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Computer Graphics II
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22 October 2021

Summary

Similar to a physical artist making a simple sketch or outline of the work they plan on drawing, surface and curve "skeletons" help provide a base for computer models to work off of. This article discusses a GPU-based approach for developing accurate skeletonization of 3D models of significant size. When the process of skeletonization gets introduced to complex three-dimensional objects, a lot of setbacks exist, especially when using polygonal meshes. One of the most significant includes being able to compute such skeletons efficiently, relative to the speed and memory of the device such a process is occurring on. The authors provide a framework using skeleton "clouds," allowing a process two orders of magnitude faster and more accurate than a typical state-of-the-art method. On top of this, the product is of similar or even higher quality than the previously mentioned methods.