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Prof. Bailey

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Midterm Project Update

Title: Adobe Raytracing Experiment: Pixel Bender

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Course: Computer Graphics II – 4003-762

Instructor: Professor Bailey

URL: http://www.sixpixelperiod.com/2008_2/CG2/ARE/

The goal of this project is to write a distributed raytracer, featuring soft shadows and depth of field effects, using Adobe Pixel Bender. Pixel Bender is a shading language toolkit that runs a given shading function over every pixel in a source image or region. The benefit to Pixel Bender is it performs these calculations in parallel, using the graphics card and/or multi-core processors, resulting in impressive framerates. With luck, my distributed raytracer will be able to run realtime.

I will be following the same steps as our class assignments; starting with a flat-shaded image and progressively adding phong shading, procedural shading, reflection, refraction, and eventually distributed raytracing from soft shadows and depth of field. In four hours this afternoon I was able to learn the Pixel Bender API and re-implement our first checkpoint from the class assignments.

This project replaces my original idea of an Augmented Reality Experiment project (conveniently, I can use the same acronym for each!). I spent the better part of two weeks trying to understand the ARToolkit API, and while I felt I grasped the pipeline I was unable to get it to compile on my own machine. Thankfully the merciful Professor Bailey granted my request for a change of project, and I am now greatly enjoying my experiences with Pixel Bender.

I will continue to make progress as my other coursework allows. Fortunately the remaining checkpoints for our class assignment will also aid in this project, as I will be implementing those checkpoints alongside this one. My goal is to have the entire project completed by my February 18 presentation.