

Post Processing

Video Game Graphics AD-011

Purpose

There is more involved in making an image than simply portraying objects. Just as a photographer adjusts their final result, we may also wish to modify image after objects are rendered.

Adding film grain, vignetting, and other subtle changes to the rendered image can make a rendering look more convincing. Alternately, more dramatic effects such as lens flares and bloom can convey a sense of drama. Portraying depth of field and motion blur can increase realism and be used for artistic effect.

Technique

Graphics accelerators have generally been concerned with creating artificial scenes from geometry and shading descriptions. Image processing is different, where we take an input image and modify it in various ways. The combination of programmable shaders and the ability to use an output image as an input texture opened the way to using the GPU for a wide variety of image processing effects.

Common post-processing effects

- Depth of field
- Color correction
- Bloom
- Ambient Occlusion (SSAO)
- Screen space reflections
- Lens flares
- Motion blur
- Film grain (Noise)
- Chromatic aberration
- Antialiasing (FXAA)