Contents

UGUIImageShaderPack

0. Introduction and Set up

0.0 Introduction to UGUIImageShaderPack

I write some shader for UGUI Image-Component, these shaders can create some image effect. I will explain detaily those effects and parments in each shader.

0.1 Support Platform

Platform:

Android,

IOS,
Windows

Graphic API:

OpenGL ES 2.0+
Metal
DirectX 9 +

0.2 How to use those materials

All image-materials is in UIMaterials fold, UIStaticMaterials fold contains all static effect and UIDynamicMaterials contains all dynamic materials.

Use materials is very simple, you just to drag the material you want to Image-Component's material slot. I will explain follows:

First explain concepts: As dipicted in figure 0.1, the figure explain material and image-component's material slot.

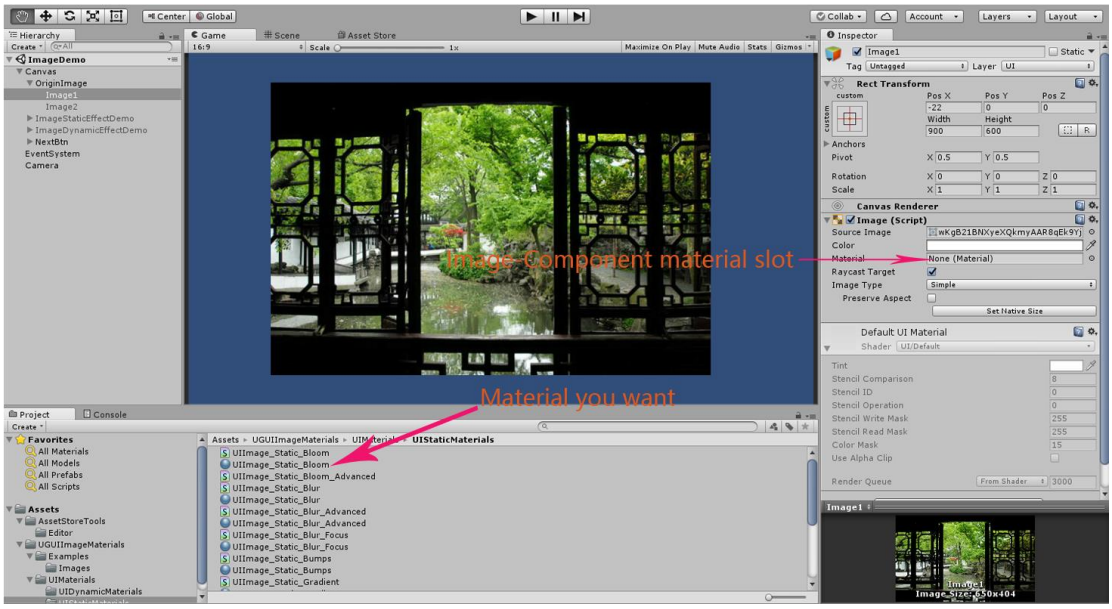

Figure 0.1 image-component layout.

The next step,you need to drag the material to image-component's material slot. As dipicted in figure 0.2,then the material's effect on image is obvious. The scene out of the window is bloomed.

