

RTX-Explore

DXR Path Tracer

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Current Progress

MILESTONE I - Part 1

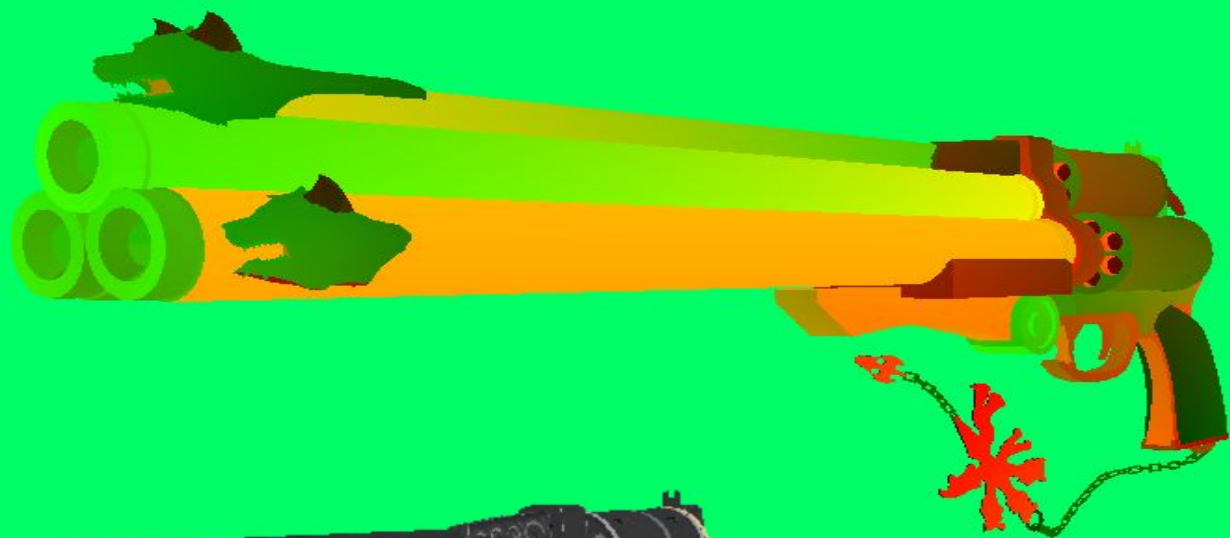
Ray tracing pipeline

Object Loading

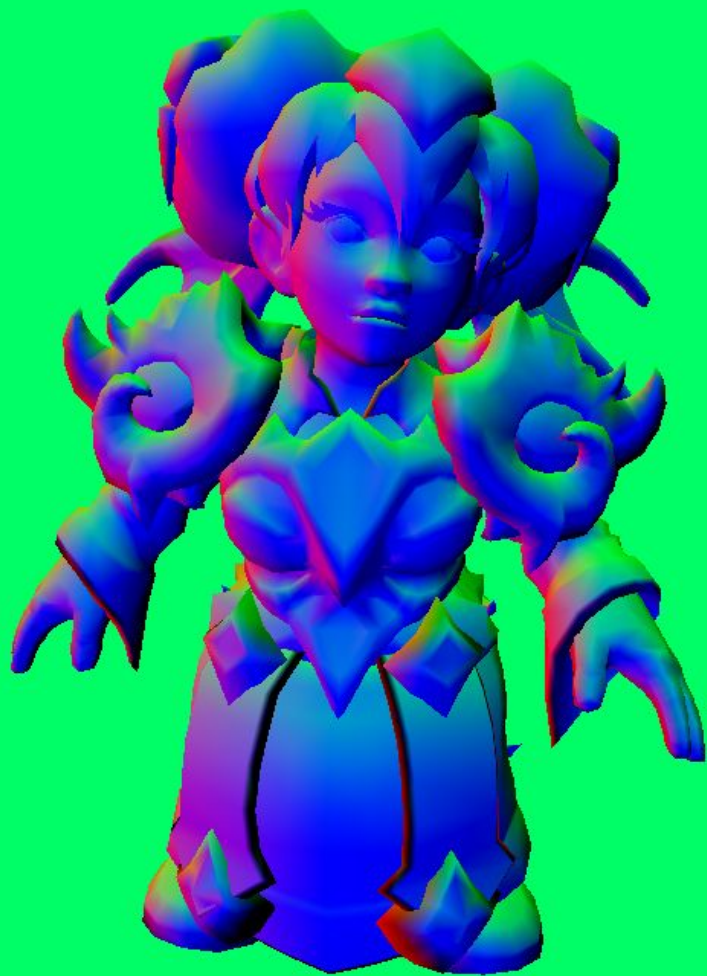
Textures

Normal mapping







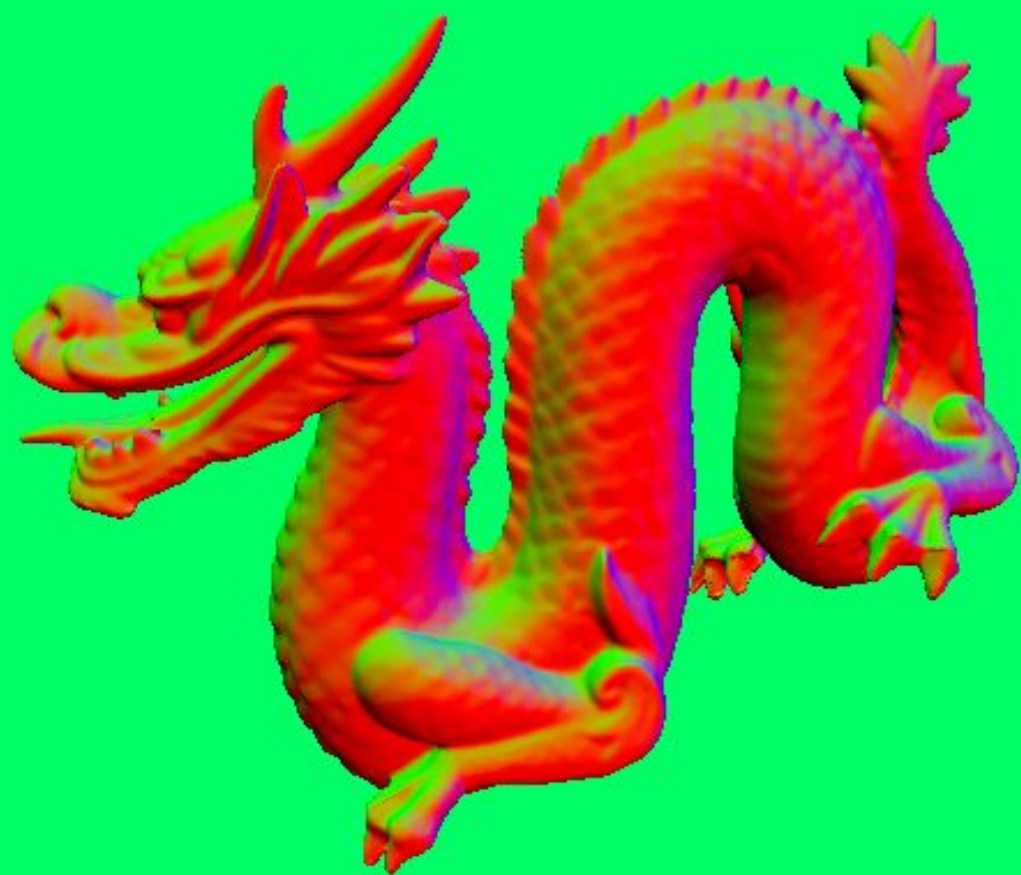


MILESTONE I - Part 2

Basic Raytracing Setup

Fallback layer

Acceleration structure





MILESTONE I - Part 3

Debugger Setup with Fallback layer

Home

Local Machine X

GPU 1.wpix* X

Overview

Pipeline

Tools

Debug

Analysis is **running** on NVIDIA GeForce GTX 1070.

Local Machine (lo

Events

Graphics Queue 0 ▾ . * Aa :G Filter (Ctrl+E) X ▾ ^ ▾ Collect Timing Data |

Queue ID	Name	Global ID
0	Signal(obj#6,20180) {this->ID3D12CommandQueue obj#5	1
2	ResourceBarrier(1,...) {this->ID3D12GraphicsCommandl	2
10	DispatchRays(1280, 720)	3
19	ResourceBarrier(2,...) {this->ID3D12GraphicsCommandl	4
20	CopyResource(obj#26,obj#20) {this->ID3D12GraphicsCo	5
