George Ogden

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PERSONAL PROFILE

As an experienced freelance software and web developer with in-depth knowledge of multiple programming languages, I have completed a wide variety of projects ranging from apps to artificial intelligence, from software to sudoku solvers. My key attributes are my refined problem-solving ability, stemming from my success in national maths competitions, for example, the British Mathematical Olympiad, as well as excellent time management skills and my robust organisation.

I can work either in a team or independently and I understand the need for communication throughout a project, which I have developed through working on the IoT project. I am fascinated with way in which the programming world changes, and at such a fast rate. I find it important to keep up to date with the latest technological advances.

Programming Skills

- Software development
- Python
- Java
- C++, C# and C
- JavaScript
- Debugging
- Docker
- Web development
- Responsive design
- HTML, CSS and JS
- jQuery
- PHP and AJAX
- SQL and databases
- Git
- App Development
- Object-Oriented Programming
- VBA and Excel
- Testing
- Problem-solving
- Shell Scripts

PROJECTS

GoProgram (2019-2020)

I run GoProgram, a successful, donation-based micro-business, that showcases open-source programming projects. It contains a wide variety of programs, highlighting different aspects of programming. The website is frequently updated to bring viewers new projects and keep up to date with the newest standards. I have coded everything on the website from scratch and it is free to use or modify any of the code. The web pages have been written using HTML, JS and CSS to create a unique finish with custom features.

The section on AI contains a JavaScript library with code for running and creating neural networks, as well as a colour classifier – a useful instance of a neural network that generates a text colour based on the colour of the background. With machine learning playing such an important role currently and continuing to do so, it is undoubtedly important for every software developer to have some involvement in this field.

The second section of the website contains two widely used, open-source software projects that were written in python. Additionally, they have been compiled, making it possible for anyone to run the software, with or without an interpreter installed. Both projects contain a dynamic user interface, uncommon in python programs. One is a graph creator, with linear regression algorithms, and the other is a birthday reminder, where it is possible to import birthdays from other files.

These three projects can be viewed in the browser - a sudoku solver, a calculator and a colour converter. These are not only prime examples of responsive design but also useful tools to have.

App development is more of a hobby than a career path for me. However, I have created two apps, which are available on the website. The prime number checker can factor extremely large numbers, or tell you if they are prime, while the working memory trainer aims to reduce memory loss, and even enhance memory power. These apps are well designed and available on Android devices.

The final programming section on the website is a series of python turtle projects. They are not technically difficult but create fun, exciting designs with interesting mathematical features. Additionally, time-lapses of the program are available, which are calming and engaging to watch.

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IoT Project Hot-Desking Project (2018)

I worked on a team in a project that aimed to make hot-desking more comfortable and efficient. The project involved working with hardware, as well as software to implement code on a Raspberry Pi to run the Tinkerforge hardware stack. The project was sold just after I finished working, which was a huge achievement for the entire team, and reflected the work that had gone into it.

The project was written in python across three operating systems (Debian, Windows 10 and Raspbian) and involved creating various modules to carry out specific subroutines. Two of the modules I contributed most to were the sonsors.py and influx.py.

The sensors.py file interacted directly with the sensors. It contained callback functions, classes and event handlers and managed each connection to the pieces of hardware in the stack. One of my largest contributions was fixing a bug, which had been troubling the other developers for a long time, not because it was my largest input, but because fixing this issue allowed them to use multiple sensors on the same component, as before it was only possible to use one, which decreased the cost and increased the efficiency of the project as a whole.

The influx.py file interacted with a Grafana server, which allowed remote access to the data on the sensors, one of the overall aims of the project. It would send encrypted data from the hardware directly to the server with various metadata, where it would then be collated, logged and represented as various graphs. This allowed the state of the desks to be monitored so that a controller would know which desks were empty, as well as desk height, temperature and other information.