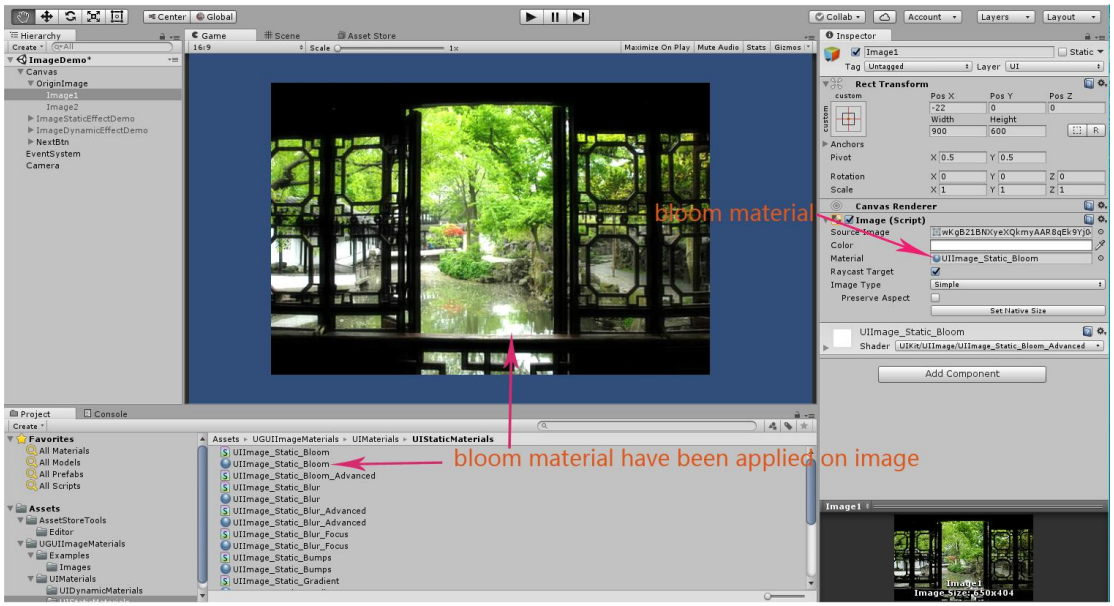

Figure 0.2 material apply on image-component.

1. Static Effect Materials

1.0 Introduction to static materials

Static materials will create constant effect and will not change uv texture or pixel in image with time. So you only can change parments on shader for every material. Those material's effect introduced as follows:

UIImage_Static_Gray (convert rgb model to gray image)

UIImage_Static_Gradient (blend color with image color, and create gradient effect)

UIImage_Static_Bumps (create bump effect on image)

UIImage_Static_Blur (blur image with 3x3 Gaussian blur kernel)
UIImage_Static_Blur_Advanced (blur image with 7x7 Gaussian blur kernel, but with two blur pass)
UIImage_Static_Blur_Focus (you can blur image in circle area or reverse on image)

UIImage_Static_SpotLight (highlight one circle area or reverse on image)
UIImage_Static_Sharp (Sharp one image)

UIImage_Static_Relief (Create an relief effect on image)

UIImage_Static_Outline_Alpha (Draw image's outline by check alpha outline on image, UIImage_Static_Outline_Alpha_Decay material darw image but will decay

origin image, UIImage_Static_Outline_Alpha_NoDecay will not decay origin image)

UIImage_Static_Bloom (bloom an image)

I will detail of those material and shader follows:

1.1 UIImage_Static_Gray

The material just convert one image's rgb to gray color. Effect is follows:

Figure 1.1 gray effect

The shader parments:

Convert Factors

The factors used to convert rgb model to gray color.(default is (76,150,29,255), if you don't have more better factors, please don't change the factors.)

Gray Factor

The gray level, image will become more gray if close to 1, will become closed to origint image if close to 0.

1.2 UIImage_Static_Gradient

Blend color with image, and create gradient effect. Effect is follows:

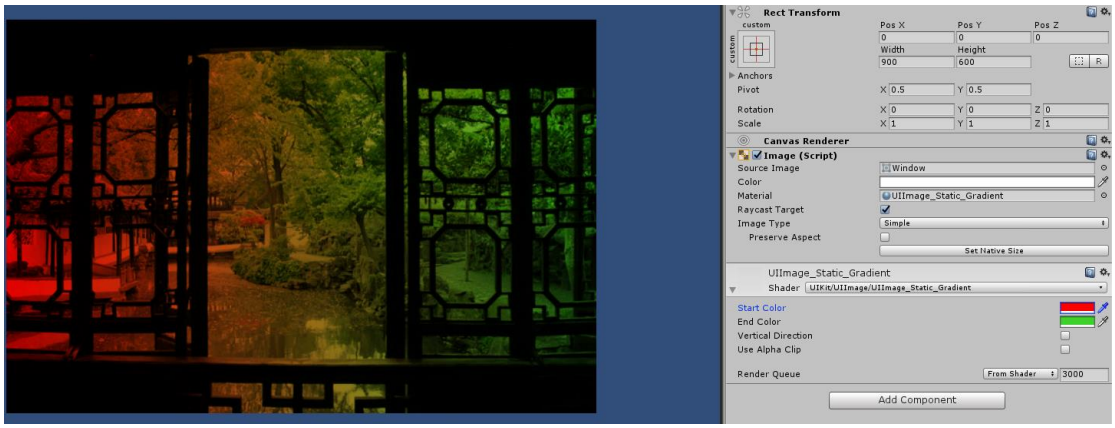

Figure 1.2 gradient effect

The shader parments:

Vertical Direction

Whether gradient on vertical, if value is on, the gradient will affect on vertical direction, else gradient will affect on horizontal direction. The example is horizontal effect, the value is off.

