

Emily Shepherd

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Hi, I'm Emily. I am a Master of Engineering in Computer Science from the University of Southampton, with first class honours. I have coding experience working both in multi-developer teams and as a freelance solo contractor. I am an effective communicator to both technical and non-technical audiences and comfortable working to tight deadlines.

PHP · JavaScript · (X)HTML(5) · CSS · Java · SQL · C(++) · Python · Perl · Bash · LaTeX
Apache · Postfix · Dovecot · Nginx · AWS · Linode · *nix · Git

ARM, Group Project, 2015 – 2016

As part of my final year, I worked in a team of five undergraduates on a project given to us by ARM: to design and develop a complex proof-of-concept application for their new subthreshold M0+ processor, which is currently in development. We chose to build a device and develop an embedded Machine Learning algorithm, to recognise certain forms of exercise.

I was responsible for modelling the algorithm in Java, and then programming it in C, optimising its code and any required libraries to fit into the device's tiny 8kB of memory. I successfully implemented a working system in just 4kB for both program code and runtime data, running at 106kHz. ARM was very happy with the results, with the project earning a first and my individual contribution was graded as joint-highest, awarding me 76%, a good first class grade.

Spa Staff.com, Web Developer and Mistress, 2011 – Present

I took over the management of Spa Staff.com from a professional web construction company in 2011, while I was still in Sixth Form. Spa Staff is a spa recruitment service, with over 22,000 candidates uploading CVs to the site, and over 3,000 employers searching these and posting job advertisements.

I have been solely in charge of the technical administration and development of the site, which has given me a lot of experience of PHP, SQL and HTML/JS/CSS. The site's hosting has been managed by me, initially on an EC2 instance in Amazon's Elastic Cloud until recently, when I moved to Linode, with postfix setup to mail via SendGrid, AuthSMTP or directly, based on certain criteria.

In 2014, Spa Staff contracted a second freelance developer for minor bug fixes and improvements while I worked on a major site redesign, implementing a responsive design to better tailor the site for tablets and phones. I was put in charge of training this developer in the technologies the site uses and assigning / overseeing jobs.

Legit: Distributed Code Review Tool, Individual Project, 2014 – 2015

For my third year at Southampton, I worked on a year long individual project. I conceptualised and developed Legit, a code collaboration tool based on Git. Its purpose is similar to that of Gerrit, with the difference that review / vote meta-data is tracked within the Git repository. This creates a distributed audit trail, which is visible to anyone with access to the original repository, removing the point of centralisation typically required in large scale projects. I was rewarded with a mark of 81% for this project, a high first class grade.

Music Jobs, Web Developer, August 2010 – July 2011

In the summer of 2010, I became a paid intern at their London office. My main task was to implement a new skin for their web site to look like an iPhone "web-app". This gave me good experience with CSS and JavaScript.

In 2011 I was invited to their LA office, to continue as a Web Developer. I was tasked with refactoring their procedural payment systems into an MVC architecture. This gave me extensive insight into the best practices when working with objects in PHP, as well as the APIs used by SagePay, Braspag and PayPal.

Education

University of Southampton, 2011 – 2016

I graduated with a first, after studying on an integrated Masters of Engineering, reading Computer Science. The degree has introduced me to a plethora of concepts and subject areas, including: Low Level Graphics, Compiler Engineering, Database Design, Operating Systems and Memory Allocation. During my time at Southampton, I earned two scholarships for being within the top 10% in my first and second years, as well as the Netcraft Prize, for being within the top 10 of my cohort in third year.

Within the Students' Union, I was a member of Council, a Course Representative, a Faculty Officer, Nightline Officer and on various sub committees.

The Leys School, Cambridge, Secondary School and Sixth Form

A Levels: Maths: A*, Further Maths: A*, Physics: A*, Chemistry: A

GCSEs: A*s in Maths, Biology, Physics, Chemistry, Divinity, Latin, English Literature
As in French, German, English Language, History

FSMQ: A in Additional Maths

Casual and Volunteering

Donating Server Resources

Linode provides a very generous 3000GB data transfer out per month, which I do not often use myself, so I donate the remainder by running a tor relay on my server. Over the past two months, the server has received over 2 million connections. The server is also publicly available on the NTP server pool.

Arch Forums and Stack Exchange

When not working on coursework or my own projects, I am a keen member of several Stack Exchange sub sites where I actively answer questions, usually relating to PHP web development. Recently, I have joined the community forum for Arch Linux, after finding the process of installing Arch on my own laptop very satisfying. There, the questions have been somewhat more technical, requiring me to assess the output of various operations and complex configuration files. I have found I have been able to explain these in a clear and concise manner.

Nightline

Southampton Nightline is a confidential telephone listening service available to anyone at the University of Southampton free of charge, run entirely by student volunteers. A shift lasts all night, from 8pm to 8am, and requires us to be available to pick up the phone at any time. After joining in 2013, I was one of the first volunteers in my cohort to reach the "experienced" level, allowing me to take calls, aid in training, and oversee others taking calls. In early 2014, I was awarded a prize for the most number of shifts covered.

After only a year at Nightline, I became its head (the Nightline Officer) by cross-campus election. This put me in charge of all of Nightline's day to day operations and its longer term plans and strategies, such as managing the budget and refreshing our constitution and confidentiality policies. When I left Nightline at the end of my studies, I had been on 51 shifts, comprising 612 hours of volunteering.

More Information: emilyshepherd.me · **Portfolio:** github.com/EmilyShepherd