COSC3000

COMPUTER GRAPHICS PROJECT PROPOSAL

Satellite Space Simulation

25^{th} April, 2023

1 Introduction

Space is a topic that is widely discussed and provides a range of opportunities for possible computer graphic visualisations. The following project shall explore in particular satellite orbit across space, providing an interactive and educational tool for individuals who are interested in this field.

2 Proposed Tools and Resources

In order to achieve this, the computer graphic simulation shall be completed using Blender. This is because Blender is a robust and easy-to-use tool, that can compute complex computer graphic animations. The first part of the project shall focus on creating a realistic satellite object. This shall be accomplished by exploring with various lighting and surface modeling techniques to create a realistic satellite, based on existing images.

Particularly, Blender obtains surface modeling features such as greebles, which shall be used to generate textured patterns on surfaces to provide a more realistic object. Along with applying reflective surface meshes, and combining various mesh objects to create a realistic satellite.

Additional features that shall be included, involve scene rendering to create a realistic earth and space scene. Then experimenting with camera manipulation techniques, in order to provide a perspective view of what a satellite orbitting space would appear as. Along with mouse motion capture, to animate the rotation and movement of the satellite object.

3 Concept Images

Figure 1: Concept Image 1 of Satellite and Scene Rendering

Figure 2: Concept Image 2 of Satellite and Scene Rendering