Start Color

The color is left color if vertical-direction toggle is on, else is bottom color if vertical-direction toggle is on.

End Color

The color is right color if vertical-direction toggle is on, else is top color if vertical-direction toggle is off.

1.3 UIImage_Static_Bumps

Create an concave or convex effect on image, this is a toy effect.Effect is follows:

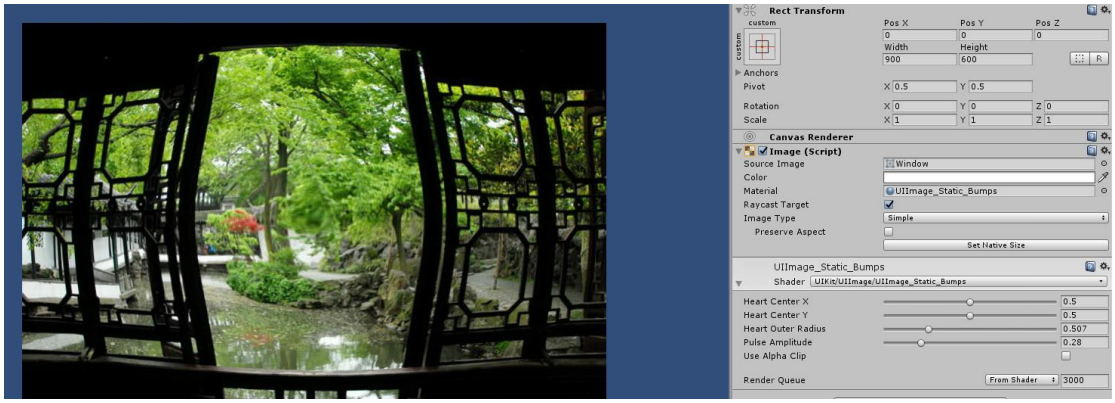

Figure 1.3 bump effect

The shader parments:

Heart Center X

The effect's affected area is circle, the is circle's center X coordinate.

Heart Center Y

The effect's affected area is circle, the is circle's center Y coordinate.

Heart Outer Radius

The effect's affected area is circle, the is circle's radius.

Pulse Amplitude

The bump's amplitude.

1.4 UIImage_Static_Blur (Normal, Advanced, Focus)

The three materials are blur effect.
UIImage_Static_Blur shader will blur image with 3x3 Gaussian blur knernel, the shader use only one pass to blur. Because Unity only support maximum 15 sample one texture, this maybe the max kernel with one pass.
UIImage_Static_Blur_Advanced shader will blur image with 7x7 Gaussian blur knernel, the shader use two pass to blur. Because the shader use _GrabTexture, the performance is low.
UIImage_Static_Blur_Focus shader will blur image's circle area. The shader use 3x3 Gaussian blur knernel, only one pass.

UIImage_Static_Blur and UIImage_Static_Blur_Advanced effect is follows:

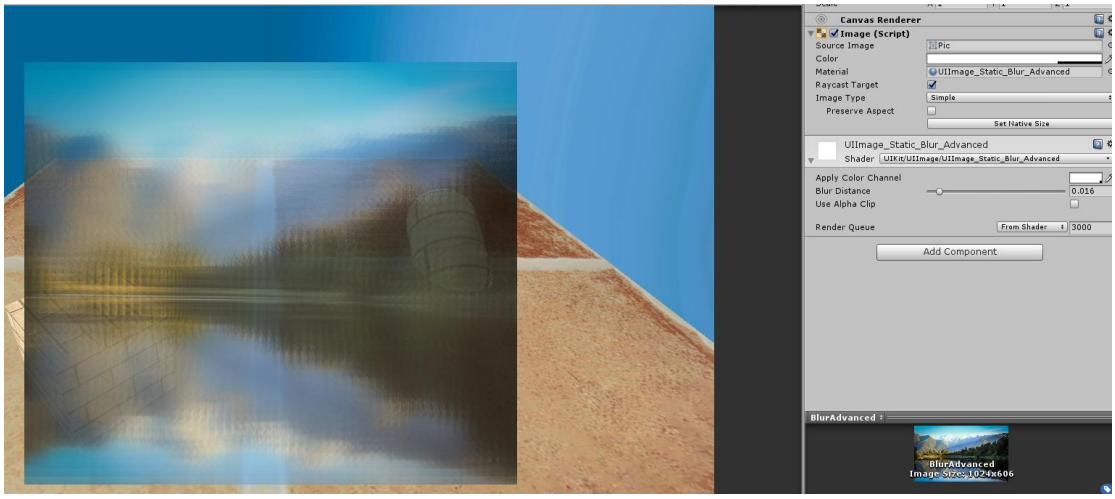

Figure 1.4 Blur effect

The shader parments:

Apply Color Channel

The blur will apply on R,G,B,A respectively

Blur Distance

Blur will sample one texture, this is sample distance on texture.

