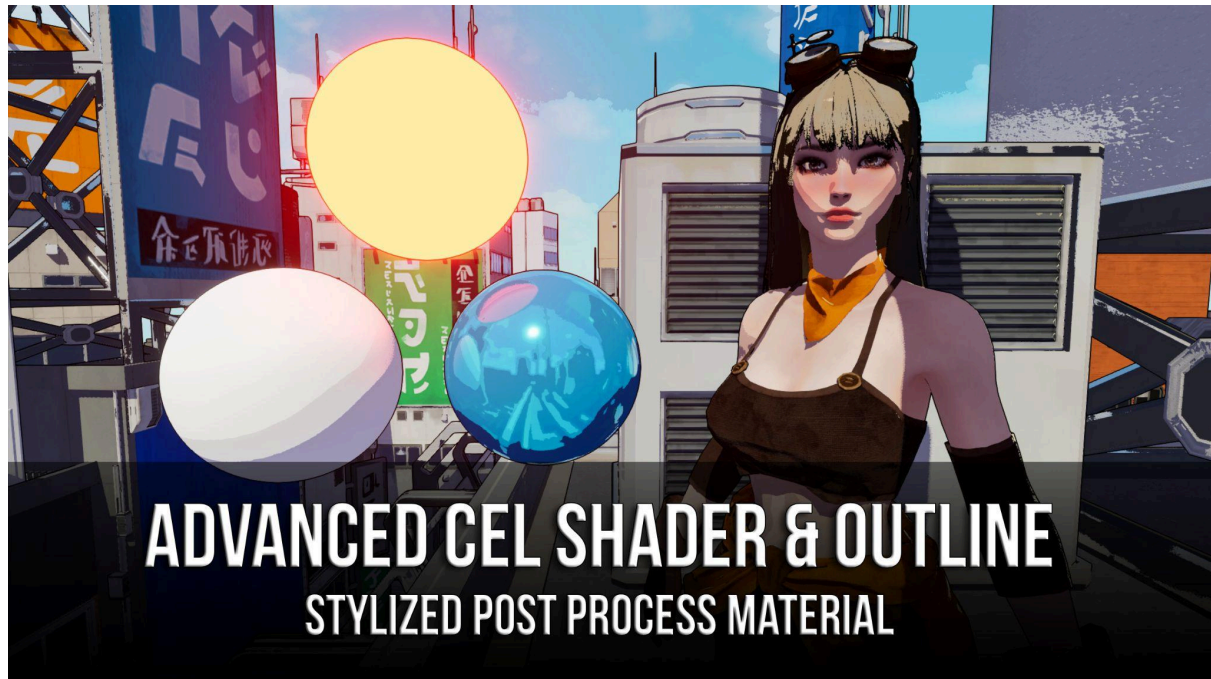


Advanced Cel Shader & Outline

Stylized Post Process Material

Documentation



1. Implementation (Getting Started).....	2
2. Core Render Logic & Automated Masking.....	2
3. Material Parameters.....	3
4. Included Presets (Material Instances).....	3
5. Support.....	4

1. Implementation (Getting Started)

The stylized cel-shading and outline effects are generated via a single master post-process material ([M_AdvancedCelShader_PP](#)). It utilizes optimized HLSL custom nodes to ensure high performance.

1. Select your **Post Process Volume** in the level (ensure "Infinite Extent (Unbound)" is checked if you want it applied globally).
2. Go to the Details Panel and search for **Rendering Features -> Post Process Materials**.
3. Click the **+** icon to add an array element.
4. Choose **Asset Reference** and assign one of the included Material Instances (e.g., [MI_CelShader_PP_3_Tone_Standard](#)).

Note: Fixing Pale Characters / MetaHumans

When applying the Cel Shader to MetaHumans or other custom characters, you might notice that they appear unusually pale or washed out. This is a common issue because Cel Shaders do not interact properly with complex shading models like Subsurface or Eye.

To fix this, the character's materials need to use standard shading. Depending on your Unreal Engine version, many MetaHuman materials (such as the body and head skin) offer a quick fix: simply open the character's Material Instances and enable the "Use Simple Shading" parameter.

