



WEE TECK HIAN

MOVER AND SHAKER: Dr Cheok, who will be featured on the Discovery Channel on Thursday, says mixed reality involves 'taking the virtual world and making it part of our real world'.

Get a grip on mixed reality

NUS-developed new media is stirring up the real world

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IMAGINE playing a game with your pet dog, cat or even hamster. Out of this world? Not quite.

Singapore's Mixed Reality Lab at the National University of Singapore (NUS) is pushing the envelope on interactive new media technologies – and getting noticed for it, too.

Dr Adrian David Cheok, 35, director of the lab, will make an appearance on *One Step Beyond*, a Discovery Channel series on the technology of the future. He is being featured for his work on mixed reality – a way of interacting with virtual worlds in a more natural and physical way, rather than through clunky interfaces such as a keyboard or mouse.

"The problem with virtual reality is that you don't have any contact with the real world," said Dr Cheok in an interview with TODAY. "With mixed reality, what we do is we take the virtual objects and make them part of our real environment. Once that happens, you can use physical objects to interact with virtual objects – it's taking the virtual world and making it part of our real world."

The idea isn't as far-fetched as you might think. If you've played games with the Sony Playstation 2 and its EyeToy camera peripheral, you've already experienced mixed reality.

Mixed reality is how we should be interacting with computers, said Dr Cheok. "Our most natural interaction, from the day we are born, is to pick things up, touch them and move them about – interacting physically with them. The way we interact with people – through talking, gestures, actions and movements – that's the way we should interact with the virtual world ... We want to make it so easy that anyone can use a computer without even realising that they're using a computer."

There is a whole host of applications supporting mixed reality, especially in the gaming, education and military industries.

The NUS Mixed Reality Lab has just finished working with the Defence Science and Technology Agency on a project that can equip soldiers with wearable computers that feed them useful information so they won't be lost in the heat of a battle.

One of its latest in-house developed gaming projects, *Age Invaders*, even bridges the generation gap as it allows children to play games with the elderly. Players get on a physical game board and fire virtual rockets at one another. The older players are given more time to react to the slower rockets fired by the younger players while the younger ones have to react much faster to escape from the high-speed rockets fired by the older players. This helps to balance the different physical abilities across generations.

In the near future, Dr Cheok sees mobile phones becoming a mixed reality interface because they come with ample processing power and, more importantly, the cameras they come with are suitable for mixed reality applications. A Korean mobile company has approached the lab for help in developing mixed reality applications for its phones.

The lab is collaborating with other universities such as the Massachusetts Institute of Technology and the University of Southern California on mixed reality projects and technologies. It is also applying its expertise to the new NUS Hollywood Lab in Los Angeles, California, and working with major Hollywood movie studios on games and other entertainment applications.

Dr Cheok noted that with the help of gaming consoles, more people are experiencing mixed reality. He is encouraged to see young people taking more of an interest in it, thus helping mixed reality – a new interactive medium – cross over into the mainstream.

Said Dr Cheok: "Interactive media is so important now because it's developing new industries for Singapore and what we're finding is that a lot of young people are very eager to work in an area where it's not just about pure technology but, where they can also express their creativity."

One Step Beyond premieres on Thursday, 8pm, on the Discovery Channel.