UIImage_Static_Blur_Focus effect is follows:

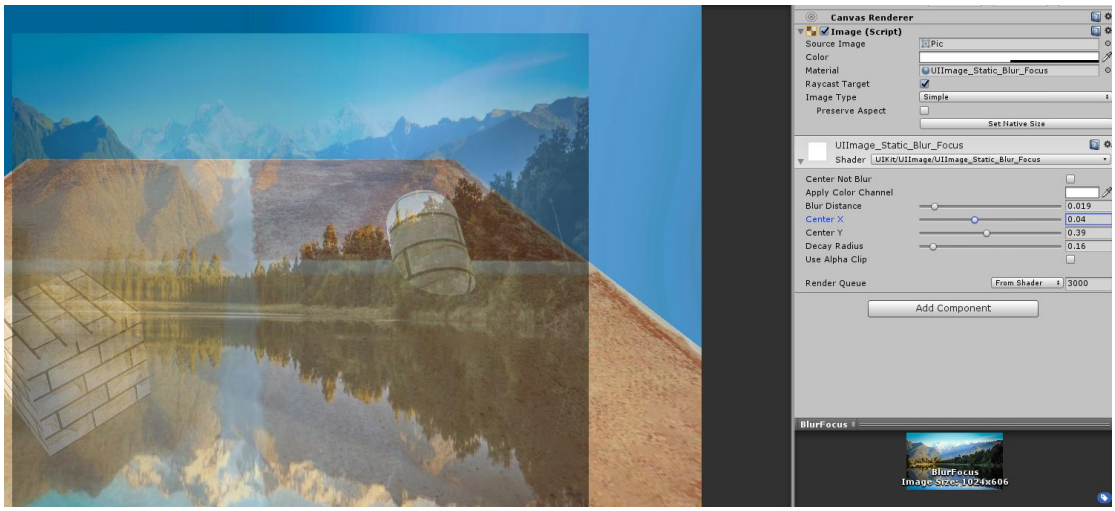

Figure 1.5 Blur focus effect

Center Not Blur

The blur will affact inside circle if the toggle is on, else will affact outside of circle if the toggle is off.

Blur Distance

Blur will sample one texture, this is sample distance on texture.

Center X

The blur circle’s center X coordinate.

Center Y

The blur circle’s center Y coordinate.

Decay Radius

The blur circle’s radius.

1.5 UIImage_Static_SpotLight

The shader will create an spotlight effect on image.Effect is follows:

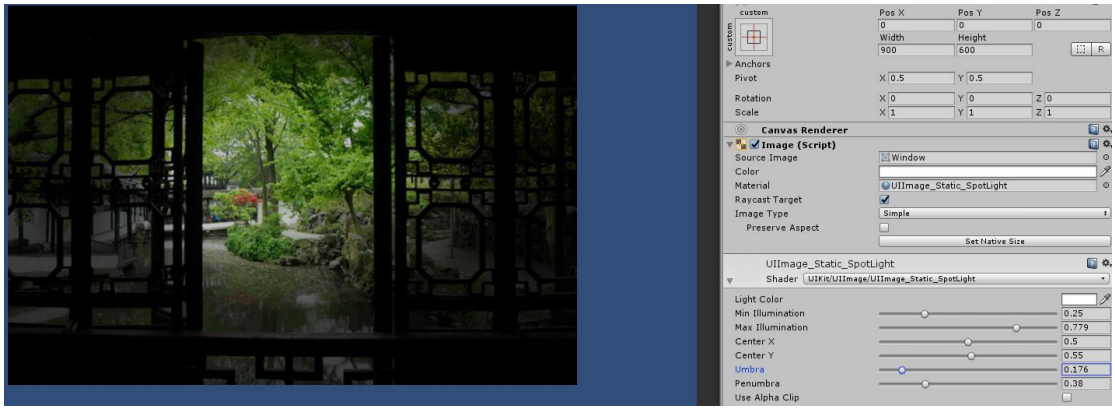

Figure 1.6 Spotlight effect

The shader parments:

Light Color

The spotlight’s blend color. Default is white.

