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Nationality: British
Date of birth: 26th March 1987

Personal Statement

I am an inquisitive person: I want to work on the most challenging, most interesting projects I can. I want to be stretched and engaged by my work. This has driven me to study physics and, via creating software and hardware tools for my research, to explore programming.

Over the 5 years of my studies (PhD. and MSci.) I taught myself C++, Python, VHDL, git, and bash; as well as some JAVA and Objective-C. I have grown from a someone who programs for work into someone who loves programming for its own sake. Leaving academia was difficult but working in startups has pushed me every day and there's always something new to learn.

Skills

Go, Javascript, C++, Python, VHDL
AngularJS, Django, Backbone, Flask
Git, Grunt, Sass, Less, NodeJS

PostgreSQL, MongoDB, ElasticSearch
HTTP, JSON, SQL, HTML/CSS

History

- Jan 2014 - present Full-Stack Developer plentific.com
As the first of a team of 4 developers I was tasked with co-ordinating handover of our codebase from a consultancy as well as developing the beta design to release spec. I lead our efforts to improve and expand the current test suite on both the Django back end and the AngularJS front end. I also oversaw rewriting the grunt build scripts and implementation of a snapshotting system in order to serve bots with pre-rendered versions of our website. My most recent task has been to refactor the implementation of our house-price optimisation code.
- Jul 2013-Jan 2014 Full-Stack Developer carhoots.com
As the only full-time developer it was my responsibility to maintain our servers and fix bugs as they appeared, in addition to implementing new features. I started with what I knew: backend development, although in a new language: Go. I implemented several new end-points for our API as well as massively increasing our test coverage (using Javascript's Mocha library for testing). Spurred by the departure of our front-end intern I started learning Javascript in order to add reports from my tests to our NodeJS build server. My next task was overseeing the testing and launch of our site as we transitioned from bootstrap CSS to LESS. My most recent task has been writing an embeddable Javascript widget to display recent social interactions on our site.
- 2009-Jun 2014 PhD. Particle Physics University College London
Supervisor: Professor Matthew Wing
I have recently finished my PhD in particle physics. Over 5 years I have worked on two projects at University College London (UCL). Characterisation of the Muon Science Innovative Channel (MuSIC) beam-line and the development of firmware interface at European X-Ray Free-Electron Laser (Eu-XFEL).

PhD (cont.)

MuSIC

My work on MuSIC has primarily been in the analysis and simulation of our particle beam-line, and its interaction with our detectors. The simulation used C++ and a framework called Geant4 to create a realistic and useful model of the system that we could use to plan detector configurations and experiments. It also allowed us to test the effectiveness of our analysis techniques, and refine them without wasting precious beam time. I did the bulk of this analysis using Python scripts with hooks into a C++ statistics toolkit called ROOT. I also wrote a Python-based UDP controller to interface with our data acquisition hardware.

Eu-XFEL

I have been developing firmware for the LPD project using VHDL (a hardware description language). My clock and control interface acts as an intermediary between the common upstream timing systems and the custom detector downstream. As such I have two very exact interfaces that I must conform to and translate between, as well as providing my own internal interfaces for use by on-chip software and other firmware blocks.

2005 - 2009 2:ii MSci (physics)

University College London
Supervisor: Dr David Waters

My dissertation was a feasibility study of underwater detectors. Using Geant4 and C++ I wrote a parametrised simulation of the environment and tested potential detector configurations. Additionally my final year courses included statistical analysis, programming and mathematical methods.

2003 - 2005 GCE A Levels

The Ashcombe School, Dorking

Physics [A], Maths [A], General Studies [B], Further Maths [C]

Achievements

2012 Key organiser for the 500-person camping festival, Electro-Magnetic Field, in Milton Keynes. As a member of the organising committee I had responsibility for managing volunteers, both in the run-up to and during the festival. I implemented the volunteer sign-up system using Flask, SQLAlchemy and Jinja.

2009 - 2011 Helped teach an introductory course to object-orientated programming using JAVA. As a demonstrator I was responsible for helping students work through the lab problems and understand JAVA as well as OO programming.

2008 Wrote and directed a large scale juggling performance ("Balls for Balls! Beyond the looking glass") at The Bloomsbury Theatre, raising over £2000 for the Orchid cancer trust.

Interests

Making short films, programming, making board and video games, cycling.
