

عنوان مقاله:

View-Based 3D Objects Retrieval Using Geometric Features of Silhouette in Different Canonical Characterization

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خلاصه مقاله:

In this paper, we propose a view-based 3D objects retrieval method, where geometric features from each 3D object's view contour from its silhouette are employed for comparison between two 3D objects. In this work, each 3D object is represented by a set of 2D views. Since 3D objects in the space may have an arbitrary position, the method treats a normalization step in which the models are transformed into a canonical characterization. Then, each model is orthogonally projected into six surfaces of the surrounding cube. In the following step, features of silhouette contour are extracted in the projected images. At the end, we sample some points in the generated contour. After that, we extract four geometric features including Euclidean distance of specified point to the origin; the angle between the normal vector on the 3D object's contour points and the vector that connect shape origin to that point; the cross Euclidean distance between pair of specified extracted points and cross normal vector angles. Performance of the proposed method is investigated using McGill database. Experimental results demonstrate that our method can effectively discriminate 3D models

کلمات کلیدی:

component; 3D objects retrieval; 3D objects pose normalization; geometric features

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