Min Illumination

The spotlight’s min illumination, this is the darkest color.

Max Illumination

The spotlight’s min illumination, this is the brightest color.

Center X

The spotlight’s center X coordinate.

Center Y

The spotlight’s center Y coordinate.

Umbra

The spotlight’s umbra radius. The value is always less then penumbra.

Penumbra

The spotlight’s umbra radius. The value is always greater then umbra.

1.6 UIImage_Static_Sharp

The material will sharp one image with 3x3 Laplacian Kernel, the kernel is isotropic, so is better for most images. Effect is follows:

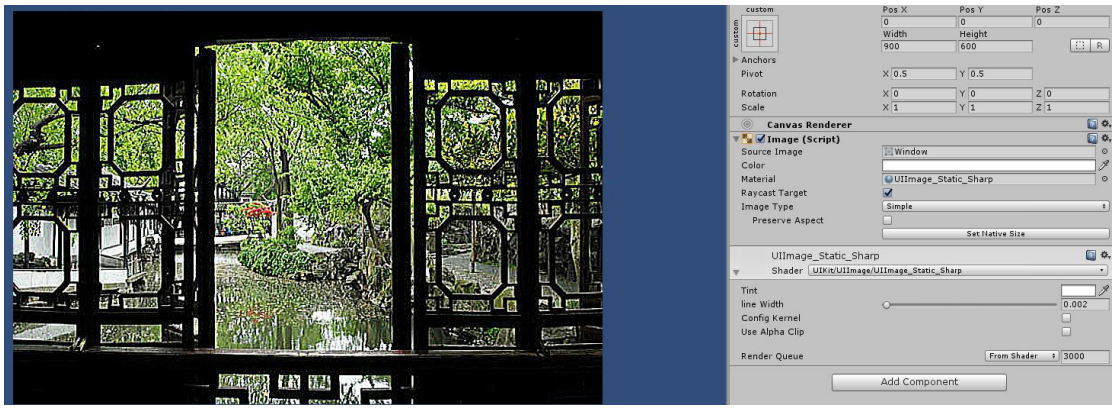

Figure 1.7 Sharp effect

The line on tree is obvious.
The shader parments:

line Width

The sharp process is by sample texture, this is texture sample distance.

1.7 UIImage_Static_Relief

The shader create relief effect. Effect is follows:

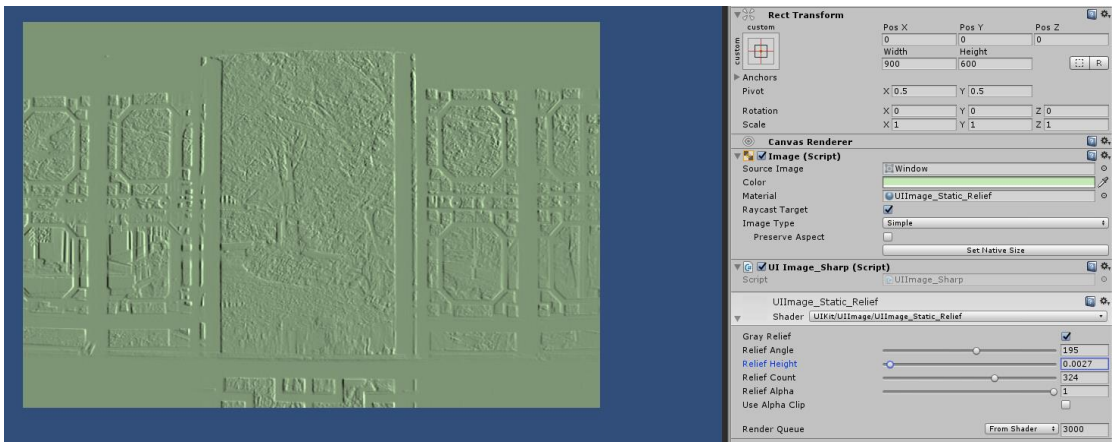

Figure 1.8 Sharp effect

The shader parments：

Gray Relief

The toggle is used to controll whether change relief to gray, default is on.

Relief Angle

Relief ‘s offset direction. Range is 0 to 360.

