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Output-Sensitive Rendering of Detailed Animated Characters for Crowd Simulation

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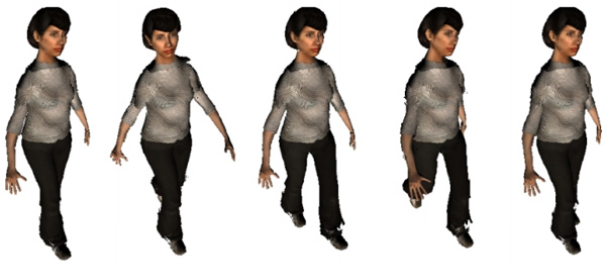

Rendering detailed animated characters is a major limiting factor in crowd simulation. In this paper we present a new representation for 3D animated characters which supports output-sensitive rendering. Each character is encoded through a small collection of textured boxes storing color and depth values. At runtime, each box is animated according to the rigid transformation of its associated bone. A fragment shader is used to recover the original geometry using an adapted version of relief mapping. Unlike competing outputsensitive approaches, our compact representation is able to recover high-frequency surface details and reproduces view-motion parallax. Furthermore, our approach does not require us to predefine the animation sequences nor to select a subset of discrete views. Our user study demonstrates that our approach allows for much more simulated agents with negligible visual artifacts.

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