game on for augmented reality

The next leap in computer technology may make sitting around playing onscreen games a thing of the past.

Using a gun with simulated recoil, you will be able to destroy the bloodthirsty aliens in a new game produced by students from the Wearable Computers lab at UniSA's School of Computer and Information Science.

Researchers Wayne Piekarski and Ben Close took the already existing First Person Action Game Quake and altered it to develop the ARQuake system. The system is one of the first in the world that allows users to play augmented reality games outdoors. The player is able to move around in the physical world while experiencing computer-generated graphical monsters and other objects.

"In ARQuake we take the monsters out of the Quake game and allow them and the players to roam around a real environment. This means players can sneak up on digitised monsters hiding behind real buildings" Piekarski said.

This augmented reality process involves overlaying and aligning computer-generated graphics and images onto a real-world view and allows users to have ‘X-ray vision’, allowing the player to see objects not visible in the real world.

In developing ARQuake, students, started by mapping Mawson Lakes campus, building a Quake environment out of it and adding the digitised monsters (as seen in the adjacent images). The software has been set up so that when the players move in the real world, the Quake world moves as well, keeping the two aligned.

To play the game, participants wear a transparent head mounted display that combines the computer-generated images with the player’s real-world view. This display is combined with a wearable computer equipped with a specially modified version of Quake, a digital compass, GPS satellite position tracking, and a custom made plastic gun.

ARQuake developers Ben Close, Wayne Piekarski and Prof. Bruce Thomas (centre).
“allow players to control the computer while moving around in the real world.”

You can blame the computer-geek image, a lack of female role models or gender stereotypes, but whatever the combination of reasons there is no denying that women are dramatically underrepresented in the IT industry.

In Australia women make up only 20 per cent of the IT workforce, behind other countries including Germany (40 per cent), Brazil (37 per cent), Italy (30 per cent) and the US (29 percent.) And that imbalance is set to increase in future, with women making up less than 20 per cent of IT students nationally.

This under representation has not gone unnoticed by UniSA’s School of Computer and Information Science, each year the School awards a scholarship to help support a woman through one of its programs.

Named after Ada Byron Lady Lovelace – who displayed remarkable foresight in the 1840s when she designed a plan for what is now regarded as the first computer program, the Ada scholarship was this year awarded to Kelly Rivett.

Kelly was the only Year 12 IT student at Lucindale Area School last year, and after blitzing her exams (earning a TER of 94, including a 19 for IT) she is now enrolled in a Bachelor of Computer and Information Science/Bachelor of Arts (Multimedia) double degree program at UniSA.

She sees that IT is a male-dominated area but refuses to let that get in the way of her goals. “I’ve always been one to try and show them up – whether it’s on the sporting field or on the computer – so the fact that there are more men in IT is not going to stop me.”

If change is going to occur, it’s going to take a lot more women like Kelly to change the culture from within.

Head of the Computer and Information Science, Prof. Andy Koronios says that women are well-suited to IT, possessing a host of desirable qualities including people skills, an ability to work collaboratively, organisational and negotiation skills and strong aesthetic instincts.

“The problem is that we have a situation where women need to change the IT culture from within the workplace – but we need more women in order to do this and we cannot get enough using the current approaches, so it means we need to work harder to break the cycle.”

The scholarships offered to females commencing study in IT is just the first step.
UniSA scholarships

Thinking about university studies but unsure how you will finance it? UniSA is committed to recognising academic excellence of prospective students by offering scholarships to assist financing your studies.

What criteria are the scholarships awarded on?
The criteria for the scholarship will vary depending on the objective of the scholarship sponsors. Criteria can be on one or more of the following: academic merit, equitable access to university studies, or geographic location.

Computing Scholarships available at UniSA
The following Scholarships are available for students who enrol in a degree program related to computing and IT at UniSA.
> The School of Computer and Information Science Scholarships
> Ada Computer Science Scholarship for Gifted Women

Community Scholarships
> City of West Torrens and Max and Betty Mendelson Foundation Scholarship
> HomeStart Finance Transition Grant
> OneSteel Scholarship
> Trevor Prescott Memorial Scholarship
> UniSA transition grants

What is the value of the Scholarships?
The value of the scholarship will depend on the nature of the scholarship. Transition grants offer a one-off payment to assist the student with the transition into university. Community Scholarships will vary from one-off to annual payments.

