Graham Ross

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About

I am a software engineer with a background in physics. I have experience developing machine learning models for computer vision tasks and creating full stack web applications.

Languages: C++ · Java · Python · NodeJS · SQL
Tools: Git · Jenkins · Linux · PyTorch
Web: Express · Flask · HTML/CSS/JavaScript · ReactJS · Sequelize

Employment History

The Francis Crick Institute
Oct 2021 - Present

Software Engineer (Machine Learning) — *London*

ML Results Visualiser | *Jenkins, Flask, ReactJS, SQLite*
- Worked closely with end users to develop a web application to visualise results from a deep learning model
- Chose suitable libraries for the given requirements and developed the entire production ready applications
- Created a CI/CD pipeline in Jenkins

AI Explainability | *OpenCV, PyTorch*
- Researched and implemented methods to explain neural network decisions
- Aimed to improve trust in decisions for use in a clinical setting
- Added to an existing ML pipeline to output figures and metrics for given predictions

GPU Accelerated Image Processing | *Dask, Java, Python*
- Collaborated with external institutions to develop a plugin to allow GPU accelerated image processing for an image analysis application
- Used Dask to manage multiple GPU processes to support the local HPC compute cluster

Personal Projects

Doodle Recognition | *ONNX, PyTorch, ReactJS*
- Created a convolutional neural network in PyTorch to recognise drawings using the Google 'Quick, Draw!' dataset
- Used ONNX runtime to allow the nextwork to run in the browser
- Developed a responsive interface with React to demonstrate how the network recognises drawings in real time

Tech Blog | *AWS, Express, MySQL, ReactJS, Sequelize*
- Created a blog website for users to post tech related tutorials
- Integrated with a third party authentication provider to allow users to create accounts
- Used the Sequelize ORM with a MySQL database to store articles and user info

Education

University of Glasgow
Sept. 2017 – June 2021

BSc Physics with Astrophysics - First Class
- My final year physics project aimed to make improvements to a FORTRAN program which used genetic algorithms to solve differential equations.
- Used NumPy and HEALPix to investigate the structure of the Milky Way galaxy using the largest full sky hydrogen emission survey in my final year astronomy project.

Additional Awards

Harvard CS50: Introduction to Computer Science · NVIDIA Fundamentals of Deep Learning Certificate
· Advanced Higher Mathematics Prize