Crime Mapping Web Application Collaboration (2020)

I worked with another developer to create a web application to map crime in the UK. The software itself runs from an Angular.js server, using a Police API to collect data about crimes in an area, as well as Email.js to then send emails to a specified email address about crimes in an area.

I wrote the CSS myself to ensure a clean, well-finished look that the user interacted with, as well as sorting out the DOM to create custom elements that displayed each section and item. While my contribution to the email service was limited, as this was mostly using an imported module, I also worked on presenting the data that had been received from the police API, as well as presenting all the data and handling user events.

As well as writing the program, I was also responsible for running test cases. These included functionality testing, validation testing, verification testing and compatibility testing to make sure that this app could be used in every scenario and guaranteed the success of the project when it was used by others.

AWARDS RECEIVED

Challenges and Olympiads (2012-2019)

Across the years, I have been a high achiever in maths challenges and Olympiads. Every year, I have achieved a gold award in the maths challenge and then gone on to achieve either merit or distinction in the follow-on Olympiad, scoring full marks in one of last year's challenges and working hard so that I do the same again next year. These challenges and Olympiads improve my problem-solving ability, and my commitment, as training for them requires hours of hard work and dedication. Additionally, I captained the winning team in the Maths Feast Competition, which required coordination and leadership to beat eleven other teams. I am also part of the Hans Woyda Team, which requires mental maths to be done quickly under pressure. To practise for upcoming competitions and Olympiads, I am enrolled in the United Kingdom Mathematics Trust mentoring scheme which allows me to solve challenging mathematical problems and share my solutions with an external mentor.

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VOLUNTEERING

Volunteering at Scope Charity Shop (2018-2019)

I have spent over 140 hours volunteering at the Scope charity shop. At first, I was responsible for hanging up clothes or sorting cards. However, as I would carry out tasks quickly and efficiently, often going above and doing extra to what was required, I am now responsible for serving customers and setting up displays. Through Scope, I have improved my ability to interact with customers and my team-working skills, as well as refining my time management and organisation across a different environment. It is extremely rewarding knowing that you are making such a large difference to people both in and outside of the local community.

Volunteering at the Coffee Morning (2017-2019)

I regularly help at the coffee morning at my local church serving coffee and cake to (mostly elderly) local residents. My tasks include setting up tables and chairs, making tea and coffee, serving cake, interacting with customers, as well as washing and drying up. As I am the person who volunteers most frequently, I am often trusted to lead the operation, which can often be challenging. However, it has taught me to be organised and to work as part of a team to continue the smooth running of the service.

Primary School Summer Sports Camp (2018)

I assisted the sports coach to run various sessions for children in year 1 to year 6. I was also responsible for running my own sessions which required me to set up and plan activities to make sure that the children had fun in a safe environment. This required punctuality, commitment and, at times, stamina to make the sessions as entertaining and engaging as possible. I could tell by the faces of the children that they were enjoying these sessions, and many came back the following year.

HOBBIES

One of my most passionate hobbies is cross country running. I train as often as I can, and I race at most weekends, as I am part of the club South London Harriers. When there is not a race, I do the parkrun, of which I have completed 134. My fastest parkrun is 16:48, which I completed at Dulwich on New Year's Day. Through cross country, I have learnt to be committed and manage time well across sport and academia.

Another sport that I play is squash. I am in the 1st V, and I train twice a week. Squash is a lot faster paced than most sports, so it requires fitness, as well as skill, to outmanoeuvre your opponent. I went on a squash tour to Poland to train at the world's largest squash club. Squash teaches me to be determined, because it is always possible to win, whatever the score says.

While not everyone regards chess as a sport, I play in the 1st VI, and my ratings are 145 (rapid) and 122 (standard). Chess teaches me about strategy and creative thinking, while the long games I play (sometimes over 3 hours) improve my concentration.

In my spare time, I play the violin in an orchestra and a strings group at Grade 7 standard. I find that by playing the violin, you hear the different voices of a piece, rather than just one part. By playing the violin, I have learnt the need for perfection and how to practise efficiently and effectively.