21	ResourceBarrier(2,...) {this->ID3D12GraphicsCommandl	6

Screen Shot

File Details

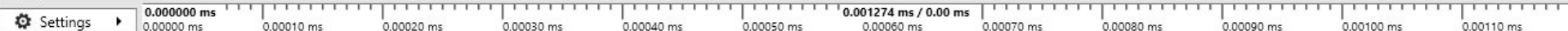
Warnings (0)



1280x720

Timeline

. * Aa Filter (Ctrl+E)



Graphics Queue 0 EOP

Execution Duration

Graphics Compute Copy

Occupancy

Enable

[Click here](#) to collect timing data.[Click here](#) to collect timing data.

Local Machine x

GPU 1.wpix* x

Pipeline

Tools

Debug

Analysis is running on NVIDIA GeForce GTX 1070. Local Machine (localhost)

Events

Graphics Queue 0 . * Aa !G Filter (Ctrl+E) Collect Timing Data

ID	Name	Global ID
0	Signal(obj#6,20180) {this->ID3D12CommandQueue obj#5,	1
2	ResourceBarrier(1,...) {this->ID3D12GraphicsCommandL	2
10	DispatchRays(1280, 720)	3
18	Dispatch(160,90,1) {this->ID3D12GraphicsCommandLi	3
19	ResourceBarrier(2,...) {this->ID3D12GraphicsCommandL	4
20	CopyResource(obj#26,obj#20) {this->ID3D12GraphicsCoi	5
21	ResourceBarrier(2,...) {this->ID3D12GraphicsCommandL	6

