Contour Line Eff Documentation

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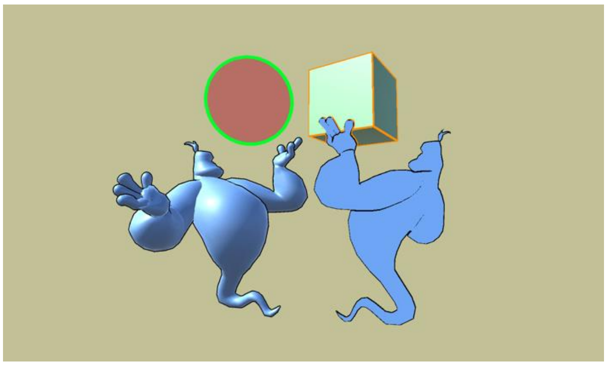

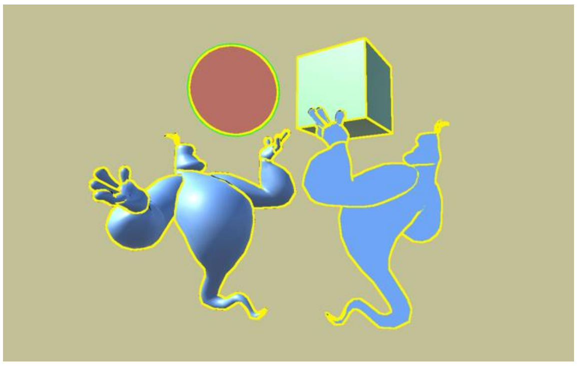

Features

- Support four different types of object-space contour outline and one image-space contour outline. The above image on the left shows four object-space contour outlines, which, start from the upper-left one clockwise, respectively are the **vertex_unlit**, **fragment_surface**, **fragment_unlit**, and **vertex_surface**. The above image on the right shows the image-space contour outline.
- All types of contour outlines are independent of the depth or the distance of the camera.
- The model, **Genie**, inspired by Disney's Aladdin, is created by me in **Blender** to demonstrate the usage of these contour shaders in real-time stylized rendering.

Shader Properties

Common Settings

Contour Thickness	The thickness of the contour
Contour Color	The color of the contour

Fragment Contour Settings

Depth Threshold	The threshold for detecting edges based on the differences in depth
Normal Threshold	The threshold for detecting edges based on the differences in normal

Image Space (RenderContour.cs)

Shader	Assign the image-space contour shader from the project folder
Use Image Effect	Turn the image-space shader on/off
Depth Threshold	Same as the fragment contour
Normal Threshold	Same as the fragment contour

Unlit Settings

Color	The color tint for the main texture.
Texture	Unlit main texture

Surface Settings

Color	The color tint for main texture.
Albedo (RGB)	Surface main texture
Smoothness	Control the microsurface detail of the surface
Metallic	Control the metallic reflection of the surface

Implementation Details

- The ***RenderContour.cs*** is also essential for object-space fragment contours because it allows the camera to output the **_CameraDepthNormalsTexture**.
- The edges are detected with **"the Roberts Cross"** in the fragment shader.
- The **"inverted hull"** technique is utilized in the vertex shader contours. In this case the scaling is done after the vertices are transformed into clip space, so that the thickness of the contour outlines is independent of the distance of the camera. However, this implementation has trouble dealing with the sharp edges (i.e. the cubes), which will "break" the outlines.