

Industry Training Using Virtual Reality

The Problem

The dangerous nature of industries like mining, construction, policing and the military make it difficult to adequately train staff in a realistic environment. Most training methods are both costly and inadequate.

The Technology Solution

The solution developed by UNSW provides a virtual version of the dangerous environment. This removes the risks and costs of training people in the dangerous real world by immersing the trainees in a highly realistic 3 dimensional virtual world.

The UNSW solution combines interactive computer game style training modules with highly immersive audio / visual environments, known as the AVIE and the iDOME.

The AVIE (Advanced Visualisation and Interaction Environment) is a 360-degree theatre used for group training, allowing up to 30 people to be completely surrounded in a 3 dimensional virtual world.

The 180-degree 'iDOME' is used for individual training. A four meter diameter fibreglass hemisphere stands vertically in front of the viewer.

Both systems use shape tracking technology with real time software to monitor movements and body pose. They enable user participation and interplay between real people and projected images to make this training interactive.

The interactive training modules are developed using state of the art gaming technology. The modules have been developed to operate in 3D within the AVIE, iDOMES, and a range of non-proprietary audio / visual theatres.

UNSW has released a suite of interactive training modules for the Coal mining industry. These training modules are being used in AVIEs and iDOMES in purpose built virtual reality training centres across Australia.

Similar style interactive training modules can be developed by UNSW for any industry situation, and UNSW is already working with industry partners in sectors outside of the coal mining sector.



Inside the AVIE realistic training environment

The modules allow users to feel like they are sitting in an underground mine vehicle moving along a drive in which they can see in all directions, reach out and touch the roof bolts, manoeuvre past static vehicles, or walk up to operating continuous miners.



An example of what trainees in the mining industry see in this immersive environment

Initial introduction to these immersive environments is an uncanny realistic experience. Trainees can visualise and recognise situations, build up knowledge of procedures and skills all while participating in a safe and forgiving environment.

Trainees interactively learn where they should or should not go, and recognise danger signs and situations.

The Team

The interactive software training modules were developed by UNSW School of Mining Engineering.

The AVIE and iDOME were created jointly by UNSW College of Fine Arts and the School of Computer Science.

Investment Opportunity

NewSouth Innovations Pty Limited (NSi) commercialises research and technologies developed at the University of New South Wales (UNSW).

NSi is seeking companies interested in purchasing the solutions for training purposes, or companies interested in selling and supporting these solutions to specific geographical and/or industry sectors.

Similarly, NSi is interested in working with industry partners that require UNSW to custom build interactive virtual reality training modules for their specific industry situations.

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