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ALWAYS CREATING: Software engineer Mohamed Siddeeq Mansura enjoys seeing a project come together. *Picture: NASHAD SOEKER*

Numbers and passion do the digital talking

How to become a software engineer:

You must be keen on mathematics and science, and pay close attention to detail. You must be self-motivated and willing to learn continually, and keep up to date with current and future technology. The ability to work in a team as well as independently is important, and you must have an interest and understanding of the business side of the projects you are working on. You must also be target-driven and have strong leadership skills.

Qualifications needed? You need a BSc, BSc Honours or MSc Electrical, Mechatronics or Computer Science, and to meet university-entrance criteria, you will need a matric pass with pure mathematics and physics.

Where to train? Universities offer engineering degrees.

Tellumat offers an internship programme, and is committed to creating opportunities for previously disadvantaged candidates who have completed their qualifications in mechatronics, electrical or computer science on the lookout for workplace training, or who have had to pause their studies and could not complete their degrees.

Tellumat supports young people to complete their postgraduate degrees, and offers educational assistance based on certain criteria and management's discretion.

Expected earnings? You can expect to earn from about R200 000 to R960 000 a year, depending on qualifications and experience.

Contact: Aasiyah Adams is on 021 710 2871 or aadams@tellumat.com or www.tellumat.com

Real jobs, real people

- **Today:** Mohamed Siddeeq Mansura
- **Job:** Software engineer
- **Qualification:** BSc Engineering (Mechatronics)
- **Place of work:** Tellumat

By Sarah-Jane Bosch

Every Monday Sarah-Jane Bosch interviews real people at work in Cape Town.

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Builder in the software realm

What does your job entail? Software engineers are licensed professional engineers, schooled and skilled in the application of engineering discipline to the creation of software. Software engineering is often confused with programming, but the two are very different disciplines.

Programmers create the codes that make programs run, whereas software engineers create the designs the programmers implement. As with engineers in other fields such as mechanical, civil and electrical, software engineers are also held accountable to a specific code of ethics.

As a software engineer in a firm that specialises in progressive technology products, custom solutions and services in the telecommunications, defence, transport and energy industries, I am involved in a lot of programming and software development. The main programming languages we use are C and C#, and clients include organisations involved in air-traffic management, defence and security.

Describe your average work day: The day starts off with early morning coffee and plenty of coding. In general, there are always bugs in the code, and numerous programming problems to locate in the code and fix, so a lot of my time is spent fixing bugs and programming problems. Other regular tasks include testing software programs on a real-time simulator to make sure everything works as expected, and that the code can be qualified for use and is of a high standard.

Best part of the job? The project I am currently working on has many different components to it, and the best part of the job is watching all the different components come together, resulting in a final complete product.

Worst part of the job? The worst part for me, by far, is the documentation. However, it is an essential part of the process – especially when it comes to the further developing and maintaining of software.

Why did you choose this career? The main reason for choosing this path is my absolute love of mathematics, physics and problem-solving. Consequently, choosing a degree in engineering, specifically mechatronics, was something that really appealed to me. Mechatronics is a combination of mechanical, electronic and software engineering used in many engineering fields including robotics – and mechatronics just sounds really cool.

What else would you have liked to do? I just love anything mathematical, so I think if engineering hadn't worked out, I would have chosen something else in that field, for instance, research in number theory or cryptography.

Are you paid enough? I have just been hired to the post of full-time engineer, and I am very satisfied with my salary. With experience, I look forward to this being increased over time.

Rate your work stress on a scale of 1 to 10? Around 4 – my stress level is relatively low. I believe that a major part of managing stress is finding balance, so I exercise regularly and take time off when needed.

Travel opportunities? So far, I have had one opportunity to travel to visit a client in Riyadh, Saudi Arabia. It was my first overseas trip, and it was a wonderful experience.