Group 10 Edwin Zheng & Kalvin Weng

CS476: AirSim Lidar Map Project

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What Works

- Setup Airsim and Unreal engine
- Multi drone LiDAR alignment
- Simultaneous multi drone control
- LiDAR coverage, flight safety and frontier mapping
- Drone to frontier pathing algorithm
- Stuck detection

What didn't work

- With limited granular control over the drone allowed by our tech stack, the drone is not as responsive as we want it to be. The drone is unable to determine its environment and state in real time, with only asynchronous movement causing the drone to occasionally get stuck. We were able to combat this somewhat, but there are still edge cases that can cause issues.

Kalvin Weng

What Works

- Set up LASView to run locally
- Local host LasView LiDAR will update with new LiDAR data.

What didn't work/Incomplete?

- I tried to break up our complex code into multiple files(modular code). However, there were too many problems and I couldn't finish this aspect of the project in time. The code does run and does generate a lidar map, but the only problem is that the drones aren't coordinated properly. Some drones are gathering lidar data while others seem stuck. Currently, the code separates the functionality into separate classes. Drones can gather LiDAR data, and the LiDAR data can be merged into one file. Everything lives in `` `drone\` `` dir.

Both

- Presentation Slides & README