

“Why I want to be a professional engineer”

Arkesh Patel

When I was five I'd made up my mind – I was going to be a fireman. But then by eight years of age I wanted to be a news journalist, by the age of ten a heart surgeon, and when I found out the ridiculous amount my parents paid for my braces even the thought of becoming an orthodontist crossed my mind. In other words I didn't grow up knowing I wanted to be an engineer, instead spending many years exploring my options to ensure that my chosen career was the right one. As a result I am now completely confident that there is only one career for me – engineering. Not only am I certain I want to pursue engineering, but I can hardly wait to enter the workforce as an engineer and help tackle the problems that the 21st century will no doubt throw at us. It's this level of passion and excitement – this level of eagerness that I've been waiting for, before I fixed myself on a definite career path. ¹⁷²

If truth be told, my decision to pursue engineering wasn't exactly easy. I was worried by the preconceived notion that physics and calculus completely dominate engineering, and that I would have to forsake all creativity on entering the profession. But over the past few years I've come to learn that engineering not only allows for creativity - it desperately calls for innovation. Last year I attended the University of Auckland Engineering Department's 'Year 4 Exhibition Day' and I was absolutely amazed by the level of imagination inherent in all of the student projects. The balance of innovative and imaginative thinking in the design component of engineering, tied together with the logic and precision of mathematics and science is something that engineering straddles perfectly. It's a combination which makes a truly profound and positive impact on society. ¹³⁰

$$\begin{array}{r} 306 \\ 175 \times 1768 \\ \hline = 1069 \end{array}$$

Despite my initial apprehensions though, my interests and abilities always seemed to point strongly towards engineering. My instinctive curiosity has always compelled me to find out how everything around me works, moves, lights up, heats up and so on. In addition, I've always had a great passion for the challenges of problem solving, 'Future Problem Solving' being the best part of my week at primary school. On a more fundamental level, I believe that engineering will allow me to channel my interests and strengths in mathematics, physics, and science in general into a professional career. But that's not to say engineering is all about crunching numbers or churning out hundreds of sheets full of mathematical equations – it's an applied discipline, involving vital communication skills, teamwork, and ultimately decisions on how to solve 'real-world' problems. I've always loved a good challenge, and I believe engineering problems offer the most exciting and mind-bending challenges. Engineers are faced with problems that have no simple solution, often requiring a multi-disciplinary approach – much different to finding the solution to a mathematical equation on paper. Perhaps this is what sealed the deal for me in terms of wanting to become an engineer, as this year I was lucky enough to attend both a national and international science forum, both of which widened my view of this 'applied focus' of engineering in society.

Earlier this year I attended the Rotary Science and Technology Forum, and it was the final day of the forum which I found most fascinating, when we experienced our last rotation – robotics. It was a field of technology that I had never considered, sounding far too geeky and science fiction for me to seriously consider as an actual career. But the mere task of building an amateur robot using simple logic gates and guiding it through a maze (with the help of a few pushes along the way) was enough to get me thinking. At the end of the forum I was extremely fortunate to be awarded a science award to represent NZ at the London International Youth Science Forum – this year's theme being 'Engineering the Future.' Visiting Oxford and Cambridge Universities, as well as UCL and Imperial College in London, I got to see first hand some of the most cutting edge developments in science and technology, and in

particular, areas such as electronics, artificial intelligence and robotics. With a 26 hour flight back to gather my thoughts, my head was filled with all the different aspects of society that robotics could help with, for example travel and transport, food technology, surgery, pharmaceuticals, space missions - the list being endless. And although my thoughts seemed to fly past like some sci-fi flick, from what I had just seen and experienced at both science forums it didn't seem far-fetched at all. The field of robotics is indeed evolving rapidly as the barrier between man and machine slowly fades away. But the underlying fact is, I don't want to merely think of different ways robotics could help us, or simply dream up different solutions - I want to bring these ideas into reality. I believe a career as an engineer will certainly allow me to do this.

In the 21st century, technology is developing at a phenomenal rate and the possibilities offered in computer systems and electrical engineering are endless. What's more is that engineering is a dynamic career - you're forced to constantly think outside the square and keep up with the latest advancements in technology. It's remarkable to look back in time and see how far we've come - from communicating by morse code to making video calls, from record players to portable iPods, and even from open fire cooking to temperature controlled ovens. But it's even more exciting to look forward to the future, and with our great sense of kiwi ingenuity there will no doubt be more clever solutions and inventions popping up in the years ahead. As a budding engineer, I strongly wish to be a part of all these advancements.

To help better society's quality of life and at the same time do something you're truly passionate about - really, what more could you ask for? With hard work, dedication and perseverance, I truly believe a career in engineering will allow me to realise my greatest potential.