

Making human motion more animated

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Capturing and animating human motion for use in virtual reality or in television production is typically long and costly. However that is about to change with the first fast low-cost motion animation system that needs no markers, bodysuits or other sensors.

Using just a PC, two cameras and the motion recognition software developed by the IST programme-funded project HUMODAN, television producers will be able to easily and cheaply create animated characters based on the real-time movements of human actors, effectively offering small production companies capabilities that were only previously available at high-cost to their larger peers. HUMODAN also opens to the door to the creation of new interactive virtual reality environments accessible to anyone.

“The system automatically recognises the parameters of the person being recorded, such as the colour of their skin and the length of their limbs, before it starts reproducing their movements on an animated character,” explains project coordinator Ángel Suescun at CEIT in Spain. “Unlike other systems HUMODAN does not require the person being recorded to have sensors or markers placed all over their body – it records and animates them as they are by using state-of-the-art image processing and synthesis techniques.”

On the one hand the method allows animated characters to be generated faster and to be displayed in real-time, while on the other it offers enormous cost savings.

“Traditional systems cost anywhere from 150,000 to 200,000 euros to

buy, whereas we estimate the cost of HUMODAN would be between 3,000 and 6,000 euros,” Suescun says.

The speed and economy of the system does, however, come with a drawback, as HUMODAN is not as accurate as sensor-based systems. “Accuracy, however, is not as important in the entertainment industry as it is in industrial or medical applications,” the coordinator explains, noting nonetheless that the consortium is planning to develop the system further to expand its application areas.

Two demonstrators have showcased its uses in TV production and virtual reality.

In the first demonstrator it was used to create an animated game show presenter for a competition in which human participants used their hands to interact. “Their hands replaced the joystick,” Suescun says. In the second, a virtual world was developed that anyone can enter as an avatar by standing in front of a camera array and having the system record their movements. “It is a new form of entertainment that could be set up in public areas,” the coordinator says. “It would serve to introduce the general public to virtual reality.”

Source: IST Results

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