UniSA School of Computer and Information Science scholarships provides the recipient with an annual cash payment ranging between $1500-2000 based on academic performance for the duration of the degree.

The Ada Computer Science Scholarship for Gifted Women covers the recipients HECS fees for the duration of the degree in addition to an annual cash payment of $1500.

What should I do next?
Visit the UniSA website www.unisa.edu.au/studies/scholarships/default.asp to find out about scholarship application process, closing dates and contact details.

"we don't play on the computer when we get home"

information systems – what you didn’t know

1. most of us speak plain English
2. we don't understand techno-babble but we know that 'Java' isn't just an expensive coffee and we know that 'Spam' isn't just a can of meat.
3. we don't play on the computer when we get home
4. we don't wear flash drives around our necks
5. we don't all frequent LAN parties
6. we're all socialites and we love being around people not computers
7. we meet people in cafés and pubs not in chat rooms
8. the gender balance is evenly spread
9. we understand that in business, people use computers not programmers
10. we are well-rounded – we have an understanding of computers and technology but we also know about business

MACS club

Clubs and associations are a great way for students who share similar interest or enjoy spending time doing similar activities.

At UniSA there are over 60 different clubs and associations that are run by students for students. One of these is the Magill Association for Computer Students MACS.

Based at Magill members comprise of students currently undertaking degrees in computing, multimedia and communication. Each year MACS organises activities for its members such as free BBQ, parties and movie screening nights.

MACS also look after their members by showcasing students multimedia work on their webpage.

Being part of a club or association is a great way to increase your social network and gain more enjoyment out of your time at UniSA.
speed read your future

If you've ever thought that the ability to read your school textbooks at rocket speed could blast off your career or study prospects, then maybe UniSA graduate Simon Ronald can help launch you on your way. His Rocket Reader speed reading software is helping all sorts of people overcome information overload. Statistics show that our generation receives more printed information in one day than our great-grandparents did in a lifetime and Simon's software is here to help process this information overload.

After completing a double degree in Digital Systems and Computer Engineering in Melbourne, Simon went on to pursue PhD in Computer Science (Artificial Intelligence) at the University of South Australia which he completed in 1996. Simon's interest in speed reading combined with his knowledge of software engineering lead him to writing the original Rocket Reader software program back in 1996 which he sold on the web. Back then selling products was not as common as it is these days, fortunately the program sold and is now in its seventh version.

The program took common elements of speed reading techniques along with some newly developed ones to increase reading speed to 500 - 800 words a minute with good comprehension. That means you could read this article twice in one minute and retain the information contained here.

With over 1 million hits on the website last year, Rocket Reader is the number one speed reading website.

Simon's success is further demonstrated by export sales across the globe to countries such as Canada, Japan, Europe, UK, USA and Australia.

The secret to Simon's success is his ability to apply software development to a non-traditional area.

At the School of Computer and Information Science we aim to expose students to a wide range of application for computing to prepare them for success out in the industry.

profile: business analyst

A career in Information Technology provides and exciting, challenging job with a huge range of options.

"An IT career may not mean working in the Information and Communication Technology (ICT) industry itself, because IT is used by all business, government and schools, and the choice of industry to work in is as large as the economy itself!"

(ACS quoted on the gradlink website www.gradlink.edu.au/connet/viewfull/238)

One possible IT career path is a Business Analyst.

Business Analysts review, analyse and evaluate the overall business information needs of an organisation, in order to develop solutions to business related technology problems.

The role also encompasses strategic business research and analysis in developing business plans and market research to support of an organisation's future directions.

IT Business Analysts are employed in almost all industries, especially computer services, government administration and telecommunication services.

A Business Analyst must be able to analyse and implement business, user and technical requirements. They need knowledge of web-based technologies, business systems strategies and technical consulting terms and processes.

They must also document results from research analysis and understand business process review.

Further information

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