

**A Simple Saliency-Based Mesh Cut Technique and Its Application**

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**Abstract**

The problem of finding the cutting contours of a 3D mesh to extract patches or components from an existing mesh is an essential and crucial step in a variety of geometrical processing applications including mesh segmentation, simplification, smoothing, and shape understanding, etc. Previous works either rely on a set of prescribed constraints or user interventions to derive the cuts. In this paper, we apply a set of saliency-related metrics including the normal variance, the degree of concaveness, and the degree of protrusion to find feature contours from the input mesh. Following the filtering of the features, a smooth path along the features is reconstructed to form a set of cuts. As an example application, the cuts are then used to assist the simplification of the input mesh to improve the visual appearance of the simplified output.

**Keywords:** mesh cut, mesh segmentation, part saliency.