JOEL CLARKE

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Profile

A creative and inquisitive Computer Science graduate with Machine Learning experience.

Languages

Python 3, Typescript,
HTML, CSS, SQL

Technologies

NumPy, PyTorch, NextJS, VueJS, FeathersJS,
TailwindCSS, SQLite, Git

Experience

Postgraduate Studies at PhD Level

Royal Holloway, 2018 - 2022

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.

1st Line IT Service Desk Technician

Ashford and St Peter's Hospitals (NHS), July 2023 - Present

As a member of the IT Service Desk, I work with a team of 4 to deliver sound consultation and provide a range of IT services for the whole trust.

While at this position, I improved the efficiency and reliability of our internal processes through automation using both Microsoft Power Automate and Visual Basic for Applications, and ensured that other members understand the new processes.

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.

Projects

Ivy

github.com/unifyai/ivy

I contributed to 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 Hypothesis.

joelclarke.co.uk

github.com/DarthEmpty/joelclarkev2

Development of my personal website is always ongoing. I taught myself how to use NextJS, Typescript, and TailwindCSS in order to showcase myself and my skills in the aforementioned technologies. The website is hosted on Cloudflare.

Transpose

https://github.com/DarthEmpty/Transpose

I am currently working on a tool to transfer music playlists between music services like Spotify, Amazon Music, and YouTube Music. I am writing the tool in Typescript, and using Axios to communicate with the APIs of the respective music services.

VacuumWorld

github.com/dicelab-rhul/vacuumworld

I worked with a team of 4 to create a multi-agent simulation platform. This project has implementations in Java and Python 3. This is used for practical lab work in the Royal Holloway Intelligent Agents course.

Education

First Class Computer Science BSc

Royal Holloway, 2015 - 2018