Scientists develop virtual K-pop dance teacher to make dance learning easier

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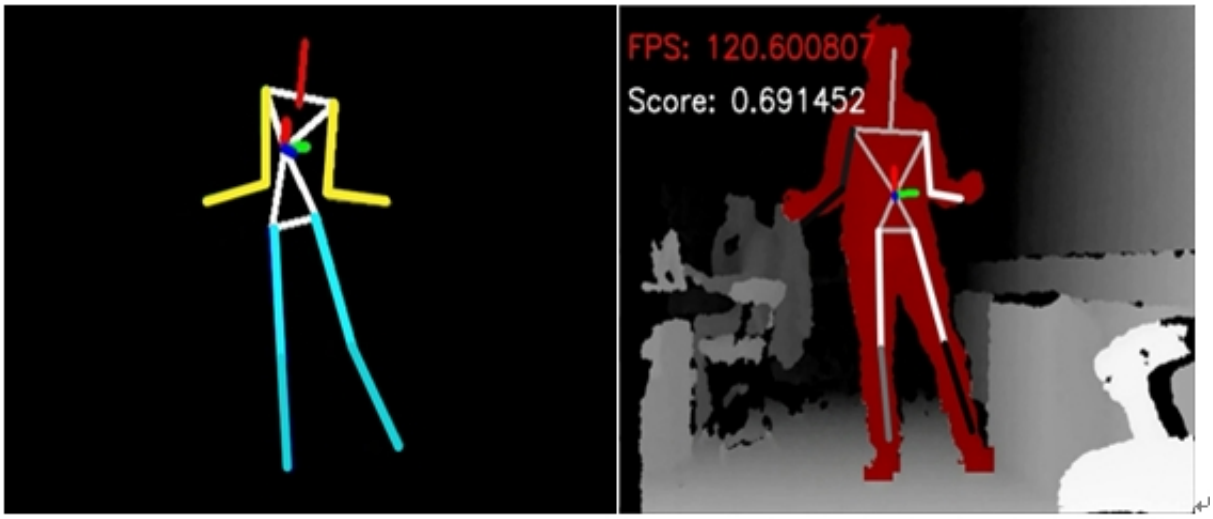

Daijin Kim and his team at POSTECH, South Korea, have developed a virtual dance teacher that can make learning famous K-Pop dances easier at home by precisely tracking 3D body joints. They successfully developed the precise 3D tracking of 15 human body joints using big data of the human body and the relational information among human body joints and its tracking performance showed a 4.5 cm error on average among 15 human body joints.Dance movement of a dance teacher (left) and a dance learner (right). In the right figure, body parts of the dance learner are represented with brighter sticks as they are those of the dance teacher. Credit: POSTECH

Daijin Kim and his team at POSTECH (Pohang University of Science

and Technology), South Korea, have developed a virtual dance teacher that can make learning famous K-Pop dances easier at home by precisely tracking 3D body joints. Kim presented the relevant technical paper at ICIP 2015 (IEEE International Conference on Image Processing 2015).

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In order to develop the virtual K-Pop dance teacher, the team selected a hundred K-POP dance routines that were performed by a professional dancer and collected the moves of 15 body joints of each dancing movement. They then extracted the moves of 15 body joints from a dance learner using the developed precise 3D tracking of body joints and evaluated the average similarity between the body joint movements of the dance learner and those of the professional dancer.

They also developed a score monitoring method based on the similarity and represented how much each body part of a dance learner is deviated from the corresponding body part of a professional dancer. The brightness of each body part specifies the similarity of dance movements of each body part (See Figure 1).

The submitted paper was selected as one of the top 10 papers among 1,098 accepted papers. This implied that the developed technology of precisely tracking 3D body joints was recognized as outstanding.

Provided by Pohang University of Science & Technology (POSTECH)

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