

# Embodied Media and Mixed Reality for Social and Physical Interactive Communication and Entertainment

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## **Abstract**

This talk outlines new facilities within human media spaces supporting embodied interaction between humans, animals, and computation both socially and physically, with the aim of novel interactive communication and entertainment. We aim to develop new types of human communications and entertainment environments which can increase support for multi-person multi-modal interaction and remote presence. In this paper, we present an alternative ubiquitous computing environment based on an integrated design of real and virtual worlds. We discuss some different research prototype systems for human to human and also human to animal interactive communication and play. The functional capabilities implemented in these systems include mixed reality, tangible interaction, and ubiquitous human media spaces.

Related Web Sites: [www.mixedrealitylab.org](http://www.mixedrealitylab.org)

## **Biography**

Adrian David Cheok is Director of the Mixed Reality Lab, National University of Singapore. He is Associate Professor in the Department of Electrical and Computer Engineering.

He has previously worked in real-time systems, soft computing, and embedded computing in Mitsubishi Electric Research Labs (Osaka, Japan). He has been working on research covering mixed reality, human-computer interaction, wearable computers and smart spaces, fuzzy systems, embedded systems, power electronics, and multi-modal recognition. He has successfully obtained funding for externally funded projects in the area of wearable computers and mixed reality from Nike, National Oilwell Varco, Defense Science Technology Agency, Ministry of Communications and Arts, National Arts Council, Singapore Science Center, Hougang Primary School. The research output has included numerous high quality academic journal papers, research prototype deliverables numerous demonstrations including to the President and Deputy Prime Minister of Singapore, broadcast television worldwide broadcasts on his research (such as CNN/CNBC/Discovery/National Geographic), and international invited new media exhibits such as in Ars Electronica and Wired Nextfest.

He is currently an Associate Professor at the National University of Singapore where he leads a team of over 20 researchers and students. He has been a keynote and invited speaker at numerous international and local conferences and events. He is invited to exhibit for two years in the Ars Electronica Museum of the Future, launching in the Ars Electronica Festival 2003. His works "Human Pacman" and "Magic Land" were selected as one of the worlds top inventions by Wired and invited to be exhibited in Wired NextFest 2005. He was invited to show the works "Human Pacman" and "Magic Land" at Wired NextFest 2005. He was IEEE Singapore Section Chairman 2003, and is presently ACM SIGCHI Chapter President. He was awarded the Hitachi Fellowship 2003, the A-STAR Young Scientist of the Year Award 2003, and the SCS Singapore Young Professional of the Year Award 2004. In 2004 he was invited to be the Singapore representative of the United Nations body IFIP SG 16 on Entertainment Computing and the founding and present Chairman of the Singapore Computer Society Special Interest Group on Entertainment Computing. Also in 2004, he was awarded an Associate of the Arts award by the Minister for Information, Communications and the Arts, Singapore.

In 2005 he was awarded a Microsoft Research Award for Gaming and Graphics. He is Editor/Associate Editor of the following academic journals: The Open Electrical and Electronic Engineering Journal, Advances in Human Computer Interaction, International Journal of Entertainment Technology and Management (IJEntTM), Virtual Reality (Springer-Verlag), International Journal of Virtual Reality, and The Journal of Virtual Reality and Broadcasting.

Adrian David Cheok, who was born and raised in Adelaide Australia, graduated from the University of Adelaide with a Bachelor of Engineering (Electrical and Electronic) with First Class Honors in 1992 and an Engineering PhD in 1998.