State

Event Details

Resources

API Objects

Edits

Shader Sources

All Filter (Ctrl+E)

Name	Value
obj#18 (Texture buffer resou	D3D12 Resource
obj#19 (Texture buffer resou	D3D12 Resource
obj#20 (m_raytracingOutput)	D3D12 Resource
obj#21 (m_descriptorHeap)	D3D12 Descriptor Heap
obj#22 (HitGroupShaderTable)	D3D12 Resource
obj#23 (MissShaderTable)	D3D12 Resource
obj#24 (RayGenShaderTable)	D3D12 Resource
obj#25	D3D12 Pipeline State
obj#26 (Render target 1)	D3D12 SwapChain Buffer Resource

Pipeline

Filter (Ctrl+E)

Global ID 3 48%

U: g_sceneCB

Buffer [0, space=214743647]: HitGroupShaderTable

Buffer 1: Indices

Buffer [1, space=214743647]: MissShaderTable: Mis

Buffer 2: Vertices

Buffer [2, space=214743647]: RayGenShaderTable:

Texture 3: Texture buffer resource mario.png Diffuse

Texture 0: m_raytracingOutput: RenderTarget

Buffer [2, space=214743648]: BottomLevelAccelerat

Buffer [3, space=214743648]: TopLevelAcceleration:

Sampler 0: s1

Constants [0, space=214743647]: Constants

Constants [1, space=214743647]: AccelerationStruc

Visualization

Properties

Visualization Image

Format R8G8Bf

Aspect Ratio 100% (1)

Histogram [0,1]

R 0 1

G 0 1

Pixel Details

Coordinates

X 0

Y 0

U 0.0003472222

V 0.0010416666

Channels

R 0.36863

G 0.20000

B 0.16471

A 1.00000

Zoom

Home

Local Machine x

GPU 1.wpix* x

OverviewPipelineToolsDebug

Analysis is running on NVIDIA GeForce GTX 1070. Local Machine (localhost)

Events

Graphics Queue 0 . * Aa !G Filter (Ctrl+E) X ^ v Collect Timing Data

Queue ID	Name	Global ID
0	Signal(obj#6,20180) {this->ID3D12CommandQueue obj#5}	1
2	ResourceBarrier(1,...) {this->ID3D12GraphicsCommandList obj#6}	2
10	DispatchRays(1280, 720)	3
18	Dispatch(160,90,1) {this->ID3D12GraphicsCommandList obj#6}	3
19	ResourceBarrier(2,...) {this->ID3D12GraphicsCommandList obj#6}	4
20	CopyResource(obj#26,obj#20) {this->ID3D12GraphicsCommandList obj#6}	5
21	ResourceBarrier(2,...) {this->ID3D12GraphicsCommandList obj#6}	6

State

Event Details

Resources

API Objects

Edits

Shader Sources

All Filter (Ctrl+E) X

Name	Value
obj#18 (Texture buffer resource)	D3D12 Resource
obj#19 (Texture buffer resource)	D3D12 Resource
obj#20 (m_raytracingOutput)	D3D12 Resource
obj#21 (m_descriptorHeap)	D3D12 Descriptor Heap
obj#22 (HitGroupShaderTable)	D3D12 Resource
obj#23 (MissShaderTable)	D3D12 Resource
obj#24 (RayGenShaderTable)	D3D12 Resource
obj#25	D3D12 Pipeline State
obj#26 (Render target 1)	D3D12 SwapChain Buffer Resource

Pipeline

Filter (Ctrl+E) X

Global ID 3 | | | | | 32% | | | | |

CBV 0 : g_sceneCB

SRV Buffer [0, space=214743647] : HitGroupShaderTable

SRV Buffer 1 : Indices

SRV Buffer [1, space=214743647] : MissShaderTable : MissShaderTable

SRV Buffer 2 : Vertices

SRV Buffer [2, space=214743647] : RayGenShaderTable : RayGenShaderTable

SRV Texture 3 : Texture buffer resource mario.png Diffuse

UAV Texture 0 : m_raytracingOutput : RenderTarget

UAV Buffer [2, space=214743648] : BottomLevelAccelerationStructure

UAV Buffer [3, space=214743648] : TopLevelAccelerationStructure

Static Sampler 0 : s1

Root Constants [0, space=214743647] : Constants

Root Constants [1, space=214743647] : AccelerationStructure



Visualization

Properties

Visualization Image

Format R8G8B1

Aspect Ratio 100% (1)

Histogram [0,1]

R 0 1

G 0 1

Pixel Details

Coordinates

X 0

Y 0

U 0.000390625

V 0.0006944444444444

Channels 0x

R 0.00000

G 1.00000

B 0.40000

A 1.00000

Zoom

Upcoming Goals

MILESTONE II

Path Tracing set up

Scene loading

Diffuse/specular shading

AA & DOF

MILESTONE III

Fresnel & Schlick

Dispersion

Subsurface scattering

Other cool effects

Another application of raytracing (?)