Research
Dr Casey Chow, University of Wollongong lecturer in Multimedia and Game Development, is researching the way humans interact with computers - such as in the instance of virtual reality.

My research passion lies in the related areas of computer graphics, virtual reality, games technology and human-computer interaction. Computer graphics technology has been revolutionised by the burgeoning multi-million dollar gaming industry. The demand for better and faster graphics systems by consumers, in particular gaming enthusiasts, has brought about rapid advancements in the field of graphics technology.

It is well recognised that this technology has the capacity to change the world and the way we do things. Already applications like multi-user virtual environments - a good example being multiplayer online games - are changing the way in which people interact and socialise on a day-to-day basis, at a global level. This has in turn opened up many exciting opportunities, in particular, in the field of virtual reality including gaming, medical imaging and visualisation.

My research addresses the visual aspect of immersive head-mounted display virtual reality. The fundamental goal of immersive virtual reality is to present the user with an illusion of reality within a computer-generated and controlled virtual environment.

In such systems, head-tracking is required to obtain the user’s head position and orientation so that the graphics system can present the user with updated images from their current viewpoint.

The dream of displaying realistic environments where the user cannot tell the difference between the real world and the virtual one has been around for ages, but has yet to become a reality.

A common question that I have been asked is whether this line of research is still necessary given the recent advances in computer graphics algorithms, graphics cards and games technology. My answer to that is, “Of course!” We are constantly trying to find faster and more realistic ways of generating computer graphics. This is precisely the reason why graphics card developers launch new and better products approximately every six months. High-quality computer graphics techniques, the kind used to generate movie-quality images, can produce extremely realistic environments.

However, these graphics techniques are intensive and the creation of each frame is extremely time consuming. This problem escalates with the complexity of objects that are used in the virtual environment. This is because systems such as virtual reality and gaming systems are designed to be used by humans. It is therefore essential that such systems be designed with the user in mind.

This requires knowledge of how humans might perceive, respond or react. My interest in this area stems from my research of how humans might react to images produced in real-time interactive global illumination solutions for virtual reality. To investigate real-time interactive global illumination solutions for virtual reality, to infinity and beyond.

Feedback
I reply to the article by Dr Mark (Ed September 4) regarding the bill of rights.

Looking back, we seem to have done alright without a bill of rights. Now we have Dr Mark Fox, telling us what we need.

He states, “anti-terrorism measures limit freedom”. These measures certainly limit the freedom of thought by potential terrorists, which maybe is at odds with Dr Fox’s idea of freedom.

Perhaps he could tell us what difference a bill of rights will make if we have a terrorist attack.

TOM ATHERTON, FIGTREE.

Noticeboard
Saturday

 notify Saturday
Valley Song, by the Merrigong Theatre Company, School students $13, PAC, 4226 3366, 4226 3366.
Thursday
University of Wollongong band competition finals, Unilbar, 7.30pm.
Tickets $8/$5 from Uni Shop and Redback Music.
Saturday
Cool Day Out climate-change trade expo, Smith’s Hill High School, 9.30am-5pm, www.coolayout.net
FREEBIES
Wednesday
Entertainment presented by WUSA, university dock pond lawn, 12.30pm.
EXHIBITIONS
Until Sunday
TAFE Staff Show 2007, photography, painting, drawing, design, printmaking and sculpture. All TAFE teachers are practising artists. Project Contemporary Artspace, Keira St, Wollongong, 11am-5pm Monday-Saturday, 11am-4pm Sunday.
Saturday
Y-Curate "Beachcomber" by Michael Nay is part of the Project Contemporary Artspace.
City Gallery’s permanent collection curated by students from Smith’s Hill and Warilla high schools.
MOVIES
Today, tomorrow
This is England, Gala Cinema, Warrawong, 12.30pm, 2.30pm, 9.15pm.
Tonight
Knocked Up, Unil Movies, 7.30pm, Unihall, 35.
COMING UP
Book now for Wollongong City Gallery’s school holiday art workshops program, ages 5-12, October 2-12. Inquiries: 4228 7500. Noticeboard deadline is Friday.
www.tigs.nsw.edu.au

Q&A
Will it save the world? I wouldn’t say save the world, but computer graphics and virtual reality technology has, and will, certainly change the world.
Years spent trying: Three years.
Are you getting anywhere? Yes, research into one area often opens up other research possibilities.
Best part of your research? Getting to play with cool graphics and interaction devices.
Funniest moment: During an open day exhibition, a kid enjoyed the virtual reality display so much that he refused to take off the head-mounted display device.
Ugliest moment: When a participant in a research study dropped a $20K piece of equipment!

Have you had a true “Eureka! I’ve found it!” experience? Yes ... until further investigation revealed that other researchers had already attempted similar ideas, albeit in different ways.
Has it made you rich? In terms of knowledge, yes.
What did you want to be when you were a kid? Like most kids, I was fascinated with games and graphics. I guess I’m still a kid.
Has your career followed a straight line? No.
What would you change? Nothing. We learn through our experiences, whether good or bad.
Advice for young researchers: Find a research area that you will enjoy. Otherwise, enjoy the research area that you get into.

"I wanted to tell parents just how special TIGS is, but was lost for words...

It is easy to write about outstanding academic results. The School’s commitment to the promotion of the values and traditions of the Christian faith, and the wonderful supportive and caring environment in which students learn.

The best way I can explain the TIGS experience is that there is a special synergy that brings all the worthy dimensions of our school together and delivers an experience that is far more than the sum of each part.

Perhaps it is not possible to capture in words. What makes TIGS such a special place – it is something that has to be experienced to be understood.”

Stephen Kinsella, Headmaster.

TIGS
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Beachcomber by Michael Nay is part of the TAFE Staff Show at Project Contemporary Artspace.

"I wanted to tell parents just how special TIGS is, but was lost for words..."