JOEL CLARKE

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Profile

A creative and inquisitive Computer Science graduate with Leadership and Team experience.
Looking to begin their career in Software Engineering.

Languages

Python 3 | NodeJS (ES6)
HTML / CSS, SQL, Java, Rust

Technologies

Git, VueJS, FeathersJS, NumPy, PyTorch,
Jupyter Notebook, SQLite, AWS ECS, Redis,
Weights and Biases, Hypothesis

Experience

PhD

Royal Holloway, 2018 - 2022

Though discontinued, my research was dedicated to improving voice assistants to handle stammered speech through the use of machine learning and deep learning techniques.

I developed a data gathering web application named "Stammered Voice", inspired by Mozilla's "Common Voice" web application. I used VueJS for the frontend and FeathersJS for the backend on top of an SQLite database - all hosted on an AWS Lightsail server.

I created tools for manipulating fluent speech datasets to create a synthetic dataset of stammered speech in Python 3.

I developed an experiment suite using Python 3 and PyTorch. The suite utilised CUDA to conduct experiments on the GPU and reported results using the Weights and Biases web application. These ran on an AWS EC2 server. I communicated obtained results through reports compiled with Jupyter Notebook.

Research Assistant

Royal Holloway, Summer 2017

I assisted a PhD student with research that utilised machine learning to assign symbols to stripped binary files. I developed a script in Python 3 to match the symbols to the correct stripped functions based on the signatures of the functions.

Royal Holloway, Summer 2016

I assisted a PhD student with research dedicated to looking for insecurities in SSL Certificates for Android Apps using a program called Mallodroid. I developed a script in Python 3 to run Mallodroid over a large corpus of apps and produce a mapping of apps to faults, and another to summarise said mapping to provide a report of the corpus' faults.

Teaching Assistant

Royal Holloway, September 2018 - March 2022

I mentored Computer Science students in the areas of Object Oriented Programming, Databases, and Intelligent Agents by assisting them in labs and marking their code.

Member of Leadership Team

The Journey Church (2018 - Present)

I lead a church as part of a voluntary team. I take on a variety of administrative tasks, mainly to do with managing finances, updating our website, and maintaining relationships with other churches and Christian initiatives.

Projects

Ivy

github.com/unifyai/ivy

I contributed to a project called Ivy - a deep learning framework programmed in Python 3 dedicated to providing a platform that unites other frameworks: NumPy, PyTorch, Tensorflow, and JAX. I implemented the 'convolve' method in their NumPy backend, as well as test generation for said method using Hypthesis.

VacuumWorld

github.com/dicelab-rhul/vacuumworld

I worked with a team of people to complete a project called VacuumWorld - a multi-agent simulation platform, with implementations in Java and Python 3. This is used for practical lab work in the Royal Holloway Intelligent Agents course.

CodeCrafters

github.com/DarthEmpty/codecrafters-redis-python

I taught myself about Redis by following a course run by CodeCrafters. During this course, I implemented a subset of the functions in Redis using Python 3.

Bible Bot

github.com/DarthEmpty/bible-bot-rust

I developed a program capable of reading the comments made on specific subreddits, identifying a reference to a bible verse, and posting the referenced excerpt as a response. I did this initially using Python 3 and the praw library, and then again using Rust and the orca library for increased reliability and performance (link above), using AWS S3 to store config information.

Education

First Class Computer Science BSc

Royal Holloway, 2015 - 2018

Other

- Tutored GCSE-aged students in Maths and Sciences, greatly improving their grades.
- Wide range of voluntary experience in customer facing roles, for which I have won awards.
- Self taught artist with a keen interest in multiple disciplines, digital and physical.