Kai Hulme

07469717542 | kaihulme97@gmail.com | kaihulme | kaihulme

Education

University of Bristol   *Bristol*
COMPUTER SCIENCE BSc, FIRST CLASS HONOURS   *Graduated 2021*

Brighton, Hove and Sussex Sixth Form College   *Brighton*
A-LEVEL MATHEMATICS, FURTHER MATHEMATICS AND COMPUTER SCIENCE, A*AA   *2016*

Work Experience

University of Bristol, Computer Science Department   *Bristol*
PROJECT MENTOR AND TEACHING ASSISTANT   *Sep 2019 - Jun 2020*
- Mentored groups of students with their software engineering projects and provided teaching assistance in coding labs.
- Hosted weekly meetings to give technical and peer advice, ensuring they met their release requirements and stayed on schedule.

Kongs of King Street   *Bristol*
SUPERVISOR   *Sep 2017 - Jan 2020*
- Worked in a busy bar in Bristol alongside my studies; promoted to supervisor role which saw me supervise a team of 10+ staff.
- Managed mine and other's time ensuring the team worked together effectively during busy periods, increasing both efficiency and organisation.

BioScientifica   *Bristol*
SOFTWARE ENGINEER (THROUGH UoB PROJECT)   *Sep 2018 - May 2019*
- Team lead for full software product and portfolio for a client at BioScientifica, with successful trial-run held at SfE BES 2019.
- Full stack development of Spring Java web app and REST API, hosted in AWS with MySQL database.
- Utilised agile and test-driven development, building CI/CD pipelines with CircleCI and managing my team through GitHub and Jira.
- Showing strong team management and leadership skills, I was put forward to mentor project teams the following year.

Projects

GANs for Alzheimer's Disease Detection   AD-GAN
- Thesis project studying the use of GANs as an augmentation technique for improved Alzheimer's Disease detection in MRI volumes.
- Developed neuroimaging pre-processing pipelines with NiPype to extract brain regions from MRI volumes for use with ML models.
- CNN classification of sliced MRI volumes and implementation of GANs in TensorFlow / Keras through custom training logic.
- Built as Python package with containerised CUDA environment for GPU deployment using Nvidia-Docker.

NestPi   NESTPI
- RaspberryPi nest box camera and Flask web app for monitoring, hosted by AWS EC2 instance with RDS SQL database and S3 for video storage.
- CI/CD pipeline implemented with GitHub actions automates testing with Pytest and build deployment to AWS services using Elastic Beanstalk.
- Containerised Gunicorn application, with automated publishing to DockerHub and AWS instance utilising docker-compose.

Mental Health and Screen Time   ALSPAC-MHST
- Data science team project for Jean Golding Institute, analysing ALSPAC data for correlation of screen usage and child mental health issues.
- Developed various multivariate model-based imputation methods using Scikit-Learn and XGBoost to handle missing data.
- IEEE paper with full analysis and methods available on GitHub repository.

Dartboard Detection   DARTBOARD-DETECTION
- Dartboard detection using OpenCV and traditional computer vision techniques, implemented in C++ and Python.
- Bounding box detection from images using an ensemble of Viola-Jones cascades, Hough transform shape detectors and KMeans clustering.

Game of Life   GAME-OF-LIFE
- Concurrent implementation of Game of Life in C (XC), using parallel programming concepts such as farming and inter-process communication.
- Embedded application for XMOS xCORE-200 with bit-manipulation optimisations to maximise limited resources.

Key Skills

Languages and Technologies	Python***, C/C++**, Java*, SQL, Linux, Docker, AWS, Git
Development	Agile, Test-Driven Development, CI/CD, Object-Oriented Programming, Parallel Programming
Frameworks and Packages	TensorFlow / Keras, Scikit-Learn, XGBoost, OpenCV, NumPy, Pandas, Flask, Pytest

Achievements and Awards

2020	**Bristol PLUS Award**, for outstanding extracurricular study and work experience whilst at university.	*University of Bristol*
2016	**Oxford Bebras Gold Award**, elite category computational thinking challenge, performing best in class.	*BHASVIC*
2016	**EPQ**, written on quantum computing and its future impact on society.	*BHASVIC*

Interests

- Building PCs, playing with RaspberryPis and configuring Linux distros.
- Road & mountain biking, Brazilian Jiu-Jitsu, yoga and cooking mushrooms I find whilst hiking.