If that option is not available, or if you are using non-MetaHuman characters, you will need to edit the Master Materials directly. Open all relevant Master Materials for your character, navigate to the Details Panel, and change the Shading Model to "Default Lit". Once you apply and save these changes, the Cel Shader will look exactly as intended.

2. Core Render Logic & Automated Masking

Unlike standard cel shaders, this material intelligently routes different surfaces using the G-Buffer and Scene Depth, eliminating the need for complex Custom Stencil setups.

- **Light Color Rescue:** Extracts the pure light color (Point/Spot/Directional) and re-multiplies it after the banding process. This preserves accurate colored lighting and bounce light without turning it into grayscale steps.
- **Glossy & Metallic Routing:** Metallic and highly reflective surfaces are automatically detected via the G-Buffer. Instead of standard flat shading, they are processed using Luminance Posterization to retain their reflective properties.
- **Sky Detection:** The sky is isolated using a [SceneDepth](#) cutoff. It bypasses the standard cel-shading and receives its own luminance posterization to prevent black sky artifacts.
- **Emissive Exclusion:** Pixels with a luminance value greater than 1.0 are automatically excluded from the cel-shading pass, preserving the native Unreal Engine bloom.

- **Rim Light Floor Mask:** A Z-Normal based mask that excludes the ground plane from Fresnel rim lighting.
 - **Outlines:** Integrated depth and normal outlines.
-

3. Material Parameters

Open any Material Instance to customize the visual output. The parameters are divided into the following groups:

Group: 01 Global Color

- **GlobalSaturation:** Adjusts the overall color saturation of the scene.
- **GlobalContrast:** Controls the global contrast.

Group: 02 Cel Shading

- **ShadingSteps:** Defines the number of hard shading bands/tones (e.g., 2, 3, or 5).
- **ShadingFalloff:** Controls the hardness of the shadow edges.
- **ShadingSmoothness:** Blends the steps for a slightly softer transition.
- **LightAttenuation:** Adjusts how strongly the light affects the shaded areas.
- **ShadowTint:** Adds a specific color tint to the darker shadow regions.

Group: 03 Rim Light

- **RimColor:** Defines the color of the Fresnel edge highlight.
- **RimThickness:** Controls the width of the rim light.
- **RimThreshold:** Determines the intensity required for the rim light to appear.
- **RimFloorMask:** Adjusts the strength of the Z-Normal mask to ignore flat floors.

Group: 04 Material Masks

- **SkySteps:** Sets the number of banding steps specifically applied to the sky.
- **SkyDepthCutoff:** Defines the distance at which the scene is treated as the sky.
- **GlossyThreshold:** Determines the roughness/metallic threshold at which a surface switches to Luminance Posterization.

Group: 05 Outlines

- **UseOutlines:** Boolean toggle to enable or disable the integrated outline pass.
 - **OutlineColor:** Sets the color of the generated outlines.
 - *(Includes additional parameters for Outline Thickness, Depth Threshold, and Normal Threshold).*
-

4. Included Presets (Material Instances)

The pack includes 6 pre-configured Material Instances for immediate use:

- **MI_CelShader_PP_3_Tone_Standard**: Balanced base setting for modern anime/toon projects with clean highlight, midtone, and shadow separation.
- **MI_CelShader_PP_2_Tone_Hard**: Strict binary lighting for maximum contrast, ideal for 90s anime or dramatic comic styles.
- **MI_CelShader_PP_5_Tone_Soft**: Softer shading with five steps for a painterly, watercolor-like transition.
- **MI_CelShader_PP_3_Tone_WithoutOutline**: Classic 3-tone lighting with the post-process outline pass disabled.
- **MI_CelShader_PP_Grayscale**: Fully desaturated variant for noir aesthetics or manga styles.
- **MI_CelShader_PP_FlatLit**: Overrides light multiplication for a nearly shadowless, flat appearance suitable for 3D UI or abstract art styles.

5. Support

If you have any questions, please send an email to support@geamgames.com