Adaptable Curve-Skeleton Extraction for 2D Objects
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ABSTRACT
Curve-skeletons are simplified representations of objects, and could be very helpful in many visualization applications. Although various algorithms for such extraction methodologies are available in the literature, they are usually fine-tuned for specific applications. In this paper, we extend our previous study on a 2D curve-skeleton extraction algorithm based on directional distance transform [1]. In addition to the shortest distance to the boundary, each pixel is extra provided with a hit angle and a direction by mimicking the water flow. Pixels with greater hit angles are considered to be feature points of the skeleton, and they are connected to form the whole skeleton under the guidance of their direction information. Finally, a thinning procedure is applied to prune the skeleton. Different parameters can be set to produce different results, making our method adaptable to objects in various shapes.

Keywords: Curve Skeleton; Object Representation; Distance Transform; Image Processing

REFERENCES