

Re: Deep G-Buffers for Stable Global Illumination Approximation

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Abstract

G-Buffers can be used to efficiently render images with an absurd amount of light sources - compared to other global illumination methods like pathtracing. This is possible thanks to a process called "deferred rendering". By using Deep G-Buffers we can speed up the whole process by approximating global illumination instead.

Keywords *g-buffer, deep g-buffer, pathtracing, global illumination, shading*

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1 Deferred Rendering

TODO

1.1 Different global illumination methods (Pathtracing, photonmapping)

1.2 Why they are inefficient (but pretty)

1.3 How deferred rendering handles lighting more efficiently

2 G-Buffer

2.1 Frame-Buffer

2.2 Z-Buffer

2.3 Position-Buffer

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2.5 Diffuse-buffer

2.6 Computing global illumination using G-Buffers

2.7 Performance comparison: G-buffers vs Pathtracing

2.8 Output comparison: G-Buffers vs Pathtracing

3 Deep G-Buffer

3.1 Concept

3.2 How Deep G-Buffers improve performance

3.3 Performance comparison: G-buffers vs Deep G-Buffers vs Pathtracing

3.4 Output comparison: G-Buffers vs Deep G-Buffers vs Pathtracing