

sdmay20-47: Real Time Volumetric Analysis

Week 5 Report

October 27 - November 3

Team MembersKenneth — *Team Lead*Alain — *Chief Hardware Developer*Dan — *Chief Software Developer*Luke — *Chief Interface Developer*Max — *Chief Backend Engineer***Summary of Progress this Report**

Over this past week we fully committed to moving ahead with AirSim over Gazebo for UAV simulations. This came after about a week of research on our part, then asking the team and waiting on them to decide whether to transition to the new tool. Once we were able to get AirSim up and running we began making quick progress. We have been working on several aspects of the project in AirSim including getting the Unreal engine to run on Ubuntu, creating randomized autonomous car, creating an environment for the drone, and getting the drone to return image data in the format we want.

Pending Issues

We need to create a central repository to place all the code in. Because AirSim is so large and modular, we will most likely just be hosting single files or possibly small packages to the git repository. We are also still in conversations as to whether we want to transition to an Windows 10 development environment or stick to Ubuntu.

Plans for Upcoming Reporting Period

Formalize decision on Windows 10 development environment vs. Ubuntu. Get the car driving programmatically. Use image data to autonomously fly the UAV. Create a suitable testing environment in Unreal.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Kenneth	Spearheaded decision to request change from Gazebo to AirSim, and did a lot of initial work to get AirSim running.	8	
Alain	Worked with multiple grad students to build physical drone. Systematically diagnosed issues with getting physical drone running. Worked with grad students to order necessary parts missing to get drone up and running.	8	
Dan	Worked along with Kenneth to push to get	8	

	AirSim accepted as the drone simulation software. Set up AirSim environment and got working on Linux machine after a lot of troubleshooting.		
Luke	Worked with a grad student to implement TensorFlow in our project. Will be assisting the team with reinforcement learning techniques on the drone simulation.	8	
Max	Got AirSim up and running in a Windows 10 environment. Created programs to control the drone through Python APIs. Set up Anaconda to manage the data science aspects of the Python programs.	8	

Gitlab Activity SummaryNothing to report.
