



# national science week 2012

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Planes, trains, engines, buildings, roads and cars are some of the many things that are designed by engineers. How cool is that?

From a young age I wanted to be an engineer. I liked planes, and wanted to design them. Fast-forward about 15 years, and I am an engineer. I didn't end up designing planes or roads or cars but I am trying to help make functional prosthetic arms more accessible to the people who need them.

So how did I get here? Well after college, where I discovered that I loved physics, I enrolled in a Bachelor of Engineering degree at the University of Tasmania in the Mechatronics area. As part of the degree, I undertook work experience in the engineering industry and was lucky enough to do my work experience at the Cadbury's chocolate

factory in Claremont. This was a great example of what can be achieved with engineering. After graduation, I started my Master of Engineering Science degree and that is where my current research interest began.

So what exactly do I do? Well, let's look at a common problem in society: not everyone has two functioning arms. For those that don't, one of the options available is to use a prosthetic arm; however these are not perfect, and good ones can be expensive. My research has been looking at how to capture biological motion, and program that motion into a prosthetic arm controller.

To undertake this research I had to design and construct a mirror system that could take three dimensional





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images with a single camera, work out how to modify a prosthetic arm to enable computer control, design wearable markers which could be tracked by the camera and create a computer program to track the markers. This tracking information was then used to program the prosthetic arm to allow it to perform the desired actions.

An engineering degree is a gateway to many exciting careers.

**For more information:** [www.utas.edu.au/engineering/home](http://www.utas.edu.au/engineering/home);  
[www.engineersaustralia.org.au](http://www.engineersaustralia.org.au); [www.engineeryourcareer.org.au](http://www.engineeryourcareer.org.au)

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