

Interactive Rendering Framework for Distance Function Representations

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Abstract

Sphere tracing, introduced by Hart in [1], is an efficient method to find ray-surface intersections, provided the surface is represented by a signed distance function (SDF) or a lower estimate of it.

This talk presents an interactive rendering framework for visualizing exact and estimate SDF representations. The rendering engine is capable of adaptively increasing quality parameters, such as resolution. It increases the quality of the image iteratively, based on the data generated for the previous frame.

We demonstrate the performance of the system by visualizing 3D fractals and its modularity by rendering CSG models and meta surfaces.

Keywords: Computer Graphics, Signed Distance Functions, Real-time Rendering

MSC: 65D18, 68U05

References

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