

Audio Driven Animation using Python Programming in Blender

Directed Study substitute for graduate Visual Effects Seminar, Fall 2011

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Objective:

The purpose of this project is first to create what is essentially a stylized music video that can be submitted to festivals across the country upon its completion. However, a major goal of this project is to achieve the majority of the animated elements through programming with Python. The milestones have therefore been divided and separated according to scripting achievements I hope to attain.

Goal: 1

Due: September 8th, 2011

Goal one is the successful completion of a script designed to add a primitive object and then keyframe and manipulate the object's transform properties.

Goal: 2

Due: September 15th, 2011

Goal two is the successful completion of a script designed to add a Generate and Deform modifier to an object, specifically a "Subdivision Surface" and "Simple Deform" modifier and keyframe the modifiers' values.

Goal: 3

Due: September 22nd, 2011

Goal two is the successful completion of a script designed to add a Tracking and Relationship constraint to an object, specifically a "Track To" and "Follow Path" constraint and keyframe the constraints' values.

Goal: 4

Due: September 29th, 2011

Goal four is the successful completion of a script designed to add simple color materials and textures to an object, specifically a "Cloud" and "Image" texture with the "Image" coming from a pathway outside of the Blender program.

Goal: 5

Due: October 6th, 2011

Goal five is the successful completion of a script designed to arrange objects into geometrical shapes, specifically a circle, a spiraling circle, and a grid. These arrays should be controllable via any of the properties learned from the previous goals as either an entire group or via the individual components.

Goal: 6

Due: October 27th, 2001

Goal six is the successful completion of a script designed to analyze an audio file and generate keyframes for any keyframable property based on the audio levels or frequency of the file. A current feature within Blender allows for a similar effect, but is severely lacking in controllability. The keyframes created by the current add-on are baked and as such cannot be altered once created. Also, the controlling variables are only available to be adjusted prior to baking. The script I purpose should have keyframe manipulability once generated. This interface should have the ability to browse and select files, control attack and recovery times, control frequency and level selection, and allow for forward and backward “stepping” all before and after the keyframes are created. A Graphical User Interface will also be designed and implemented within Blender to allow easy access and controllability to the script’s functions.

Goal: 7

Due: November 3rd, 2011

This week will see the creation of several short, low quality test animations to prove the functionality of the scripts separately and in conjunction with one another.

Goal: 8

Due: November 10th, 2011

This week will see the completion of necessary pre-visualization material which may include but is not limited to sketches, storyboards, animatics, or sample renders.

Goal: 9

Due: December 1st, 2011

Goal nine is the production phase, which will include modeling, rigging, texturing, and test renders if necessary. Every part of this phase that can be completed with the use of scripting equaling that of my skill level will be done in that fashion.

Goal: 10

Due: December 15th, 2011

This final goal will see the rendering of the final animations to then be edited and have any final effects placed. The 15th of December should see a digital copy of the final product ready to be submitted.

If at any point the progress is proceeding ahead of the outlined schedule then the overall timeline will be advanced accordingly.