17th IAPR International Conference on Discrete Geometry for Computer Imagery

ConfTool

Information on the contribution

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Title: **A 3d curvilinear skeletonization algorithm with application to path tracing** (Paper submission)

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Evaluation of the contribution

Content (10%)	*Significance* (10%)	*Originality* (10%)	*Relevance* (10%)	*Presentation* (10%)	*Recommendation* (50%)	*Total points (out of 100)*
6	**8**	**2**	**8**	**8**	**7**	**67**

Reviewer's comments on the contribution

Contribution of the submission:

In this paper a skeletonization agorithm for cubical complexes is presented and applied to obtain a new path tracing algorithm to simulate light propagation.

The skeletonizazion algorithm is based on a thinning prcedure that can be parallelized by removing free faces with the same orientation and direction at the same time. In order to preserve geometrical features during thinning, an indicator of how important a face is used, based on how long this face survives as a facet.

Applying the skeletonization algorithm on the voids of a 3d scene allows to improve the path tracing algorithm.

Comments for the authors:

This paper is an extended version of the short paper "Skeleton based importance sampling for path tracing" by V. Biri and J. Chaussard, EUROGRAPHICS 2012. The use of cubical complexes instead of voxels seems to be the main novelty of the present paper. On the other hand, this paper is much more detailed and reads well.

Minor remarks:

Abstract, l. 4: used in a new path tracing algorithm
p. 3, l.1: Cartesian
Algorithm 1: for t=1-->n do
p. 5 l. -3: it finds
p. 7 l. 11: with regard. l.17: example; in Fig. 3. l. -1: In the same way
p. 9 : at point x; at x
p. 10: l. 5 gives. l. 19: don't--> do not. l. -18: preprocessing performed on it. l. -4: gives the direction