Depth of Field Shader Architecture Diagram

Egor Fesenko | May 1, 2021

Camera DOF Script

Source Texture

Color (RGBA) of pixels
Part of the Material

CoC Texture

CoC Value of pixels
Part of the Material

DoF0 Texture

Color (RGB) after full DoF
Alpha value is equal to bg and fx mix
interpolation coeff
Part of the Material

DoF1 Texture

Color (RGB) after DoF without downsampling

Depth of Field Shader

Circle Of Confusion Pass

Texture: Source
RenderTexture: CoC

Gets CoC value based on Depth Map
Returns value of CoC

Pre-Filter Pass

Texture: Source
RenderTexture: DoF0

Downsamples Source and CoC textures
Gets "average" color of downsampled texel
Gets extreme CoC of texel

Pre-Filter Pass

Texture: DoF0
RenderTexture: DoF1

Uses disk kernel to get influence level of the
texel on foreground and background
Calculates the texel's color after all kernel's
offsets influence

Post-Filter Pass

Texture: DoF1
RenderTexture: DoF0

Downsamples DoF texture, getting Bokeh

Combine Pass

Texture: Source
RenderTexture: Destination

Gets final color of pixel
Recombines background and foreground