UK Electronics Skills Foundation

Nishika Chettry

About me

I am a **Firmware Engineer** at **Renesas Electronics**, specialising in secure firmware development for advanced microprocessors used in industrial and AI applications. I hold an MEng(Hons) degree in Electronic Engineering and Computer Science. As a passionate STEM Ambassador, I have inspired and empowered thousands of young people to pursue careers in STEM.

My inspiration

I was drawn to Space and Robotics from a very young age. As a child, I dreamed of becoming an astronaut, and as I grew older, that dream gradually evolved into an aspiration to become a robotics engineer. Curious about the path to that goal, one day I decided to google what the top robotics engineers in the world studied, and I noticed that they all had a degree in Electronics. Therefore, I chose to study Electronics. My degree in Electronics and Computer Science was a perfect fit for me, as **it brings together 3 of my favourite subjects, Physics, Maths, and Coding.**

My strengths

My strengths are coding and communication.

I have been passionate about coding since year 10. I love the logical reasoning and problem solving aspects of coding. Over the years, I have worked with a wide range of programming languages, including Java, Python, HTML, CSS, JavaScript, YAML, Shell scripting, C, and even Assembly!

Fascinating tech

I am truly fascinated by the way **technology can be used to create meaningful impact for everyone on this planet**. In recent years, the rapid advancement of robotics for socially and environmentally beneficial applications has been really inspiring for me. I have seen startups develop robots that clean water bodies, helping combat plastic pollution and create healthier ecosystems for aquatic life.

During my final year at university, I built a prototype of a smart bin that automatically segregates waste. Through this project, I learnt about organisations and companies that use robotics and mechatronics to improve waste management—both at the source, through automated sorting bins, and at the final stage in recycling centres.

I am also intrigued by emerging areas such as soft robotics and their potential applications in space exploration, as well as the use of robotics in disaster response and evacuation, where robots can reduce risk and save human lives.

These developments truly reinforce my belief that technology can be used to solve some of the world's biggest challenges!

What excites me about the future

Electronics is the backbone of technology, and it is really exciting to see how it is **driving progress in fields such as AI, robotics, space exploration and renewable energy**.

Semiconductor chips are becoming smaller, faster and more power efficient enabling smarter sensors, better response time, improved decision making in human computer interaction systems, and more portable technologies. While energy efficient electronics systems provide more sustainable solutions, advances in performance and reliability allow complex systems to operate safely.

I am also excited by the potential of electronics in enabling the emerging field of quantum computing. Problems that are currently impossible for our computers to solve, might be possible in the near future, with applications such as advanced cryptography. This is of particular interest to me as I work on secure firmware and cryptography plays a critical role in firmware security. I am quite keen to help contribute to the development of these technologies.

Nishika Chettry, Firmware Engineer, Renesas Electronics

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My aspirations

My aspiration is to **lead the development of technologies that make a meaningful impact on people's lives**. I want to use technology to address global challenges, such as combating climate change, and to contribute to the exploration of space. **I still hold onto my childhood dream of becoming an astronaut**, and I may even pursue that path someday.

In addition to technological impact, I am **passionate about fostering a diverse and inclusive engineering workforce** and making technology accessible to everyone. I believe that creating opportunities for people from all backgrounds to participate in shaping the future of technology is just as important as the innovations themselves.

My strengths...

Communication is a relatively new strength and passion for me. I was once a timid and quiet little girl who never imagined that communication could become one of my strongest skills. However, when I decided that I wanted to achieve something meaningful, I deliberately pushed myself beyond my comfort zone. I began volunteering for speaking opportunities and sharing my story with others—an effort that eventually led to an invitation to appear as a guest on BBC Radio!

My advice to anyone who is considering studying Electronics or who wants to become a Firmware engineer is to learn to code, learn prompt engineering, push beyond your comfort zone, and always be true to yourself.

Even if coding is not your primary job, learning to code helps develop problem solving skills, which are essential in any technical role.

AI is not going to take our jobs, however, we can use AI to be better at our jobs. Therefore, learn to write effective prompts and develop your prompt engineering skills. This is something I practice myself!

Push yourself beyond your comfort zone as long as the end goal is something you truly wish to pursue. You will often surprise yourself!

There might be hurdles along the way but if you know that you are being true to yourself by doing something you are passionate about then you will find the resilience to overcome them.