RAM LARG

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Portfolio: larg.dev **GitHub**: github.com/rlarg

EDUCATION

University of Bristol, UK **2021 – 2024**
BSc Computer Science (Year 1) 2:1

St Martin's School, UK **2019 – 2021**
A-levels: (3A*) Mathematics, Physics, Chemistry

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.