



Case study

Software Engineering

Name:	Louise
Age:	26
University:	Staffordshire
Course:	Forensic Computing BSc
Current job title:	Software Engineer

How did you get your current job – what were the steps you took whilst studying?

“My degree enabled me to do an intercalated year and I did my industrial year placement with GCHQ as a Sponsored Undergraduate Technologist. I applied for the student scheme at the start of my second year, and started at GCHQ the following September. Having enjoyed my placement so much I applied for a full-time position during my final year and I started back here again soon after I graduated.”

Why did you decide to join GCHQ?

“Signals Intelligence, or SIGINT as we call it, sounded like just the sort of field I wanted to be involved in. I was keen to get involved at the cutting edge of technology/computing techniques and to do work that wasn’t possible anywhere else. Plus, GCHQ offered the opportunity to work in a unique environment where I could apply my skills to help safeguard the UK – something that other employers just couldn’t compete with”

How relevant was your subject of study in securing your current job?

“My degree was a great help to me. My subject was a specialisation of the computing degree, so it still gave me the good foundation I needed in software and programming, and the forensic component gave me experience in analysis and an understanding of the UK legal system as it relates to computers and computing.”

Describe a typical working day in your current job.

“I have any number of projects that I am working on at any one time, so I can switch between them as I choose or need to. I may work on a change request in the morning, adding a new feature to an existing application; this can involve speaking to stakeholders to discuss their needs, and designing how the new feature will integrate with the existing codebase and interfaces.

In the afternoon I might switch to doing some bug fixes, choosing a ticket off the work queue, diagnosing the problem, and amending the code as necessary to resolve the issue. I will also update and run the tests for that application before re-releasing the product.

So it’s pretty varied and consequently requires me to apply flexibility in my approach.”

What skills are necessary to perform well in the role?

“Knowledge of any programming language is obviously a big benefit, many of our products are written in Java or C++; but even if you haven’t worked in these languages, GCHQ will provide good training to get you going, and then further advanced training once you’re up and running. So having a desire to learn and a willingness to pick up new skills is just as important as technical ability.”

What’s the training like?

“Training is available in all sorts of programming languages, and you can attend any that are relevant for you. GCHQ provides a range of courses for whatever needs you have – whether you are entirely new to programming, learning a new language based on one you already know (e.g. C++ for Java Programmers), or requiring an advanced course. They’re also really keen that you develop ‘softer skills’, such as time management and delivery methods, so there are courses in these sorts of areas too. If you feel you have a particular training need, in order to be more effective in your role, GCHQ will usually be able to arrange it.”

How has your role developed and what are your career ambitions?

“When I first started I worked on small scale programming tasks. Now I am involved in the full system lifecycle from initiation and design through to testing and integration. I still do a lot of programming, but it is often with a larger perspective in mind. My career ambition for the future is to become a senior software architect, designing the large scale systems and their integration; for now though I’m still happy being a software engineer.”

What do you enjoy most about your job?

“I love programming, so getting to do that every day is the best bit. The fact that we program SIGINT systems, working on the cutting edge of technology and developing new techniques to meet new and changing demands just makes it even more interesting.”

What are the most challenging parts of your job?

“The nature of our business means that I need to keep up-to-date with new and emerging technologies and be ready to adapt quickly. GCHQ’s requirements can change very quickly and I need to be able to respond to that and come up with new solutions to meet them. I thrive on a challenge!”

What are the best things about working in this sector?

“I’m really proud about what we do and how I contribute to it. It’s good to know that we are really making a difference...even if you can’t tell anyone about it! ?”

Finally, what advice do you have for other people who would like to get into this career?

“If you can show you are passionate about technology, and your own use of it, I think that will get you a long way. You need to show that you are dedicated to your field.

Due to the nature of our business it’s not really possible to have direct prior experience; instead you need to show that you are a keen learner and able to use new skills and information.

Finally, it can take quite a while from application to getting through the door (due to the necessary security constraints we need to adhere to), so make sure you apply early, don’t leave it until you leave university.”

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