

Candera Engine 3D

Renderer 3D Statistics

Candera's 3D renderer statistics now keep statistics about vertex buffers, shaders, cubemaps, direct textures, render camera calls, and render state cache hit/miss rates (if enabled).

The renderer statistics overlay has also been extended to support the new values.

Canvas Text Outline

The canvas text has been extended to support outlines.

Texel Size Auto Uniform

New auto uniforms have been added, called "u_TexelSize", "u_TexelSize1", .. "u_TexelSize8", which pass a $\text{vec2}(1.0/(\text{textureWidth} \times 4), 1.0/(\text{textureHeight} \times 4))$ to the uniform corresponding with the texture at the given unit. The only purpose for this is to support the outline reference shader.

Asset References

A scene can now reference assets that are not referenced by scene graph objects, and upload/unload them whenever the scene is uploaded/unloaded.

Renderer Functions

New functions were introduced in the [Renderer](#) to support implementation of post processing effects. Render targets can now be retrieved from the [Renderer](#) for temporary use, while a Blit function provides a convenient way to apply a shader to a full screen quad.
