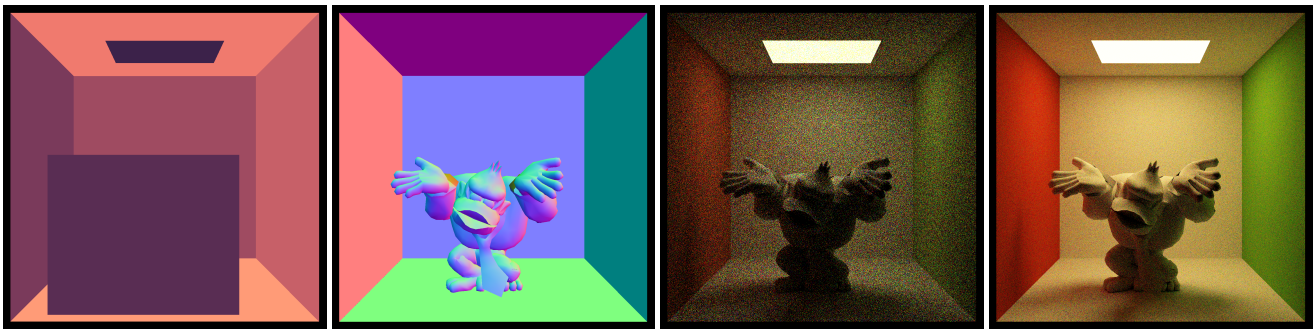
CRT: CUDA Ray Tracer

Raj Sugavanam
Washington University in St. Louis

Junseo Shin
Washington University in St. Louis



(a) something something (b) something something (c) somethingx3 (d) somethingx4

Figure 1: something something

ABSTRACT

We present a spectral path tracer that showcases the capabilities and limits of the CUDA programming model in the field of physically based rendering. The simplest ray tracing algorithm requires the GPU to dispatch rays from the camera into the scene, and calculate the interaction of the rays with the scene geometry in order to render an output image of the camera's view. Our implementation focuses on rendering a Cornell box test scene to demonstrate the accuracy and performance of the CUDA ray tracer (CRT). Representing the scene geometry with triangle meshes presents the ability to interopt professional 3D modeling software with the ray tracer, but also explores the limitations of our implementation.

1 INTRODUCTION

The computational complexity of simulating physical phenomena compels high performance computing and parallel processing.

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