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DESIGN COMPUTING

Computer games spark a bright idea



Mitchell Page got the idea for a new high-tech basketball jersey while playing computer games.

By Claudia Liu and Kath Kenny

Twenty-two year old Sydney student Mitchell Page has earned an honours degree in design computing – and attracted worldwide interest – after designing a high-tech basketball jersey.

The *Sydney Morning Herald*, *ESPN* magazine, *New Scientist*, and *USA Today* websites have all featured his innovative jerseys that light up to display players' points, fouls and other game information.

The jerseys are fitted with flexible display panels that are linked by electricity-carrying cotton threads to strap-on computers. Game information can be transferred to the jerseys in real-time, where panels on the side light up to indicate the number of points a player has scored. Panels on the chest can be programmed to light up when a pre-determined amount of time is left in a game, displays on the shoulders indicate a player's fouls, while back panels light up to show the winning side.

Early tests of the jerseys received positive responses from players, spectators, referees and coaches. "After wearing the prototypes, some players said they felt their game improved because they could sense what was happening straight away," he says, "and it helps spectators, especially those new to the sport, to understand what's going on."

"Some media commentators were worried about

the weight of the jersey, but actually it is very close to a normal T-shirt, and it is washable."

The first jersey cost around \$150 to produce, but Mitchell says the costs would be significantly reduced if they were produced commercially. He hopes the jerseys will interest major sports companies such as Nike.

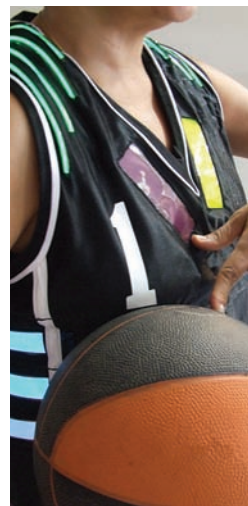
He came up with the idea while playing computer games, where icons of virtual players are linked on the screen to their scores. He also drew inspiration from the graphics used on screen in sports broadcasts.

Working with his supervisor Dr Andrew Vande Moere, Mitchell spent a year on the project – "almost 16 hours every day, on weekends, during holidays, and I still feel passionate about it," he says. His girlfriend and her mother also helped by sewing the jersey through various design stages.

Mitchell says the shirts could be used in other sports, and might also benefit players with hearing or mobility disabilities. He also sees potential for the technology to be used in other fields, such as orchestra conducting or debating, or in emergency services situations where teams often need to communicate in chaotic, noisy conditions.

Completing an honours degree has given Mitchell the opportunity to apply for a PhD scholarship, which he admits he never expected. "I was not the top student in my high school," he

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Mitchell Page's innovative basketball jerseys light up to display game information

CINEMA

The strange case of the University and the Pyjama Girl

In the 1930s, Sydney University played a part in one of the biggest murder mysteries of the decade.

The 'Pyjama Girl' murder investigation began after the discovery outside Albury of a woman's body. Dressed in silk pyjamas, the victim had been bashed and brutalised and her body partially burnt.

After failing to identify her, the police took the body to the University's Anderson Stuart Building where it was placed inside a zinc-lined formalin bath. For years she remained on public display in the hope that someone might come forward and identify her.

The story of the Pyjama Girl – including an extraordinary incident in which two filmmakers broke into the University to film the body – is told in a new Australian film, *Hunt Angels*.

Alec Morgan, the film's director and writer, explained: "Rupert Kathner and Alma Brooks, two filmmakers in the 1930s, needed to find a big news story they could sell world-wide. They found that story at the Sydney University Medical Faculty."

Kathner and Brooks made the first Australian true crime movie, recreating the murder and the dumping of the body. According to Morgan, Kathner and Brooks attempted to film the naked body of the Pyjama Girl and broke into the Anderson Stuart Building armed with their movie camera, a roll of film and a borrowed light.

"Unfortunately they only had one lighting bulb and that broke, so they mocked up the scene in a public bath house and Alma played the corpse," he said. The film, which included footage of the University, was released in Sydney cinemas in 1939.

Almost 70 years later, Morgan has retraced the steps of Kathner and Brooks in *Hunt Angels*, which stars Ben Mendelsohn as Kathner and Victoria Hill as Brooks. It is now on release, and like the 1939 original, features locations from the University.

As for the Pyjama Girl, she was identified in 1944 as Linda Agostini, and her husband confessed to her murder – although recent evidence uncovered by a Melbourne historian has cast doubt about the Pyjama Girl's true identity.

OVERSEAS STUDY

Research takes law student to the heart of Death Row



In the past 25 years Texas has built up a fearsome reputation as the execution capital of America.

Since 1982, 379 people have been executed by lethal injection in the state prison at Huntsville, and a similar number are currently on death row.

Sydney law student Anish Bhasin (pictured left) – an opponent of the death penalty – will travel to the University of Texas at Austin later this year to study how the system works at first hand. With the help of a Chancellor's Committee Exchange Scholarship worth \$3,000 he plans to study at the university's Capital Punishment Center, working with attorneys handling death penalty cases. They will be visiting clients in local jails, interviewing witnesses and helping prepare for trials.

