Page Curling in WebGL

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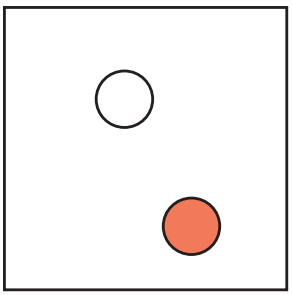

Figure 1: *Lookit! Lookit!*

Abstract

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Citations can be done this way [Jobson et al. 1995] or this more concise way [1995], depending upon the application.

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CR Categories: K.6.1 [Management of Computing and Information Systems]: Project and People Management—Life Cycle; K.7.m [The Computing Profession]: Miscellaneous—Ethics

Keywords: webgl

1 Introduction

Our application implements the page turning algorithm specified by [1].

2 Exposition

2.1 Page Curling

Page curling is a combination of a parameterized transformation approximating a cone of varying width and position and a rotation about the y-axis.

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2.2 Two-Sided Textures

A single mesh is used for each page, which has a different texture for each side. To determine the correct texture for a given fragment, a normal vector is passed for each vertex.

Singe each page is a parameterized plane, the vertex shader can calculate the position of vertices a small δ in either direction.

The normal vector is passed to the fragment shader, which determines if the normal is facing toward or away from the camera and picks the appropriate texture.

2.3 Queueing

Pages sit in a stack on either side of the active turning page, and are raised into the turning position as needed.

$$\sum_{j=1}^{z} j = \frac{z(z+1)}{2} \tag{1}$$

$$\begin{aligned} x &\ll y_1 + \cdots + y_n && (2)\\ &\leq z && (3) \end{aligned}$$

3 Conclusion

WebGL offers a powerful environment for 3D presentation on the web. While libraries such as three.js can offer significant advantages, implementation can still be challenging.

Acknowledgements

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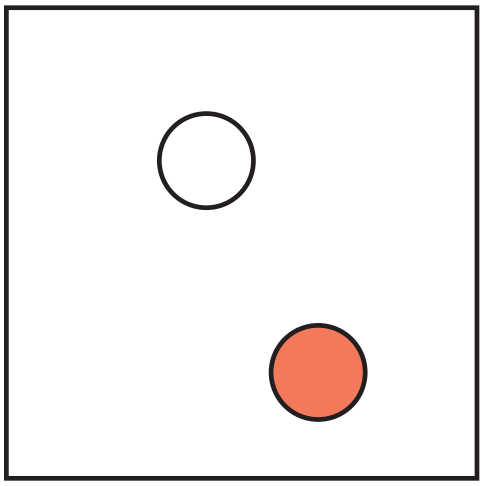

Figure 2: *Sample illustration.*

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