Abstract

In this paper the real time virtual dress-up system has been proposed. The proposed system consists of multiple tasks including extraction of different body parts, torso detection, resizing input dress images and dress up using blending and re-blending techniques over the subject. The coexistence of different clothing and cluttering backgrounds is the main difficulty for accurate body extraction in image. Haar classifier is applied for detecting face from input frames and geometrical information is used to extract different parts (like a face, a torso, and hands) of a body according to the face position in a frame. Due to the variability of human body, it is complicated to extract accurately. A novel dominant colors based segmentation method is proposed to tackle this problem. First, an image is segmented into uniform areas based on HSV color components. Then, dominant colors of the torso are adaptively selected using color probability model. The torso has been extracted based on the dominant colors to resize the input dress image to fit over the subject body as well as dress size prediction. Automatic dress blending points are calculated on human body using torso starting position and geometrical relationship with face region. A selected dress is scaled and rendered to fit with the subject's body even they move around. Some preprocessing and post processing
techniques are used to make outputs more accurate and realistic.

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Index Terms

Computer Science

Artificial Intelligence

Keywords

Torso detection Body measurement Real-time Clothing dress-up system dress color recognition

human-computer interaction