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3D human enjoys pain-free surgery

Teddy Ng

The Chinese University of Hong Kong has made a significant breakthrough in virtual human research, allowing students to practise operations and acupuncture without using real people.

The university announced yesterday that in collaboration with the First Military Medical University in Guangzhou and the Third Military Medical University in Chongqing it had produced the world's highest resolution virtual human.

To create the computer-generated 3D virtual human, scientists from the mainland institutions dissected a cadaver into several thin layers and took digital colour photographs of the dissected layers.

The data was then sent to the university to be put together using imaging technology.

This allowed the institution to reconstruct an anatomically correct, computer-generated virtual human that could then be projected on to an imaging pad..

University pro-vice-chancellor Jack Cheng said the most refined visible virtual human dataset at the United States National Library of Medicine consisted of merely 5,189 digital axial anatomical images.

University computer science and engineering professor Heng Pheng-ann said they had produced computer software that allowed users to examine the body from different angles, in three dimensions.

''Users, especially medical students and researchers, can clearly understand the connection of different organs.

''Users can also take away the skin to see what is inside the body. This facilitates the learning of anatomy,'' Heng said.

Heng said the university had also invented software to help students practise acupuncture.

When students use the needle on the virtual human on the imaging pad, the computer stimulates a response, indicating whether the needle reached the intended location.

Another piece of software allowed students to work on bone joint operations.

Heng said the university needed a further two years to process the images of other organs of the body, which would allow students to practise even more operations.