"I've been involved in the NSW Council for Civil Liberties recently and I am personally opposed to the death penalty. With nine Australians overseas facing the death penalty, and six of those in Indonesia, capital punishment is topical in our region," he said.

At 26, and with an undergraduate degree in electrical engineering, a masters in international studies, and halfway through a graduate law degree, Anish hopes that his time in the USA will broaden his academic exposure.

"Many current legal topics such as terrorism are global issues. I want to study how other governments with different jurisdictions engage with these issues," he said.

Zhe Xu, a third-year aerospace engineering student, also won a Chancellor's Committee Exchange Scholarship which he will use to study for a semester at the University of Arizona.

"Aerospace engineering is a big industry in America. Researchers from Arizona University designed one of the cameras being used for the Mars probes," said the 20-year-old.

As well as learning about the research at Arizona, Zhe is keen to discover how the teaching styles compare with those at Sydney. "This is a unique opportunity for me to see how things work over there," he said.

A total of 79 international exchange scholarships were awarded this year on the basis of academic merit, which takes into account the cumulative annual average marks obtained by applicants.

Some faculties also offer their own scholarships, such as the Faculty of Arts with the Fare Enough Scheme, the Faculty of Economics and Business with Student Exchange Travel Scholarships and the Faculty of Science with Dean of Science Undergraduate Exchange Scholarships.

ARTS

Master of Gandhari sheds light on Buddhism

Sydney University has experts in an extraordinary range of academic fields. **Claudia Liu** met Dr Mark Allon, one of only a handful of scholars around the world who can interpret the ancient language of Gandhari.

Out of the turmoil of Afghanistan, hundreds of precious Buddhist manuscripts have come to the west.

The earliest of them, from the 1st century AD, are the oldest Buddhist manuscripts in existence. They are written in Gandhari, a Middle Indo-Aryan language derived from Sanskrit, which was used in ancient Gandhara, a region that corresponds to parts of modern-day Afghanistan and north-western Pakistan.

Dr Mark Allon (pictured right), a lecturer in the Department of Indian Subcontinental Studies, has been working on these "Dead Sea Scrolls of Buddhism" for nine years and is the first person to have read some of the texts since they were written.

"Before the discovery of these manuscripts, Gandhari was primarily known through coin legends and inscriptions which are highly formulaic and have a limited vocabulary," he said. "These manuscripts therefore substantially increase the corpus of documents in this language."

The bulk of them are now kept in three separate collections in Europe, including the British Library. "If they had not come into the west, these 'pagan' documents would most likely have been destroyed by the Taliban," said Dr Allon. "So we see our work as part of preserving the history and culture of this region and, just as importantly, of making these very significant documents available to the wider public, to the scholarly community and to the world of knowledge at large."

The Gandhari manuscripts are constructed of birch bark, which becomes brittle with age, or palm leaf. A large number are damaged



or fragmentary, and they are exceptionally difficult to read: there are no spaces between words and the spelling was never standardised. For example, the Sanskrit word dharma, meaning 'law' or 'teaching' may appear in Gandhari as dharma, darma, dhama, dhrama, or dhrarma.

"It takes a long time to reconstruct a manuscript," said Dr Allon, "and often I'm not able to make sense of the text at first." But with further research – perhaps looking for the same story in other languages such as Pali, Sanskrit, or Chinese – what was previously merely a string of letters suddenly becomes meaningful text.

"The Buddha died around 400 BC leaving

no written texts. Rather, his sermons and stories of his life, such as of his enlightenment gained under a Bodhi tree, were preserved in oral texts composed by his followers," said Dr Allon.

"Most Buddhist manuscripts are relatively recent, so the discovery of these very ancient manuscripts sheds new light on the transmission of the literature and on ancient Buddhism."

He describes his work as difficult but very rewarding. "The more difficult the problem, the more exciting the result. It's something I experience virtually every day."

Dr Allon's interest in Buddhist studies started at art school in Sydney. At university he studied Buddhist languages and western philosophy as his major, with a particular interest in Pali, which is related to Gandhari.

When the Gandhari manuscripts started appearing in 1996, Dr Allon went to work for Professor Richard Salomon, head of the British Library/University of Washington Early Buddhist Manuscripts Project, based in Seattle, USA.

In 2002 he returned to Australia to take up a five-year ARC research project on Gandhari manuscripts in the Department of Archaeology at Sydney. He started a three-year lectureship at the University last September which is funded by the University Buddhist Education Foundation.

One Gandhari manuscript translated by Dr Allon reads: "The Buddha's teaching is easy to perform, but only by a wise man, not a fool." Two thousand years later, Mark Allon is proving the truth of those words.



Computer games spark bright idea

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says, "but I have always known what I want: I want to be creative; I want to make things practical."

Mitchell says he is not afraid of being an innovator, even though pioneers often attract criticism.

"Many innovations need time to be accepted by the public," he says. "Some people may think the jersey contains too much technology which goes against the nature of sport. But new generations are growing up carrying around iPods and mobile phones – the next sports generation will have advanced concepts."

Mitchell says university life is all about "guiding yourself". "Sydney University is a good place for being creative," he says, "and it is a community rather than an institute."