Niall Coleman-Clarke

I have been programming as a hobby since 2013 and my first paid job was in 2016. I like to explore a variety of different areas in computer science and solve challenges that come up in each project. I have many personal projects on **my github**.

Education

2018-2021 **Computer Science and Artificial Intelligence BSc (Hons)**; University Of Sussex

Grade Received: 1st (79%)

2015-2018 **College Education**; Bartholomew's Tutorial College (Brighton)
A-Level results obtained:

A: Computer Science
A: Mathematics
B: Physics

Work

Cartographer: React Developer
(May 2022 - Present)

I assisted with the development of a cross-platform form engine for a geographical data collection platform with web and mobile client apps. The project involved work on multiple projects for web and mobile using TypeScript, React, using a variety of build tools and other libraries.

University of Exeter: Contract Map Embed Development
(July 2023 - October 2023)

I created an interactive map embed, which displayed publication data (containing location data) provided by the university, to then be shown as points on a map. On the project I went from doing requirements analysis, to building a quote from doing time estimation for each feature. One of the requirements was to create a universal solution for any dataset. So I created a configuration, as well as a templating language in the form of markdown with some context processing, so that they had control over how the publications were being shown. This configuration was all contained within a single file, with YAML as front matter, and then markdown being the publication rich text format.

Photobot: Python Django Development/Google Firebase Development
(April 2021 - March 2022)

I started work on an existing codebase as the sole developer, where I accomplished a number of tasks and worked across a few products. One of the tasks involved upgrading the Heroku stack from cedar-14 to heroku-18, where I also upgraded the minor Python version and it's dependencies. I also worked on custom Python client code, which communicated with the server's API, which I was also working on. I also introduced many unit tests, to help ensure reliability and give confidence that things work the way they should. Another one of the products I worked on was using the Firebase stack to host embeds, where they would be able to seamlessly fit into any page. These embeds

would be able to receive custom styling/text content from the parent page to not disrupt the user experience/webpage interface.

Buzzshot: Python Django Developer
(July 2019 - August 2021)

I added a complete new feature to the app all the way from specification to deployment to end users, with coding in Python, HTML and CSS and including automated testing. I learnt about using Django in the industry; implementing services and interacting with APIs. I learnt how to contribute and work with an existing codebase and also adhere to the standards already in place.
I also developed a new app for Buzzshot from idea to launchable product, on my own where I got handed a brief and I had control over the rest (including UI - front page as well).

Peer Assisted Learning Program: Leader/Mentor
(September 2019 - June 2021)

Throughout 2nd and 3rd years at university, I worked in the peer assisted learning program, helping other students in computer science with their understanding, and assignments, and exam preparations. The learning was mutual - while I helped them, I also learnt about the many different approaches to solving a given problem.

UXBrighton: Front-end Web Developer
(August 2019 - September 2019)

Worked directly on the UXBrighton website using HTML, Javascript and CSS. When working, I had to keep in mind responsive web design principles and have learnt how to use them. I also helped getting the website to comply with the WCAG-A accessibility standards.

Buzzshot: Lua Script Developer
(August 2018 - August 2018)

I wrote Lua code to run on an embedded system housed in an SD Card to allow direct integration between DSLR Cameras and the Buzzshot system. I overcame the challenges of poor existing documentation and a small, niche community.

- I delivered the project on time, within the work period

Google Fonts: Software Developer in Test
(August 2017 - August 2017)

I worked over the summer for google fonts as a developer in test using Python to write unit tests, as well as other miscellaneous tests. I learnt how to use git in a professional environment on a project with multiple contributors.

- **Commits** that I made while working there

Volunteering

Codebar: Programming Coach
(October 2017 - January 2019)

I volunteered for a while at Codebar in brighton, an organisation whose goal is to get more underrepresented groups into tech roles. I think it's a fantastic cause which is why I did it. I found teaching there incredibly rewarding and also educational for me as I learned things when coaching.

- Taught Python, Javascript, HTML, CSS, Java

Howreadable: Experiment Development
(December 2018 - December 2019)

I helped design the second iteration of this experiment which aims to collect empirical evidence on whether certain coding constructs/standards are more readable than their alternatives. I helped in defining the experimental method, the UX of the participant facing website, and designing and writing the code snippets used as test cases.

Work Experience

Wish Studios
(August 2018 - August 2018)

I worked with the Unreal Engine where I made my own personal game mechanics. I had an insight into the games industry as well as how work might be for a games developer.

- Used the Unreal Engine's blueprints for GUI programming

Pragmatic WordPress Agency
(April 2017 - April 2017)

I had the opportunity to shadow many people working at the web agency. As a part of the work experience, I worked on my own personal portfolio website using wordpress with a little bit of PHP, HTML and CSS.

Technical Experience

Platformer Game: Personal Project

A simple platformer game I created using the Love2D game engine which uses Lua to program. Towards the end of the project, I did shading for the game as well which was written using GLSL. The goal was to create everything myself and so I did; from physics to an ingame map editor and even down to the compression of those maps. I worked on it alongside college for 2 years.

Platformer Map Compression: Presentation

I gave a talk at a programming meetup (mainly about Javascript, but can be anything to do with programming) here in brighton called **asyncjs**. The talk was on how the map compression for my platformer game works, including the algorithm and the file format. I covered areas as complex as bit manipulation to an audience with different levels of experience in computer science. When I was talking to people afterwards, everyone seemed to understand the content in the presentation.

Programming Languages

- **Lua:**
  I started off programming with Lua, creating scripts in the Minecraft mod: Computercraft. I created more and more complex scripts until I eventually had an entire working **GUI** for interacting with the in-game computers. I later found out about the Love2D game engine for Lua where I created many projects including the **platformer game** mentioned above.
- **Javascript:**
  I moved on to NodeJS projects with the help of a tutor where I created many projects. I also do

a lot of codegolfing using Javascript. I love doing HTML canvas animations, including: a **rainbow I made for celebrating pride**, **having fun with circles**, and a **cellular automata sandpile simulation**, **cellular automata particle system written using convolution**.

- **Python:**
  I started learning Python for my GCSEs and also used it for my A-Levels. I have since done many projects with it, including a **Discord bot** which offers many miscellaneous commands. One of the commands is a **text to emoji text** translator which works like **this**. I have also done some **Project Euler** challenges and have made a **repository containing my solutions** to them.
- **Java:**
  In my first year of university, we learnt Java. To better understand linear algebra (which I also learnt at that time), I created a **library** to do vector/matrix manipulations. I also challenged myself to create a **genetic algorithm for the game of life** in Java.
- **GLSL:**
  I have experience with GLSL when using the Love2D game engine for Lua. One of my projects was to create a **trippy/hypnotic spiral** for fun and it turned out to be pretty cool - I figured out how to make spirals in a 2D plane. Another project where I used GLSL for shading was my Platformer game, where I created a **shader** to create scenes in the game like **this**.
- I also have learnt **HTML**, **CSS** through work and I'm very familiar with Jquery, bootstrap, react, SASS, and chakra UI.

Other Hobbies

Music	I listen to many types of music, however I mainly listen to chill, hip-hop, dance and occasionally drum and bass.
Socialising	I love to go out with friends and also love talking with people in general.
Travel	Travelling is something that I have loved ever since I remember; enjoying the culture and also eating the local cuisine.
