PHILLIP DANIEL

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Education

BSc Computer Science (Predicted 1st) | University of Bristol
September 2022 – Present

- Year 1 – First Class, Year 2 – on course for First Class
- Current expected graduation date – 2025, planning to change to an MEng graduating in 2026.
- **Notable modules & grades:** Mathematics for Computer Science A (79%), Imperative and Functional Programming (79%), Software Tools (80%), Object Orientated Programming and Algorithms (78%)

Royal Grammar School Newcastle
2020 & 2022

- A Levels: A*- Mathematics; A - Further Mathematics; A - Physics; A - Computer Science
- GCSEs: 9 - Mathematics, Physics, Biology, Chemistry, Design and Technology, Economics; 8 - Further Mathematics, English Language, Art and Design, French; 7 - English Literature; A* - Chinese (Newcastle Mandarin Chinese School - 2017)
- Awards – Arkwright Engineering Scholarship, Industrial Cadets Gold Award, Gold CREST Award, Gold BEBRAS Elite Computing Challenge Award, Gold UKMT Senior Maths Challenge Award, Computer Science Prefect

Skills

Programming Languages: Java, C, Python, Golang, Haskell, JavaScript, Lua
Tools: Git, ReactJS, MySQL, AWS

Experience

Engineering Outreach Ambassador (Programming) | University of Bristol
October 2023 - Present

- Delivering hands-on programming workshops and events in schools, community centres and on campus, primarily for the ages 10-16 for the Faculty of Engineering's Outreach Program, with the aim of engaging young people in STEAM subjects.
- Helping to run python workshops, assisting students in creating various programming and robotics projects.

Web Developer, Sponsorship Manager | Igneous Racing
September 2019 - July 2022

- A six-person, student led team for the F1 in Schools design and engineering competition, in which my team was ranked 6th nationally, winning a national award and multiple regional awards.
- Designed and maintained the team portfolio website, using ReactJS, through peer programming with another teammate.

CyberFirst Advanced Course | NCSC & University of Warwick
July 2021

- Attended a 1-week residential cyber security course hosted by the National Cyber Security Centre (GCHQ) and the University of Warwick. Learnt about various key areas within cyber security, including secure development, implementing digital forensics, encryption technologies, OSINT, penetration testing.
- Competed in a capture the flag event, which used the skills that we had been taught during the week, which my team won.

Projects & Competitions

Parallel and Distributed Game of Life
October 2023 - Present

- Designing both parallel and distributed solutions and a report analysing benchmarks for Conway's Game of Life using Golang as part of a pair programming project.
- Implemented a broker-worker node system architecture with AWS EC2 instances, with the worker nodes using Halo Exchange for each iteration of computing. Parallel solution implemented in two separate ways, one using channels and the other using pure memory sharing, producing race condition free code.

Skills Learning Activity | University of Bristol & IBM
September 2023 - Present

- Project Manager and Client Liasson of a team of 4 students creating a cross platform educational game for our client, IBM, as part of our Software Engineering Project module, which uses the Unity game engine and C#, and is being developed using agile development principles.

- Aims to helps teach content from IBM's pre-existing Skill Hub, covering various topics such as AI, Cybersecurity, Cloud and Data Science.

Accommodation Search Automation June 2023 - July 2023

- Created an automation script to search through popular property renting websites, generating a spreadsheet of properties compatible with inputted requirements (location, number of bedrooms, landlords to avoid, etc).
- Coded using python, using the Selenium package for web scraping and openpyxl for Excel spreadsheet manipulation.

Scotland Yard Implementation Coursework Project March 2023 - May 2023

- Using Java, modelled the game mechanics of the board game Scotland Yard as a pair programming project.
- Using the strategy pattern, we implemented an AI for both teams, using Minimax with Dijkstra's shortest path algorithm as an example heuristic, streamlining the runtime with alpha-beta pruning and weights, using low coupled classing allowing for testing of each class independent of recursive calls from the Minimax implementation, achieving a first-class mark.

PGM Image Compression and Decompression November 2022 - December 2022

- A program written in C to convert a PGM image into a '.sketch' file, consisting of the data of every pixel, then render the file using SDL2, and also convert from the sketch file to a PGM image, using two-dimensional run length encoding for lossless compression.

Room Mapper Project February 2022 - May 2022

- Developed a room mapper, which used a LiDAR sensor in combination with a Raspberry Pi to, quickly scan a room and produce a floor plan, using python, php and HTML.
- Implemented a web interface allowing for the user to control the settings of the product and add tags to the scan to note furniture. Used python control the LiDAR, interpret calculated distances, and generate a jpeg image floorplan of the room from a NumPy array containing the calculations.

Pi Wars – International Raspberry Pi Robotics Competition November 2021 - January 2022

- A student-based team at the Royal Grammar School, building and programming a raspberry pi-based robot using python to solve numerous different tasks within an arena, such as object detection and propelling an object towards a target. Team placed 11th in our category.