PxrDirt

PxrDirt renders local geometric occlusion. This is useful for applying shading effects to nooks and crevices.

Parameters

Occluded and Unoccluded

Resulting colors for occluded and unoccluded shading.

A traditional ambient occlusion effect can be accomplished by setting the occluded color to black and unoccluded color to white.

Num Samples
Controls the number of occlusion samples per camera hit point. More samples reduces the noise at the cost of increased render time.

Sample Distribution

Possible values are uniform and cosine (Lambertian).
## Distribution Cosine

<table>
<thead>
<tr>
<th>Description</th>
<th>Uniform</th>
<th>Cosine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniform</td>
<td>Rays are not weighted in any particular direction in the hemisphere above the shading point.</td>
<td>Cosine distribution is a commonly used to render ambient occlusion.</td>
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</tbody>
</table>

### Cosine Spread

Sample spread of rays when using cosine distribution. A value of 1.0 gives a perfect Lambertian distribution.

- **Cosine Spread = 0.5**
- **Cosine Spread = 1.0**
- **Cosine Spread = 2.0**
Falloff

Falloff can be used to control the softness of the occlusion effect.

Max Distance

The max distance at which objects may occlude. Zero is infinite (all objects occlude).
Direction

Trace rays in the direction of the surface normal (*outside*), inverse to the normal (*inside*), or in *both* directions.
Bias Normal

Add a directional bias to the normal vector. Values must be specified in world space.