.

Computer Science Society Press Officer   Sept 2023 – June 2024
University of Bristol, UK
- Enhanced the society's visibility and engagement by managing communications and promoting events.
- Created content for social media platforms, displayed posters around the university and collaborated with committee members to ensure consistent and effective messaging.

Projects

Quantum Cross-Chain Arbitrage – ETH Oxford Hackathon   Jan 2025
- Programmed a Quantum enhanced cross chain arbitrage bot that uses QAOA and Flare's blockchain protocols to execute fast, secure and profitable cross-chain arbitrage via flash loans (team of 3).
- Built an interactive frontend dashboard to visualise real-time and historical trading pair data; implemented backend graph construction and API endpoints.
- Won the DeFi prize category ($5000) and secured runner-up in the Vyper category.
- https://github.com/Dhill2274/quantum-cross-chain-arbitrage

Zombie Apocalypse Game – GameJam 2024   Nov 2024
- Challenged to create a Halloween themed game in 24 hours.
- Collaborated in a team of 3 creating a top-down zombie shooter game utilising C# and the Unity Hub. Employed a kanban board for task management and organised work through GitHub issues.
- https://github.com/vu22007/Halloween-Gamejam-2024

MedicRecall Revision App – Software Engineering Project   Sept 2023 – June 2024
- Developed a medical exam revision application on the web and iOS for an NHS doctor, focusing on implementing a spaced repetition learning algorithm and a revision calendar with notifications, achieving a grade of 73%.
- Utilised Flutter, Dart, Firebase and Google Cloud Functions in a team of 5, emphasising good practices, such as allocating tasks on a kanban board and having multiple pull request reviews.

Conway's Game of Life Simulation – Coursework   Sept 2023 – Dec 2024
- Created various Game of Life simulation implementations in Go to improve its computational efficiency.
- Designed a parallel implementation to optimise workload across multi-core processors using Go routines and synchronisation mechanisms, later developed into a distributed system on AWS leveraging worker nodes and a central broker, earning a grade of 72%.

Scotland Yard Board Game – Coursework   Jan 2023 – May 2023
- Built a computer simulation of the Scotland Yard Board Game in Java for my Object-Oriented Programming coursework, achieving a grade of 75%.
- Integrated Dijkstra's algorithm and a Mini-Max game tree to optimise AI agents' performance based on a scoring function.

Extra

University of Bristol Computer Science Society Talks: Regular attendee of talks and workshops by various guest speakers.
Duke Of Edinburgh Bronze Award: Volunteered at a reading programme at my local library and played the keyboard.
Cricket: Represented my school cricket team.