

## **Why I want to be a professional engineer.**

"The engineer has been, and is, a maker of history." Nothing has shaped our world, particularly in the last two centuries, more than engineering. The telephone, the automobile, the internet, the atomic bomb. It is impossible to imagine a world with them, impossible to say how much they have affected the way we live. I am fascinated by the accomplishments of the first engineers; Imhotep in Egypt, Archimedes' mechanical inventions, and the influence of ancient engineers even today. I want to be part of the industry that is driving human evolution in the modern day.

It has only really been a year since I decided engineering was the direction for me. Looking back, my parents probably should have seen the signs when I pointed out the hydraulics on the digger next door at age 4! I grew up constantly playing with Lego and K'nex, discovering a passion for invention and problem solving. I found myself in my element in a holiday programme working with Lego Technic and a primitive software control system, where the coordinator jokingly asserted I should be at university by the age of ten. I found using computers to control my creations immensely fulfilling, but the programming appealed to me the most. Until a few years ago thought my interests would lead me into computer science.

My programming skills continued to grow, culminating in my successes in the national BrightSparks technology competition in years 8 and 9. Both years I programmed computer games ('Demos' really, as my ideas frequently exceeded my ability to realise them) winning the junior section in 2003 and achieving highly commended in 2004. Through this time I was entirely self-taught, and discovered the excitement of learning through experimentation. I have continued to dabble in programming since, but school and sporting commitments have made another major project not possible.

In my senior years at Taradale High I've discovered a passion for calculus and physics. Some of it is to do with being able to explain and learn more about the physical world, but really it's the complex problem solving that gives me a real thrill. Studying these subjects, along with chemistry, statistics and economics at scholarship level in 2008 has been fascinating, particularly coming up with creative solutions to some very challenging problems. I see engineering as a practical extension of the creativity and problem solving skills I am developing this year.

This passion extends to a simple passion for learning, something which I have been rewarded for through my academic successes, in maths and science. Because of this I have almost no doubt I will continue studying engineering towards postgraduate qualifications. My commitment to study was demonstrated in 2008 when I studied Level 3 calculus for the first time while also studying mathematics at a tertiary level with the University of Auckland, where I actually finished top of my class. Since Year 11 I have been first in mathematics, science and economics at my school and have performed well in various academic competitions, resulting in me being awarded Dux of Taradale High School. I will continue my strong work ethic and make the most of my abilities when I head to university in February.

I've always been fascinated with how things work, with what is going on behind the scenes. My parents talk of how I often used to demand in-depth descriptions of how things worked before I went to sleep when I was young. Reams of paper were dedicated to designing all manner of devices to automate my various tasks around the house. My interest in engineering is very much based on a childish thrill of inventing the impossible and bringing dreams to life. This may sound naïve, but dreams (and a huge amount of hard work) have resulted in so many technologies we take for granted today.

My experiences so far make me keen to pursue a degree and career in mechatronics, ideally working in robotics and automation. Obviously I would like my future career to pay well but more exciting to me is the possibility of working at the cutting edge of technology. Studying mechatronics opens up a vast range of career options which are only growing; who, forty years ago, would have guessed that computers would now be in virtually all mechanical devices from cars to elevators? Consumers now demand smart technologies across all industries, requiring automation, control and the ability to integrate the two into a mechanical solution.

I plan to study towards a Bachelor of Engineering at Canterbury University this year, and will supplement it with a Bachelor of Science majoring in mathematics and economics. Apart from my strong interest in these subjects, I believe extended study in both areas will benefit me in my future career as an engineer, particularly in the edge it will give me should I chose to start my own company. A fact easily overlooked by a budding engineer dreaming of building himself his own C-3PO is that solutions must be marketable and demanded by consumers, hence the importance of economics to the profession. I have chosen to study with the University of Canterbury based on the university's reputation, campus and lifestyle which I experienced first hand when I travelled to Christchurch in the September holidays.

Engineers have an immeasurable effect on the world around us, an influence which is rapidly heading beyond our Earth. American cartoonist Scott Adams said "Engineers like to solve problems. If there are no problems handily available, they will create their own problems." This probably tongue-in-cheek statement nevertheless perfectly describes me. My thirst for challenging problems to solve has lead me to want to become an engineer, and I cant wait to begin studying. I believe that I am deserving of the opportunity this scholarship would give me, and that I would have a lot to give back to the institute in the future.