

RAM LARG

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EDUCATION

University of Bristol, UK
BSc Computer Science

2021 – 2024
(Year 1) 2:1

St Martin's School, UK
A-levels: (3A*) Mathematics, Physics, Chemistry

2019 – 2021

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Go, Java, C, SQL

Tools and Frameworks: Git, GitHub, Linux, Django, Docker, Google Cloud, AWS, TensorFlow.js, Node.js

EXPERIENCE

Research and Development, Nuffield Foundation, Cardiff University

July 2020 – September 2020

- Developed an agent-based model of COVID-19 to predict the spread of infection in a controlled environment.
- Analysed and reported the impact of factors affecting spread, including social distancing, masks, and hygiene.
- Presented the findings live on stream in front of 500+ viewers.

PROJECTS

Water Treatment Digital Twin, Nijhuis Industries

September 2022 – Present

- Developing a digital twin tool to aid in the maintenance and designing of water treatment plants.
- Adopted Agile methods by researching user stories, using kanban, version control, and organising regular client meetings.
- Built a CI/CD pipeline to automate building, testing, integration and linting workflows in GitHub Actions.
- Delivered incremental changes to our client in each software development cycle.
- System containerised using Docker for continuous Google Cloud deployment.

Game of Life, Bristol University

November 2022

- Developed a multithreaded Game of Life automaton whose initial state determines its evolution.
- Visualised each generation on an image matrix which can pause, terminate, and output a PGM image.
- Applied concurrency to reduce runtime by chunking the image to be processed by multiple worker threads.
- Benchmarked serial implementation against parallel, finding a 60% improvement in performance.
- Implementation scaled across multiple EC2 instances to act as worker nodes to calculate the next state.

Scotland Yard, Bristol University

March 2022 – May 2022

- Implemented Scotland Yard board game using object-oriented concepts in Java.
- Designed AI using a game tree and minimax to select the next optimal move.
- Implemented a score for moves, determined by the distance between nodes calculated with BFS.
- Utilised test-driven development with JUnit, using assertion-based testing.
- Design patterns used include Visitor, Model-View-Controller, Factory and Observer.

Pose Matching, Hackathon, Bristol University

February 2023

- Implemented pose estimation and detection system with PoseNet to match webcam poses to an MP4 model in 24h.
- Developed matching pose score by normalising 17 points from each pose and comparing their cosine distance.
- Integrated the system into a client-side application, allowing for user interaction in the browser.

Portfolio Website, Personal

February 2023 – Present

- Created and hosted a static Markdown website using Jekyll and GitHub Pages.
- Provides information about myself, projects, and links to finding my work on other platforms.
- Configured DNS records to point the IP addresses from GitHub Pages default domain to a purchased custom domain.

RELEVANT EXPERIENCE

Volunteer, NHS Wales (Ffrind I Mi), Caerphilly, Wales

November 2019

Developed relationships with people in the care home and received training on proper sanitation and hygiene.

Tutor, St Martin's School, Caerphilly, Wales

2021

Assisted in teaching student numeracy skills with one-on-one tutoring to improve confidence in the subject.

Cashier and Sandwich Artist, Subway, Caerphilly, Wales

June 2021 – September 2021

Prepared food and performed till operations while providing a high standard of service to customers.