

A 3D model retrieval approach using the interior and exterior 3D shape
information

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Abstract

In this paper, we will propose a new exterior shape feature, ART-based elevation descriptor (ART-ED), and a new interior shape feature, shell grid descriptor (SGD), for 3D model retrieval. ART-ED describes the elevation information of a 3D model from six different angles. Since ART-ED represents only the exterior contour of a 3D model, SGD is proposed for extracting the interior shape information. Finally, these two proposed features as well as other features are combined in an attempt to improve retrieval. Experimental results show that the proposed methods are superior to other descriptors.

Keyword : 3D model retrieval, ART-based elevation descriptor, shell grid descriptor