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Pixel packing for art's sake

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SONIC Tai Chi really kicks. It kicks convention.

Its earlier name, Sonic KungFu, was mischievously misleading, as no martial arts are involved.

It is more a sound instillation than an activity anyone can get a black belt in.

If you have seen the movie, *Minority Report*, you may remember the Tom Cruise character who put on special gloves to control his computer.

Sonic Tai Chi does not require those who interact with it to have special gloves - they only need to move.

Its developers, Joanne Jakovich and Dr Kirsty Beilharz, wanted to get people to react to digitally generated spatial elements, such as projected imagery and digital sound.

The pair are researching sound spaces at Sydney University's Key Centre of Design, Computing and Cognition.

The idea was to create a experience by building a space that responds to movement, Jakovich says. That is what they did with the help of a Macintosh iSight webcam, a Powerbook G4, some speakers and a rear projection system.

The image captured by the iSight is stripped of anything recognisable using the Horn-Schunk method created by Max/MSP and Jitter software tools.

A lot of time was spent compiling code Max/MSP to make the optical flow algorithm, Jakovich says.

When there is no movement the screen is populated by cellular automata - a bunch of large pixels that bounce about the screen like a special effect in the original Star Trek series.

These pixels are programmed to behave according to a set of rules: if a live cell has two or three live neighbours, it remains alive. If a dead cell has exactly three live neighbours, it becomes alive again.

The pixels respond to movements or gestures of people in front of the iSight camera.

"Depending on how much you move and where you move, you can destroy or bring cells back to life to create visual and sound effects," Jakovich says.

Rainbow-coloured outlines of people become visible when they move. Sound is also generated by people moving.

Fast movements produce more pixels and make the sound more frenetic.

Moving to the left or going low, will create low-pitched sounds and moving high or to the right will create high-pitched sounds.

Jakovich says children seem to get the idea quickly and respond by running about to get Sonic Tai Chi to react.

Older people tend to be more reserved when in front of it, she says.

The intention was the opposite, Jakovich says.

She was trying to create an aesthetic, to get people to behave in a different way, to be less inhibited. Jakovich is working on a doctorate in architecture.

Creating Sonic Tai Chi was an entertaining distraction from the books, she says.

Sonic Tai Chi kicked off last week at the Beta--space at Powerhouse Museum, on the edge of Sydney's Darling Harbour precinct.

It will be showing until January 6.

Beta--space at the Powerhouse Museum is an experimental environment where the public can engage with the latest research in art and technology.

The space is for museum visitors to experience collaboration between art and technology.

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