

記錄 1，共 1 個

標題: A novel mesh saliency approximation for polygonal mesh segmentation

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摘要: To assist a great variety of applications including object recognition or shape matching, 3D scene analysis, view point selection, mesh simplification, segmentation, and 3D printing etc., the approximation of mesh or part saliency has been intensively studied in recent years. A recent trend on developing such techniques has been turned from utilizing local or global shape descriptors to human visual perceptual rules. Consequently, the concepts and the theories from cognition science were extensively applied. In this paper, we borrowed the theory of part salience by Hoffman and Singh and devised an approach to mesh or part saliency computations. Unlike previous attempts, we proposed a single scalable measure of mesh or part saliency via a linear combination of the three factors of human visual perception, i.e, the degree of part protrusion, the relative size of a part, and the strength of a part's boundaries, in addition to their individual quantizations. To verify the efficacy of our approach, an iterative saliency-optimized polygonal mesh segmentation is devised. To provide an objective quantitative evaluation in addition to traditional visual inspection, a public domain benchmark software developed by Chen et al. was deployed. According to the inspections on the colored segments and the benchmarking scores, our saliency computation indeed improves the segmentation of 3D objects with protrusive parts, outperforming a number of well-known approaches.

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