VEC
VIRTUAL ENGINEERING CENTRE

/ Skills for Life

The Skills gap is a growing concern for the UK and national government. In 2021, 22% of employees admitted to lacking specific digital skills that can affect their performance with an additional 81% of business owners claiming the skills gap negatively impacts their business.

As we celebrate the 16th National Apprenticeship Week, the VEC looks to celebrate and highlight the benefits of introducing apprenticeships to the business for developing digital skills for the future and the impact and value this delivers for the future economy.

Shaun Johnson, Project Engineer at the VEC, was a returning apprentice and former Master's Student of Mechatronics at the Unversity of Liverpool. Shaun reflects on his skills development throughout his time at the VEC and how it has prepared him for a career in digital engineering.

Did you always know what you wanted to do for a career?

Definitely not; it took me a few years to figure that out. I had some idea when I started an engineering degree, but it wasn't until starting my internship at the VEC and working on lots of different projects that I was able to narrow it down more specifically into Data Science.

What about this career appealed to you?

A few things appeal to me about data science. Firstly, it's quite a large umbrella term of different specialities, which have their own nuances and details but derive themselves from a lot of the same skill sets, meaning you can explore quite different areas without completely reinventing yourself. My initial interest came from the data analysis side, which I found very fun and became absorbed by those projects.

This interest also sparked during COVID-19, so the fact the work can be done remotely appealed to me massively. This offers greater flexibility and less reliance on being in one place all the time.

What steps did you take to achieve this goal?

Once I decided that I wanted this career, it was obvious that the most valuable resource for the knowledge I had was the Virtual Engineering Centre (VEC). The VEC was a great place to develop valuable skills and gain a realistic understanding of what day-to-day life would be like as a data scientist.

I stayed for more apprenticeships in the coming summers, returning to push to work on projects related to my specific interests in addition to finding online training courses.

What first attracted you to the apprenticeship opportunities as the VEC?

Working within the VEC while studying made a lot of sense, as it is based at the University where I was studying. There's also a site on campus offering great convenience, where a lot of the same academic support is available. This also meant any references in my application would be very directly applicable. It also helps that the pay is very competitive, which was helpful to a student.

What skills did you have prior to this apprenticeship?

I had some basic engineering knowledge and was above average at coding for my level, but nothing drastic. My apprenticeship at the VEC was just as much of a place to gain knowledge as it was to use it.

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What skills were you hoping to develop during the apprenticeship?

Mainly I wanted to experience engineering in an office environment. Attending my lecture and visiting the libraries often is one thing, but putting it to practical use was extremely helpful to me.

What skills do you feel you developed during your apprenticeship?

I would say I achieved what I wanted and a fair bit more. My coding drastically improved, I developed much better interpersonal skills in a professional context, and most importantly, I gained a basic understanding of some areas of data science.

I still have a long way to go before I can think of myself as a data scientist, as it is one of those areas where answering one question, leads to two more, but I wouldn't have gotten my foot in the door without the apprenticeship.

Did anything surprise you during this apprenticeship?

The most surprising factor was probably how humbling it was. When I thought of apprenticeships, I pictured making people coffee, shadowing meetings, and undertaking some basic tasks, but it wasn't like that at all. I felt as though I was a part of the team quite quickly, working on projects that mattered.

It was slightly intimidating at the very beginning, but the support from the rest of the team was invaluable and they offered me some good guidance throughout.

Another big surprise was just how much access I was given and how many different technical areas I was exposed to and encouraged to learn. One area was robotics which I found, once in a working environment, was quite different to the theoretical workings I experienced through my learning at University. I was very grateful for this as it highlighted to me some of the key differences and helped to guide my awareness and interests for which skills I wanted to focus on more, as part of my career development and goals.

What type of skills did you need for the tasks you were undertaking at the VEC?

The work you do at the VEC is so varied, that the most important skill by far is the patience and dedication to learn new skills. It was pretty routine that I would go into a new task and feel quite confused and out of my depth at first. The ability to ask for guidance within the team, do some independent study and come out with more confidence is key.

In terms of more specific skills, the most useful was coding. It is one of the transferrable skills for any project I worked on. Picking a language (for me C++ at the time), becoming comfortable in the details and my own workflow, helped a lot to then expand that to other languages.

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Do you feel these will support your future career?

Hugely. I learned so much at the VEC, in a way that applies directly to industry. I feel much better equipped to tackle a professional environment than I would have been without it.

What skills do you hope to develop in the future?

It's an exciting time because after working on lots of different projects, I've finally been able to nail down what I want to do. I want to spend the next few years focused on data science – specifically, my main interest areas are data analysis and machine learning.

Do you think skillsets are changing and which future skills do you think employers will be looking for?

I think so but in a reasonably predictable way. Areas like robotics, cloud computing systems, data science, and software engineering are going to be growing for a long time. Competition for graduate roles is fierce, and I often think that more human skills like teamwork, communication etc are equally important to employers than people give credit for. Lots of people have good grades, but not everyone has good industry experience before a graduate role.

Lastly, what is your dream job or end goal?

I see myself working as a senior data scientist, being able to fully focus on a speciality in either machine learning or data analytics.

Since completing his Master's at the University of Liverpool, Shaun has joined the VEC as Project Engineer, using a number of the skills he developed during his apprenticeships and applying these to supporting businesses and industry on their digital transformation projects.