

## Experience

### Senior Software Engineer

*Subtree Inc, June 2018 to present*

Instrumental in the pivot from *Dotmesh* to *Dotscience*, a product which brings software engineering and DevOps best practices to data scientists through automation. Worked on all elements of the stack from React frontend on the dashboard to backend work on runners for user workloads.

Main focus as a software engineer was on backend and infrastructure, using Golang to write APIs, Docker, Kubernetes and GCP for deployment. Wrote storage integration to S3 in order to enable customers to bring in data in from other sources. Rewrote prototyped elements of the system from Python to Golang whilst adjusting those elements to new specification requirements. Wrote extensive end to end and integration tests which helped identify complex problems before reaching the customer.

Introduced monitoring using Prometheus and Alertmanager, supported customers using the product and introduced a support rota. Introduced pull requests to increase code quality and maintainability, continuous delivery best practices and wrote pipeline automation code and configuration using Drone and Gitlab CI. Recruited and hired other engineers, and advised on hiring practices.

### Platform Engineer

*Ocado Technology, February 2017 to June 2018*

Responsible for the Ocado Technology developer platform, a Kubernetes cluster on top of OpenStack infrastructure in each of their generation 2.0 automated warehouses. Development work involved producing and improving continuous integration and delivery scripts. Implemented and evangelised a test driven approach to deployment process scripts to speed up feedback loops, therefore improving developer productivity. Wrote clear and concise documentation. "Ate own dog food" by using the CI/CD pipelines during development of Django/Python applications.

Operational duties included supporting developers in debugging issues with their applications on the Kubernetes clusters. Promoted a culture of learning within my team through written case studies which clearly showed the thinking behind the resolution, and through pairing during incidents. Started additional training initiatives within my department through info-dump sessions where we discussed a specific technical topic in a question and answer format.

Key member of the Monitoring and Alerting working group on behalf of my team for the infrastructure department, which aimed to have a more coordinated approach to monitoring across several teams. Lead meetings, offered my own technical experience and advice on effective use of Prometheus, Grafana and Kubernetes. Lead internal monitoring hackathons.

Extensive time spent running technical interviews, constantly working to make the process more effective for the organisation and less time consuming and stressful for the candidate. Mentored several other members of the team, sometimes answering questions via slack, other times through pairing particularly around operations work. Publicly presented my work at Kubernetes London, Cloud Native London, London Python, Cambridge Python User Group and DevOps Days Edinburgh, in addition to internal training sessions.

### Software Engineer

*Cambridge Consultants, September 2015 to February 2017*

Cambridge Consultants are a product development and technological consultancy. Worked on multidisciplinary teams with projects ranging from household devices through to defence systems primarily in embedded and web systems. One such project was a HTML5 web app for a touch interface to showcase Cambridge Consultants' capabilities to prospective clients. Angular.js was the client-side MVC framework and D3.js was used to display graphs and charts with a Node.js backend. The integration of D3 and Angular was a particularly interesting piece of work, which required working with legacy D3 code written for an

earlier iteration of the product in order to get it to play nice with Angular. As well as being shown to clients the application is displayed in the main office, so all visitors see the project.

Embedded work ranged from developing robust and resilient drivers through to programming state machines and applications for real time operating systems. Took on additional responsibilities around project management including soliciting requirements from clients, delegation of engineering tasks and facilitating collaboration with other teams.

### **Freelance technical writer**

*July 2014 to July 2015*

Contracted to author blog posts, write tutorials and present in informational videos by Premier Farnell, the leading electronics distributor in the UK during the final year of my degree. The content was primarily aimed at electronics hobbyists and the video series, Circuits with Charlotte, received a total of over 85,000 views on Premier Farnell's YouTube Channel.

This work developed my communication skills, enabling me to discuss highly technical subjects with people of varying skill levels; from beginners through to advanced users. Each project, which consisted of a tutorial and a video, took users from the basics of electronics through to having a working system.

Projects included creating a **NFC enabled microcomputer** with a **Windows Azure ASP.NET backend** to allow people to check in using oystercards at events, and creating a bracelet of LEDs which could be given a custom colour and pattern using an android phone app.

### **EAT Intern**

*Airbus Operations, August 2013 - July 2014*

Completed an industrial placement as part of my university sandwich course. Placement was with Airbus, the largest plane manufacturer in Europe. Maintained a python toolkit called EAT (Engineering Application Toolkit) which interfaced with the CAD modelling engine CATIA. Toolkit reduced Aerospace Engineers reliance on the CATIA UI without needing to use the complex C++ API directly, enabling non-software engineers to write their own tools. Built and improved applications using the toolkit, varying from stress calculations to fuel systems modelling. Trained replacement interns and helped support work experience students.

## **Education**

**Degree** BSc(Hons) in Computer Science with Industrial Experience at the University of Hull  
**Grade** First Class

## **Awards**

- Winner of the **G.B Cooke Prize for Best Final Year Project at The University of Hull**  
Recipient of the award for best final year project in a year group of 150 students, due to an average percent score of 93 for the dissertation portion of my degree.
- Winner of the **Bristol Heat of the Institute of Engineering and Technology Present Around the World Competition**  
A competition for 18-25 year olds to present on a technical topic for 10 minutes. Presented a talk about improving Computing education with a particular slant towards using creative technologies to improve inclusion and interest.
- Winner of the **British Computer Society's Lovelace Colloquium, Best Second Year Poster Award**
- Winner of a travel scholarship for the **Grace Hopper Celebration of Women in Computing 2014**  
One of 425 recipients of a total applicant pool of 1,400 to receive full travel, accommodation and entry financial aid to attend the conference in **Phoenix, Arizona**, through personal merit and support of STEM education improvement in the UK.
- Winner of one of five **Millennials Scholarships** to attend the **Future of Wireless International Conference 2014**, in Cambridge, UK

## Hobbies and Interests

- **Musician with grade 8 in Clarinet, grade 5 in Piano and grade 3 in Saxophone.** Music has greatly influenced my ability to work with others, memory skills and logical thinking. I regularly attend bands and orchestras to keep these skills sharpened and as a form of relaxation. This also influenced my *Final Year Project* during my BSc, which was a **sheet music organisation system**, in order to make it easier for classical musicians to browse their own libraries and collate it with online resources.
- **STEM Ambassador.** I volunteer as a STEM Ambassador in order to improve computer science education. Previously I have ran workshops using wearables in order to teach programming concepts in a more creative and inclusive way, supported teachers with resources and given talks on computing education at meetups. More recently I have been actively involved in mentoring young people to take part in PiWars, a Raspberry Pi robot building competition hosted in Cambridge, UK every year.

*References available upon request*