
EE/CprE/SE 491 WEEKLY REPORT 03

9/27/2024 - 10/3/2024

sdmay25-21

Distributing a fleet of drones over an area with no-fly zones

Trajcevski, Goce

[Nicholas Kokott](#) - Team Organizer

[Melani Hodge](#) - Algorithm Design/Implementation

[Cole Stuedeman](#) - Testing

[Everett Duffy](#) - Component/Module Design

[Ken Schueman](#) - Advisor Communication

[Samuel Russett](#) - Research Discovery and Testing

Weekly Summary:

Last week, our team learned the spend time looking at the lotus design development technique. This is essentially working and understanding the overall architecture and refining it into continually narrower modules within the architecture of our software. We also looked into the different data structures we will be required to utilize for our algorithms to work appropriately. We discussed how we will be calculating the perimeters around our no-fly zones.

Past week's accomplishments:

This past week, we were collectively told to look back at another of our advisor's drone projects in the past as it may inspire us for our project design. We also continued looking up potential frameworks and tools to be used. As well as this, we continued to look at different data formatting types that could be used to transmit geographical, drone, and algorithmic data that can be sent between our front and backend. Nicholas and Cole were still looking more specifically into data transfer and have begun debating on BSON JSON and shapefile for our data transfer. Ken, Everett, Sam, and Melani looked into the different frameworks and tools we could utilize.

- Sam: 2 hours spent finding newer full-stack frameworks and seeing compatibility.
- Cole: 2 hours spent finding new data transfer methods that could be more efficient than what has been found.
- Nick: 2 hours spent contemplating which data transfer method to use.
- Everett: 2 hours spent revising and checking which back-end frameworks would work best
- Melani: 2 hours spent revising and checking which front-end frameworks would be best and updated the team website
- Ken: 2 hours spent finding and discovering new C++ frameworks that could be utilized

Plans for the upcoming week:

- We will meet to develop frameworks and data transfer methods that we will want to use for our project to allow us to start learning these technologies in depth and the associated coding languages.
- We will also find other projects that use the frameworks we desire to use and see how well they worked out in projects with similar aspects to ours.
- We will describe the project's overall architecture and try to break down the project into smaller modules.

Advisor Meeting:

In this week's meeting, we discussed several topics

- Start thinking about the end use case scenarios and visualize how our users will interact with our application. Try to draw it out and see what might be most accessible.
- Utilize the lotus development technique to understand how the high-level architecture will work in the software so that we can start moving on to the lower-level architecture and describe those modules and how they interact.
- We also discussed the different data structures we must make from scratch to optimize our time complexities and data flow.