

Any Hit Shaders and Shadows

CS 481/681 Computer Graphics Rendering

University of Alaska Fairbanks

Any Hit Shaders and Shadows

- Ray Tracing Pipeline
- Any Hit Shaders
- Shadow Rays
- Participating Media

Ray Tracing Pipeline

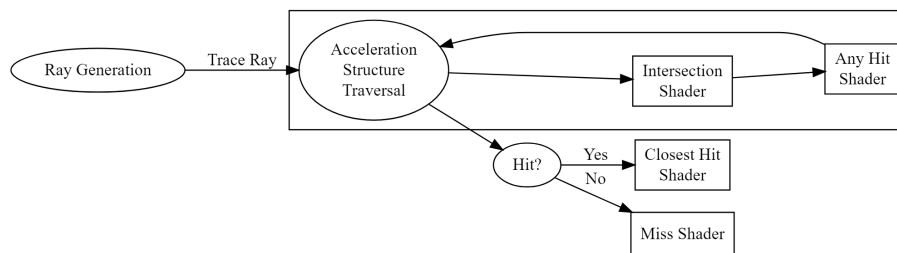


Figure 1: Ray Tracing Pipeline

Any Hit Shaders

- This is executed after the intersection shader
- We have a hit, what do we do?
 - Alpha Testing?
 - Spawn new rays?
 - Kill the ray?

Shadow Rays

- Whitted Ray Tracing
 - Reflection Rays
 - Refraction Rays
 - Shadow Rays

- Loop Over Every Light
 - If ray is blocked: we're in shadow
 - Else: calculate illumination
- So what kind of stuff is blocking?

Participating Media

- Stuff that scatters light
- Translucent objects
- Participating media
 - Isotropic
 - Anisotropic
- Examples: marble, milk, skin, aerial perspective

Types of Scattering

- Absorption
- Emission
- In-scattering
- Out-scattering
- Complications (Change of Phase, Spectral)

Hybrid Topics and Activity Worksheet

- Any Hit Shaders and Shadows