Relief Height

The relief’s bump height.

Relief Count

When Gray Relief is valid, the gray level will be splited by the parments.

Relief Alpha

Relief’s alpha.

1.8 UIImage_Static_Outline_Alpha

The shader will outline image according to image’s alpha value.
UIImage_Static_Outline_Alpha_Decay material will decay origint image.
UIImage_Static_Outline_Alpha_NoDecay material not decay origint image.
Effects is follows:

Figure 1.9 Image outline

The left is origin image, Middle image is render by UIImage_Static_Outline_Alpha_Decay material, right image is render by UIImage_Static_Outline_Alpha_NoDecay material. The apparence is obvious, decay material have more better effect but will decay origin image.

The shader parments:

Decay Image

Is the been in decay model, UIImage_Static_Outline_Alpha_Decay material's toggle is on. UIImage_Static_Outline_Alpha_NoDecay material's toggle is off.

Outline Color

The outline color.

Outline Width

The outline's width.

1.9 UIImage_Static_Bloom

The material is to bloom one image. There are two shader can used to bloom image: UIImage_Static_Bloom and UIImage_Static_Bloom_Advanced:
The only difference between advanced bloom and bloom is whether use GrabPass Texture. The UIImage_Static_Bloom use only one static screen shot picture as bloom blend texture. But UIImage_Static_Bloom_Advanced use real time bloom blend texture. These effect is all the same. The two summed as follows:
UIImage_Static_Bloom: better performance, but not real time.
UIImage_Static_Bloom: bad performance, but eal time.
I suggest you use UIImage_Static_Bloom in you game.
Effects is follow:

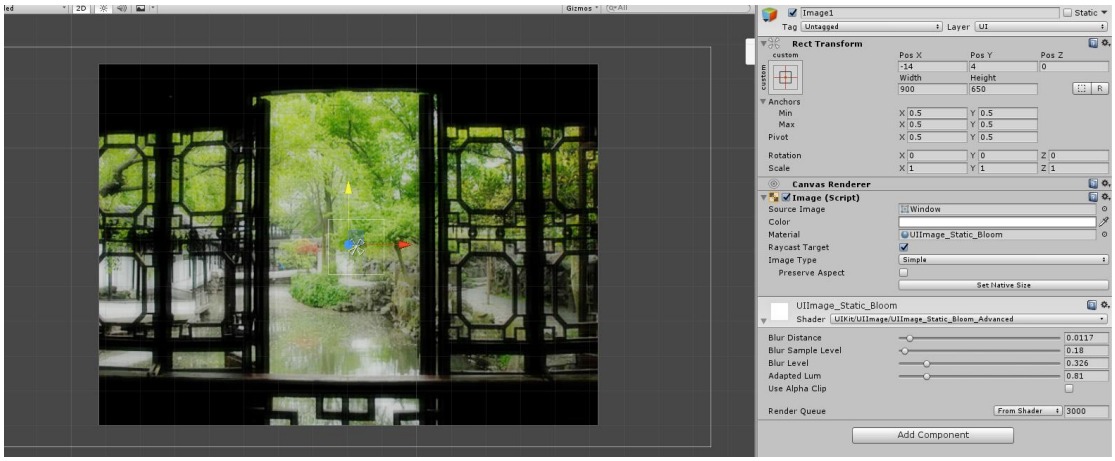

Figure 1.10 Image bloom

The shader is two pass render. The first pass blur origin image. The second pass blend origin image and blur image.

The shader parments:

Blur Distance

First pass, blur image’s sample distance on texture.

Blur Sample Level

Second pass: blur image is mip image, this is blur image’s sample mip level.

Blend Factor

Second pass: the factor of blend origin image and blur image. The more high the value, the more bloom effect on image.

Adapted Lum

Tone mapping is important after blend bloom image and origin image. The parment is to controll tone mapping illumination.

2.Dynamic Effect Materials

2.0. Introduction to dynamic materials

Dynamic materials diffrenent from static materials, these materials can create dyanmic effect with time pass.
Those materials introduced in follows:
UIImage_Dynamic_Wave_Direction (Image will create distorted sin wave on horizonal or vertical direction)
UIImage_Dynamic_Wave_Circle (Image will create distorted sin wave on circle divergence direction)

I will detail those materials in follows sections.

