

# Rendering

CS 775: Advanced Computer Graphics - Assignment 1

Due Date: 20/2/2016

## 1 Description

In this assignment you will render a scene from your Star Wars Droid Animation your CS475/CS675 project using Pixar's PRMan.

## 2 To do

1. Learn how to use PRMan. Read the docs. Try out examples. Learn how to write scenes in the RIB format.
2. Convert one frame of your animation from the last assignment of CS475/CS675 into a rib file. This must contain both the droids and the environment. In order to do this, you can write out the absolute coordinates for various vertices that make up your droids and the scene in the RIB file format. Or if you want to write down the RIB file manually, you can do that too.
3. Now add scene elements to the scene that produce indirect illumination (colour bleeding) in the scene.
4. Add scene elements that create caustics.
5. Add area lights and soft shadows.
6. All textures must be reproduced. If you did not use any earlier, please add textures to appropriate surfaces.
7. Add at least one transparent and one metallic surface.
8. Render the scene with PRMan. You can use the point-based technique or the raytraced technique for GI. You can also use the new RIS interface if you want.
9. Render five different views of your scene by placing the camera in different locations.

10. Add effects like atmospheric effects, depth of field, motion blur to your scene to get extra bonus credits.

### **3 Method of Submission**

1. A Tar-Gzipped archive of the RIB file(s), shaders and textures has to be submitted. It should run using Non-Commercial PRMan v20.6.
2. A html report page on the assignment that should contain some details about what you implemented and all rendered images with descriptions of what they features they show.
3. A README file with references for sources of shaders, code and texture and how to generate the final image should be provided.
4. Submission will be through the submission portal, which will be enabled later.

### **4 Marking**

The assignment will be marked as follows:

- RIB scene with droids and scene - 60 marks
- Indirect illumination - 10 marks
- Caustics - 10 marks
- Area lights and Soft Shadows - 10 marks
- Textured Objects - 10 marks
- Transparent and Metallic surfaces - 20 marks
- HTML report with images of rendered results - 20 marks
- Maximum bonus credit - 20 marks
- Total : 140+20