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**The path to becoming a software engineer**

According to a [recent report](https://www.recruitmentgrapevine.com/article/2017-01-19-majority-of-candidates-apply-for-roles-theyre-unqualified-for), around 50 per cent of candidates have applied for a job that they are not qualified to do. To be considered for a position, candidates are encouraged to have experience from a range of sources, both academically and in a work environment. Businesses are doing more to encourage people to work in sectors, such as software engineering, by helping them gain the necessary qualifications and experience. As well as actively recruiting for permanent roles, many companies provide schemes for students and recent graduates that integrate work experience into their studies.

In this article, Emma Portman, Test and Training Manager at global engineering technologies company [Renishaw](http://www.renishaw.com/), explains the job opportunities available in the software engineering sector and what candidates can do to achieve their career aspirations.

A common misconception of the software engineering industry is that the main component of any job in the sector is writing code. While this is an integral skill for many roles, many industries use sophisticated software systems that require engineers with a range of skills to work in roles such as project manager, software tester and business analyst. The variety of roles available in the engineering sector allows candidates to choose a career path based on their specific skill set.

Personal skills, experience and interests may dictate what path to take when pursuing a career in software engineering. The most common paths are general recruitment, a degree apprenticeship after completing either A-Levels or a BTEC, or a graduate scheme after university. Renishaw is one of the many companies supporting the growth of the software engineering sector through these schemes and frequent recruitment. However, before they reach employment, candidates should carefully consider what subjects to study and personally research earlier in their academic or working life to extend their knowledge of the industry.

**Studies**

When students first consider software engineering as a career path, it is important to choose courses that suit the preferred software roles. Choosing subjects based around science and maths can give students a good introduction to the sector. Awareness of the course content is also important as students should ensure they have a high exposure to coding, either during their course or by personal research alongside their studies.

These courses will prepare a student for higher level learning in software engineering, however many students choose to incorporate work into their studies to strengthen their skill set.

To incorporate studies and work, students can choose an apprenticeship to focus on learning whilst employed, either during a placement year in their degree or studying during their career. This often involves a student choosing to split their degree into a sandwich course with an industrial placement in software engineering, enhancing their studies by incorporating real life experience.

Daniel Freeman, a software apprentice at Renishaw, chose a degree apprenticeship so that he could work towards a qualification while gaining experience at work four days a week. The skills an apprentice gains at Renishaw can help contextualise their studies, allowing them to apply what they have learned to the projects they are involved in. Apprentices also have the opportunity to move around departments and work on a variety of projects to broaden their skills before they decide on a specific career path that best suits them.

University leavers can choose to apply for graduate schemes after university to put them on the career ladder straight away. Companies within the sector offer different ways to gain work experience so students can decide what best suits them in the balance of studying and working.

An investment in apprentices and graduates benefits large companies as they can help the business grow as they learn. Companies like Renishaw have seen a high retention rate amongst graduates and apprentices as they see the reputation of the company and the types of jobs available to them. All members of staff at Renishaw are encouraged to apply their knowledge and personal experiences to large projects, whether they are recruited as an apprentice, graduate or on a placement, as any input can benefit the company’s clients.

**Soft skills**

To be able to contribute personal experiences to projects, candidates must rely on personal knowledge and skills. It is difficult to define the exact technical skills needed in software engineering because of the wide range of jobs, however, there are many soft skills that are needed across the sector, such as communication and teamwork.

In international businesses, a team may comprise of members from different offices and even different countries. Employees must be able to communicate easily to complete tasks and projects efficiently to benefit the company and its clients.

Employers will expect software engineers to handle pressure caused by time constraints and a demanding workload. They will be expected to be self-motivated and to work to short deadlines, with problem solving being a key factor within the role. Challenges will arise on a daily basis and an employee with an inquisitive mind will be able to creatively think of a solution. It is likely that employees will often have to deal with code or software that they are not familiar with and they must be driven to proactively solve the issue.

Employers can identify a candidate with an enquiring mind by how proactive they have been about gaining experience outside of their studies. Most people use software every day and a lot of information is available on the internet. Potential candidates can practice their skills on the internet by using coding to make their own apps and websites. It is also useful to be aware of current industry trends. Anyone can easily find the opinions of the technology community online to stay up-to-date.

**Potential to progress**

Once a candidate has successfully joined a company they have many opportunities to progress. Employees can progress within a company either in their own department or they can move to a new department if they find they are more skilled in a different area. Renishaw encourages employees, including apprentices and graduates, to gain experience in many of its departments; from additive manufacturing to medical and neurological software, allowing them to take full control of their career path and decide in which area they wish to progress.

Connor Goddard, who is currently part of the graduate scheme at Renishaw, has partaken in multiple schemes at Renishaw. He joined the company during an industrial placement and returned as a graduate. Graduates choose to apply to schemes at Renishaw as they have the opportunity to learn from both a business and a customer perspective by working closely with large projects where they are given the same responsibilities as other employees.

Providing different routes to enter the software engineering sector allows people the opportunity to study towards a qualification in a certain field while gaining experience in a business environment. This ultimately reduces the chances of candidates not being qualified as they can improve their chances of becoming employed by learning multiple roles through a scheme, rather than applying for one position with a CV.

A recent report from [Engineering UK](http://www.engineeringuk.com/Research/At-a-glance-2016/) states that 65 per cent of engineering and technology graduates were in full-time employment within six months of graduating. This demonstrates the successful investment in future engineers from companies like Renishaw to help candidates become 100 per cent qualified for any job in the sector.

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Notes to editors

UK-based Renishaw is a world leading engineering technologies company, supplying products used for applications as diverse as jet engine and wind turbine manufacture, through to dentistry and brain surgery. It has over 4,000 employees located in the 35 countries where it has wholly owned subsidiary operations.

For the year ended June 2016 Renishaw recorded sales of £436.6 million of which 95% was due to exports. The company’s largest markets are China, the USA, Japan and Germany.

Throughout its history Renishaw has made a significant commitment to research and development, with historically between 14 and 18% of annual sales invested in R&D and engineering. The majority of this R&D and manufacturing of the company’s products is carried out in the UK.

The Company’s success has been recognised with numerous international awards, including eighteen Queen’s Awards recognising achievements in technology, export and innovation.

Renishaw is listed on the London Stock Exchange (LSE:RSW) where it is a constituent of the FTSE 250, with a current valuation of around £1.8 billion.

Further information at [www.renishaw.com](http://www.renishaw.com)