Path Planning for Drone Using Reinforcement Learning

Group 8 - Andrew Sailer, Jesse Gillingham, Cody Draper, Akash Setti

Attendance:
- Andrew Sailer
- Jesse Gillingham
- Cody Draper
- Akash Setti
- Client: Amir Niaraki

Advisor (Ali Jannesari) was unable to attend this week. We are scheduled to meet next week.

Changes in Team Process:

New Discord for communication

Changes in the meeting goals (shorter)

More frequent communication of individuals' work throughout the week on Discord

Agenda
- Group meetings will look more like standups
- New Discord server for communicating directly with client and advisor
- Implement new strategies to become more communicative with the client and advisor
- Meet with the advisor more this semester (roughly 2x a month)
- New meeting style, will be kept brief and mostly consist of the individual's work, accomplishments, and the work they plan to accomplish
- Clarify the end goal of the project for this semester as well as some milestones we want to hit and their dates

Meeting Notes
- New meeting style and discord will work well for the client and advisor
- The advisor requested to be included every month or so
- The client proposed changing the project from a drone to a quadruped robot
- The team is leaning toward continuing with the drone
- The end goal of the project will be a trained RL model that can plan paths given a *very* high-resolution image. This path should be reasonably executable by a physical drone

- The first milestone is to implement the RL model on a 1 channel low-resolution image
- The next milestone is to have a trained deep-learning model able to detect anomalies from the high resolution image
- The final milestone is the end goal of the project; Generate paths with the RL model on high resolution images with the deep learning model

Summary

The group discussed different methods for communication along with the proposition to change the project to a quadruped robot. We have created a new discord chat for both the advisor and the client to join, and we will be continuing working with the drone rather than the quadruped robot.

The next steps for the project are to complete the Complete Coverage Algorithm and immediately start working on the Reinforcement Learning aspect of the project. This semester the team wants to become better at communicating with our superiors along with completing the work at a high level. We are going to learn from the previous semester, and we believe that we have set better guidelines for the project to execute smoothly