
EE/CprE/SE 491 WEEKLY REPORT 06

10/18/2024 - 10/24/2024

sdmay25-21

Distributing a Fleet of Drones over an Area with No-Fly Zones

Trajcevski, Goce - Advisor

[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:

This week, we explored our chosen front-end framework, getting familiar with its features and functionality. On the backend, we continued developing with PostgreSQL and Python to manage our server and application state data. During our meeting with the advisor, we asked more targeted questions about handling datasets and demonstrating our partitioning algorithm. Additionally, we identified our users' needs and defined the project requirements. We also focused on finalizing the design document and finishing the last of the lightning talk slides.

Past Week's Accomplishments:

This past week, we made significant progress on our project. Everyone has set up and is now working with the necessary frameworks, experimenting with them to optimize the implementation of the user-facing UI. We also had more detailed discussions about dividing the workload between the front and back end. Additionally, we addressed future questions about the project with our advisor. On top of that, we outlined the user needs and requirements for the design document and drafted the introduction section. These efforts will significantly benefit our upcoming discussions with the class, our advisor, and PhD students.

- **Sam:** Spent 4 hours researching newer full-stack frameworks and assessing their compatibility. Additional time was dedicated to reviewing and researching KD and BAR trees.
Cumulative: 16 hours
- **Cole:** Spent 3 hours investigating more efficient data transfer methods than those previously identified.
Cumulative: 12 hours
- **Nick:** Spent 4 hours figuring out how the frontend communicates with the backend.
Cumulative: 17 hours
- **Everett:** Spent 3 hours exploring the frontend to better understand its functionality.
Cumulative: 14 hours
- **Melani:** Spent 3 hours identifying our server service (PostgreSQL) and evaluating its compatibility.
Cumulative: 15 hours
- **Ken:** Spent 16 hours continuing development on the frontend and backend
Cumulative: 16 hours

Past Week's Challenges:

This week, one of the challenges we faced was the ongoing wait for the flight path algorithm, which our advisor's PhD student is currently developing. Additionally, we need to clarify which algorithms will be provided that the PhD student did not write but still intends to incorporate. We've also encountered difficulties in deciding on the data structure for our

partitioning; there are two viable options that our advisor has discussed. Progress on this issue has been slow, as the PhD student has missed the last three meetings.

Plans for the Upcoming Week:

- Keep experimenting with the front-end design to enhance the user experience.
- Investigate how to integrate PostgreSQL into the project.
- Determine how to implement and utilize the PhD student's algorithms in our backend system.

Advisor Meeting:

In this week's meeting, we discussed several topics

- Keep experimenting with the front-end design to enhance the user experience.
- Investigate how to integrate PostgreSQL into the project.
- Determine how to implement and utilize the PhD student's algorithms in our backend system.