

### David Liu

#### 2008 Fulbright Postgraduate Scholar

*“Improving the design of user interfaces on medical equipment is an important issue because the consequences of poor interface design range from simple operator inconvenience at best, to patient mortality at worst.”*

David Liu has received a 2008 Fulbright Postgraduate Scholarship to undertake research at the University of Utah into designing patient simulators to support human factors evaluations of medical device innovations. This research will go towards his PhD in computer science at The University of Queensland (UQ), where he originally completed a Bachelor of Engineering with honours majoring in software.

David will investigate alternative patient simulator designs to overcome the limitations of existing simulators when used for human factors research.

“Human patient simulators are generally used for practitioner training in anaesthesia, but they can also help detect latent errors and design faults in interfaces earlier during the product development lifecycle. However, existing simulators have design limitations that restrict their utility when used for human factors research,” David explains.

“Patient simulators can be used to improve user interfaces, but their utility is restricted by limitations in their existing designs. I will develop significant expertise in patient simulator design and work on the development of novel medical monitoring displays. The software prototypes I aim to develop will be valuable to researchers, in both human factors and medicine, and to simulation centres across Australia.”

David chose to pursue his study in the U.S. for a number of reasons, including the fact the U.S. hosts significant simulator expertise, relating to technology, training and human factors research. “The U.S. has large facilities for this type of research and also hosts many manufacturers of simulators and monitors used across Australia. The University of Utah is an ideal location for my project with the Anesthesiology Bioengineering Laboratory focusing on developing innovative patient monitoring technologies.”

David is currently completing his PhD on an Australian Postgraduate Award Scholarship (2006), having transferred from the Master of Philosophy program. He has also previously won a Richard Jago Memorial Prize (2007), UQ Dean’s Commendations for High Achievement (2001-2004), a Defence, Science & Technology Organisation Scholarship (2004) and a Software Engineering Australia (QLD) Merit Scholarship (2002).

The prestigious Fulbright program is the largest educational scholarship of its kind, created by U.S. Senator J. William Fulbright and the U.S. Government in 1946. Aimed at promoting mutual understanding through educational exchange, it operates between the U.S. and 150 countries. In Australia, the scholarships are funded by the Australian and U.S. Governments and corporate partners and administered by the Australian-American Fulbright Commission in Canberra.

David is one of 24 talented Australians to be recognised as a Fulbright Scholar in 2008. Applications for Fulbright Scholarships in 2009 open on 1 June, visit [www.fulbright.com.au](http://www.fulbright.com.au)