2.1 UIImage_Dynamic_Wave_Direction

The shader create direction sin wave on horizontal or vertical direction. Effect screen shot is follows:

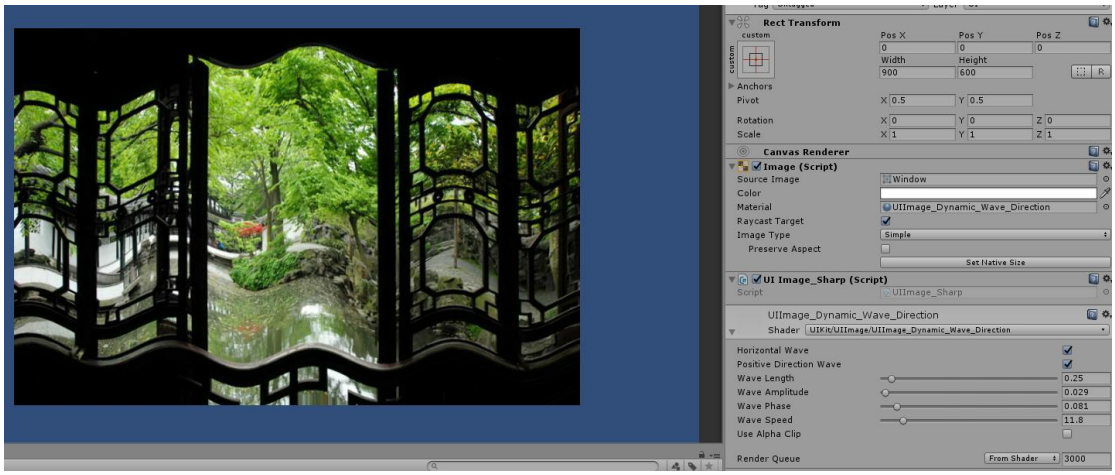

Figure 1.10 Image direction wave

The effect id dyanmic, the vedio about the wave is on wesite:

The shader parments:

Horizontal Wave

If the toggle is on, the wave is horizontal, else is vertical.

Positive Direction Wave

Is the wave’s direction is positive.

Wave Length

Wave length.

Wave Amplitude

Wave amplitude

Wave Phase

Wave phase.

Wave Speed

Wave speed.

2.2 UIImage_Dynamic_Wave_Circle

The shader create circle divergence-wave. Effect’s screen shot is follows:

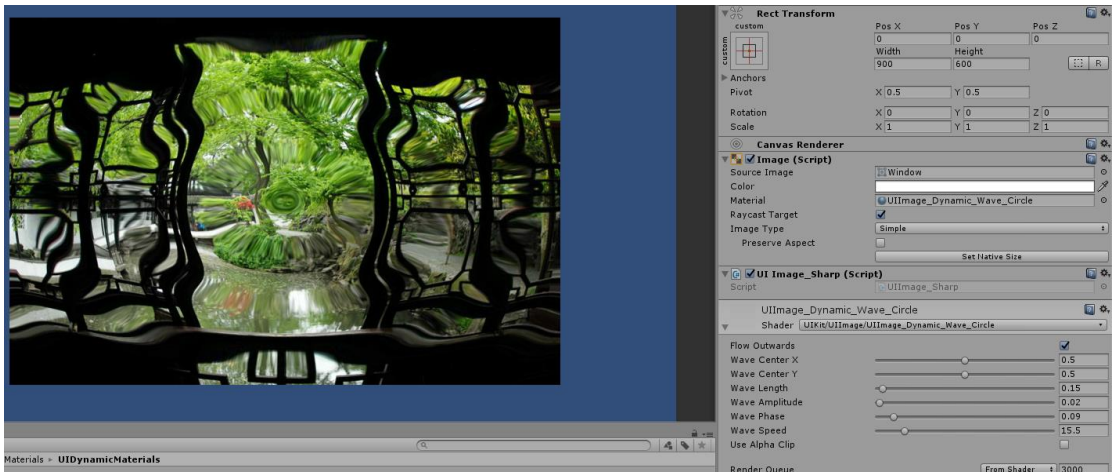

Figure 1.11 Image divergence-wave

The effect’s website is

The shader parments:

Flow Outwards

Is the direction is outwards. The dirction is outwards when toggle is on.

Wave Center X

Wave center X coordinate.

Wave Center Y

Wave center Y coordinate.

Wave Length

Wave length.

Wave Amplitude

Wave amplitude.

Wave Phase

Wave phase.

Wave Speed

Wave speed.