

GLOBAL ILLUMINATION

Project Proposal

Divesh Badod(db9932@rit.edu)

Prof. Joe Geigel

Title: - Simple Ray Tracing using DirectX

1. Description

DirectX12 is a 3D API that allows easy use of GPU-accelerated ray tracing in DirectX and allowing simple interoperability with traditional DirectX rasterization with the help of DirectX Raytracing (DXR). The purpose of the project is to get familiar with DirectX API by implementing the topics that were taught in classes and assignments in DirectX framework and create a simple scene using ray tracing, though the outcome will not be the same as the assignments.

2. Work Plan

I will be working parallel to the assignment submissions, if possible faster and try to implement some advanced topics. Following are the areas I wish to explore with this project (tentative).

Create HLSL pixel shaders for G-buffer pass rasterization.

- a. Ray tracing using the same G-buffer pass.
- b. Ambient occlusion
- c. Antialiasing
- d. Shading (Phong, Lambertian)

All of these will be a step-by-step implementation just like the assignments.

3. Group members

This is an individual project, and I wish to cover as much topics as possible in the given time period.

4. Demo/Presentations

a. Midterm Week:

By the midterm week I plan on completing rasterization and ray tracing step of the project. Since the list of topics to cover is tentative right now by the time of midterms, I will present a list of topics which will be surely covered in the project.

b. Finals weeks:

I will present an extensive report on the progress and the results of the project, with in-depth description of the topics implemented along with screenshots of my final output.