

EE/CprE/SE 4920 WEEKLY REPORT #2

Sept 5th, 2025 – Sept 18th, 2025

Group number: 15

Project title: Vision Based Camera Motion Tracking

Client &/Advisor: Eric Wittrock & Dr. Gaffar

Team Members/Role: Isaac Kenyon, Andrew Gooding, Will Ernatt

○ **Weekly Summary**

Loaded point cloud and camera data into blender with existing plugin as part of the workflow. Worked on reading output data to get a plugin working without the need for third party plugins. Read technical documentation and worked on developing an algorithm to detect the floor to properly orient the scene.

○ **Past week accomplishments**

- **Eric Wittrock:** Researched the technical aspects of COLMAP and GLOMAP in case understanding the algorithm at a lower level could help with implementing new features in the future. Worked on reading COLMAP's binary file output. Worked on a floor detection algorithm.
- **Andrew Gooding:** Was able to find and download the mac version of COLMAP/GLOMAP downloaded onto my computer. Also was able to run the script on videos to break it up into a series of images.
- **Will Ernatt:** Finished getting the COLMAP/GLOMAP pipeline set up on my computer. Experimented with different videos and parameters. Started developing a Blender plugin and finished implementing the first step of the pipeline as a plugin.
- **Isaac Kenyon:** Got COLMAP running on my linux machine, and the point cloud to be imported into blender easily. Made a couple of changes to the bash script in order to get it to work.

○ **Pending issues**

- **Eric Wittrock:** Binary-formatted outputs must be converted to .txt via the GUI. A dependency-free solution has yet to be found.
- **Andrew Gooding:** Was able to run Colmap onto my computer using the Colmap GUI but it does not show up on Blender. I believe this is because of some missing dependencies when downloading photogrammetry.
- **Will Ernatt:** File permissions issues with Blender, looking for workaround.
- **Isaac Kenyon:** None this week.

○ **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Eric Wittrock	Worked on reading COLMAP output bin files, creating floor detection algorithms.	6	12
Andrew Gooding	Download Colmap and Glomap and ran programs using the colmap gui.	6	11
Will Ernatt	Glomap implemented, Blender plugin work continued	6	12
Isaac Kenyon	Colmap implemented, bash script changes	5	11

○ **Plans for the upcoming week**

- **Eric Wittrock:** Will load point cloud and camera data into blender from the .txt file and Implement a working floor detection proof of concept.
- **Andrew Gooding:** Work to get photogrammetry working fully on my Mac and experiment with the software.
- **Will Ernatt:** Research more of CUDA implementation on Linux. Experiment with WSL. Implement remaining stages of the GLOMAP pipeline in Blender.
- **Isaac Kenyon:** Look into automating the generated files into blender, the current process involves many buttons and clicks to get running. Also the installation of some files.