

## عنوان مقاله:

Deformable 3D Shape Matching to Try on Virtual Clothes via Laplacian-Beltrami Descriptor

## محل انتشار:

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## خلاصه مقاله:

Recently, significant attention has been paid to the development of virtual reality systems in several fields such as commerce. Trying on virtual clothes is becoming a solution for the online clothing industry. In this paper, we propose a method for the problem of virtual clothing using 3D point matching of a selected cloth and the customer body. For this purpose, we provide a 3D model of the customer and the selected clothes, put up on the mannequin, using a Kinect camera. As the size of the abdominal part of the customer is different from the mannequin, after pre-processing of the two captured point clouds, the 3D point cloud of the selected clothes is deformed to fit the 3D point cloud of the customer's body. We use Laplacian-Beltrami curvature as a descriptor to find the abdominal part in the two point clouds. Then, the abdominal part of the mannequin is deformed in 3D space to fit the abdominal part of the customer. Finally, the head and neck of the customer are attached to the mannequin point. The proposed method has two main advantages over the existing methods for virtual clothing. First, no need for an expert to design a 3D model for the customer body and the selected clothes in advanced graphical software such as Unity. Second, there is no restriction for the style of the selected clothes and their texture while existing methods have such restrictions. The experimental results justify the ability of the proposed method for virtual clothing.

## کلمات کلیدی:

Virtual Clothes, 3D Mapping, Laplace-Beltrami, Shape Deformation

## لینک ثابت مقاله در پایگاه سیویلیکا:

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