COSC 4306
Final Report

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Abstract

Non-photorealistic rendering is a combination of computer graphics and artistic techniques used in a variety of applications to emphasize information from a photorealistic rendering or present it in a different style. This can be done either through artistic techniques that create a particular mood, or by emphasizing details of the image/model, or both.

Our goal is to create a system and algorithm to render 3D models in a style similar to 2D animation using OpenGL and shaders. Transforming the rendered model will be achieved through cel shading, lighting effects, modifying textures, and adding contour lines to the image. We will also examine the effect of applying these transformations to the model in both the vertex and fragment shaders.

Introduction

Prior and related work

Description

Cell shading

Suggestive contours

Outlines

Implementation

The described features were implemented into a real-time rendering system. The system itself was written in OpenGL3. Specifically, we used LWJGL's implementation of OpenGL. We took advantage of vertex and fragment shaders that OpenGL3 requires to be used.

Experimental results

Conclusions

Bibliography

[1] Angel, E. Shreiner, D. (2012). *Interactive Computer Graphics: A top-down approach using OpenGL*. Pearson.