

## WHY I WANT TO BE A PROFESSIONAL ENGINEER.

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I walked to and from school every day for 10 years. During these forty minutes a day, my mind was constantly abuzz with thoughts – one of which was how tired I was. While lamenting my sore little legs, I imagined how wonderful it would be if I had a couch that flew me home. This couch would have a shelter against sun and rain, cup holders on the sides for cooling drinks, and it would cast an illusion to the eyes of passers-by, making it seem like I was still walking.

In my year 6 class, I invented a robotic butler with wheels, mechanical arms that swept the ground and vacuumed, had a drink dispenser, inbuilt microwave, and was covered in function buttons. In year 10, we were assigned a similar task. By now I had received far more scientific education and could harness my knowledge practically. My final hovercraft hovered on the basis of 'like poles repel': a huge magnet on the bottom of a passenger capsule used the earth's magnetic field to repel itself above the ground, and crossing the equator required a simple flip of the magnet.

In retrospect, it is interesting that my inventions increased in scientific nature and feasibility; plus it appears I was preparing for this career long before I was consciously aware, long before I'd even heard of the term 'engineer'.

My life is a palimpsest: layer upon layer of education, experiences, influences. To choose a direction while still at high school, I had to extract the essence of my passions and interests, comprehend the essence of this palimpsest, and match it with something out there in the world. My unique school subject combination this year spanned four faculties (English, Chemistry, Physics, Calculus, German), providing a year of excitement, challenges and in-depth discussions often beyond the curriculum. I found myself greedily snatching at these moments, devouring what extra material I could learn, and relishing the freedom and satisfaction that comes from understanding. I developed a habit of continually asking questions, especially in chemistry and physics, even when it was unnecessary for the unit. Such was the result of an addiction to learning and understanding; only the thought of possibly being late for my next class could momentarily stopper the flow.

The race to pick a career and know one's life direction was on. Health Sciences leading into Medicine was the generic direction amongst peers with similar academic achievements, interests and subjects, and while I too wanted to 'benefit mankind' – making medicine the obvious choice – to work in the tertiary sector seemed to leave little room for research extravagance. I didn't want to be the one providing the cancer treatment or necessarily the one making it – I wanted to be the one discovering what would work, how and why.

Meanwhile, 'Engineering' is a term associated almost stereotypically with the classical fields, namely mechanical, electrical and civil. Widely conceived as being a 'masculine' career, it appears dominated by the designing and creating of such things as engines, bridges and roads, something typically 'boring' for females. Indeed it was because of these predisposed connotations that I refused to even explore, let alone consider, a career in engineering.

I then stumbled upon Biomedical Engineering while ransacking the school careers' office and scouring the internet. Upon reading a description of the specialisation, a sense of realisation and finality struck me quite momentarily. Biomedical Engineering is pioneering 'behind the scenes' on the medicine-engineering border, and advancement in even one of its wide range of subdivisions directly improves lives. It is analytical and practical, involves in-depth understanding and reasoning, and there are no boundaries.

That it is a relatively new specialisation exemplifies it as one of the most vastly expanding and growingly significant scientific fields of the 21st Century. Being a biomedical engineer would hence mean working in cutting edge research and development, and making revolutionary advancements, to directly and positively impact humanity. To apply well-taught physical and mathematical theory to creative, biological practice, thereby improving the quality of life, is just extraordinary. Moreover it is only recently, through learning about Biomedical Engineering, that my eyes were suddenly opened to the ubiquitous and invaluable existence of engineering in general in the modern world.

After an initial Bachelor of Engineering at Auckland University, I plan to study further towards Master of Engineering and PhD. During the past few years I developed a particular interest in the workings of the eye in connection with the brain. Ironically, it is my physical short-sightedness that spurred this particular interest in the combination of engineering with neuroscience and sight/blindness. I hope to work internationally, researching and developing neuro-prosthetics at one of the world's top biomedical institutions. The diversity and variety of skills an engineer needs will also allow my trilingualism to come into use.

I expect engineering to be comparable to the NZ Scholarship English exam. We are presented with questions or problems – multi-faceted and open ended – which we must answer or solve to the best of our ability. To do well, we must draw on every piece of literature ever encountered, and apply the necessary, relevant or bizarre, in refreshing ways, to open a new window to a solution. The 2009 Scholarship English exam was one of the most enjoyable I have ever sat; its uncanny similarities with the field of engineering made me certain that a career in the latter would be most exciting and fulfilling. Considering my insatiable desire to learn and discover, to work with revolutionary resources and people and to influence positively wherever I step, engineering is decidedly the best pathway to take.

I look forward to a future where I love my work. Engineering combines my passions into a discipline that matters, so is by far my best choice. Observing the products of past engineers is awe-inspiring; I too want to play a part in engineering's future legacy. As a professional engineer, the world would be my oyster; working at the forefront of the scientific world with the aid of world-class researchers and lecturers and innovative resources, I will make my own pearls. And while flying couches, robot butlers and hovercrafts are no longer urgent on my to-do list, the fire in me continues to burn with vision and ambition.

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