

sdmay18-02: Augmented Reality Mechanical Design Solution

Week 5 Report

October 9 - October 20

Team Members

Bhimesh S. Chauhan — *Client Coordinator, Project Manager, Backend and Pipelining Team*

Vaibhav Malhotra — *Backend Developer*

Cole Chapin — *UI Design Engineer*

Ryan Luck — *UX Engineer*

Cal-Vert Wong — *Pipelining*

Summary of Progress this Report

We have following issues addressed this week:

1. The sub team responsible for parsing stl file completed their parser. They parsed to stl file for ascii values which in turn was parsed for the coordinates for the 3D CAD model.
 2. The second sub team was successfully able to render a simple 3D model (Sphere) using opengl and python.
 3. The team also researched about using OpenVR with python and HTC VIVE.
 4. The team was successful in setting up HTC VIVE and initialize it with OpenVR.
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Pending Issue

We have following pending issues for the next week:

1. We must research a way to render a simple 3D model using both opengl and openvr simultaneously and display it on HTC VIVE instead of the computer screen.
 2. We must make a pipeline to feed the coordinates from the stl parser program to the 3D model generator program.
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Plans for Upcoming Reporting Period

We have following upcoming reporting period:

1. Complete the pipeline program
 2. Render a model on the HTV VIVE headset display
 3. Start Researching on positional tracking, so that we can manipulate the 3D model in VR.
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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Bhimesh S. Chauhan	<ul style="list-style-type: none">• ASCII to Binary converter for stl parser.• Render cube and polygon model in Opengl with python.	7	48
Vaibhav Malhotra	<ul style="list-style-type: none">• Rendered a sphere using Opengl with python.• Set up HTC VIVE to work with openVR• Researched about rendering models on the headset in tandem with openVR.	7	34
Cole Chapin	<ul style="list-style-type: none">• Set up Git lab.• Set up python and Pycharm IDE	8	31
Ryan Luck	<ul style="list-style-type: none">• Worked on parsing ASCII values from stl file.• Assisted in setting up VIVE for testing.• Also worked on converting ASCII to Binary	6	33
Cal-Vert Wong	<ul style="list-style-type: none">• Created a program that can parse both binary and ascii stl files.• Added feature to stl file such that it can detect broken or incomplete stl file.	8	35