

JOEL CLARKE

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Profile

A creative, efficient, and innovative [Computer Science](#) post-graduate with [Machine Learning](#) and [Leadership](#) experience.

Education

1st Class Bsc
Computer Science
Royal Holloway

Languages

Python 3, TypeScript,
HTML, CSS, SQL

Technologies

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

Experience

IT Service Desk Technician - Ashford and St Peter's Hospitals (NHS), July 2023 - Present

I deliver IT consultation, solutions, and high quality customer service to the professionals across all sites in this NHS trust.

- I communicate complex concepts to many service users with varying IT proficiencies.
- I lead my team by taking on tasks beyond my remit and supporting colleagues when they need help.
- I take initiative in improving the efficiency and reliability of internal processes through automation using Power Automate and VBA.

Postgraduate Student (PhD) and Teaching Assistant - Royal Holloway, 2018 - 2022

I researched the improvement of voice assistants such that they would handle stammered speech, making interactions with them more accessible and intuitive.

- I theorised a Disfluent Auto-Completion system that would sit as a layer atop a voice assistant and would converse with the user to interpret a disfluent sentence.
- I experimented with machine learning and deep learning techniques using PyTorch and CUDA to classify fluent and disfluent speech - yielding a 90% accuracy during testing.
- I developed a data gathering web app using VueJS, Feathers, and SQL and generated a synthetic stammer dataset by manipulating fluent speech in Python 3 to amass a dataset of stammered phrases.

Future work would include building the Disfluent Auto-Completion system, further improving the classifier, and making the speech in the synthetic dataset more realistic.

I also mentored undergraduate students by supervising and assisting them in labs.

I left these roles to pursue employment opportunities in my field.

Research Assistant

[Royal Holloway, Summer 2017](#)

I contributed practically to postgraduate research that utilised machine learning to assign symbols to stripped binary files. Using Python 3, I reassigned labels to stripped functions - identifying them by their signatures.

[Royal Holloway, Summer 2016](#)

I contributed practically to postgraduate research dedicated to identifying Android apps with insecure SSL Certificates. Using Python 3, I identified specific faults in apps and generated a high level summary of the results.

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, and generated tests using Hypothesis.

joelclarke.co.uk - github.com/DarthEmpty/joelclarkev2

I taught myself how to use NextJS, Typescript, and TailwindCSS to showcase my skills and character. The website is hosted on Cloudflare.

Transpose - github.com/DarthEmpty/Transpose

I am developing a tool to transfer music playlists between music services like Spotify, Amazon Music, and YouTube Music using Typescript.

VacuumWorld - github.com/dicelab-rhul/vacuumworld

I contributed to the creation of 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.