

CprE / SE / EE – sddec26-11

CyFlyBot: Collaborative CyBot and UAV System for Faster Missions

Week 6 Report

March 24, 2026 – March 31, 2026

Client: Dr. Rover and Dr. Jones

Faculty Advisor: Dr. Rover and Dr. Jones

Team Members:

Daniel Bieber

John Brittain

Jake Nickel

Caleb Sanchez

Tu Reh

Ping Wu

Mitchell Fowler

Weekly Summary:

Our team's work was reviewed during the meetings with Dr. Rover and Dr. Jones last week and was found to be less than satisfactory. We are now working on a course adjustment to create satisfactory work going forward. In this adjustment, we resolved to improve meeting coordination, report refinement, and project documentation. Regarding the weekly meetings, we have reserved a spot in the SIC for the next month on Mondays from 4-5. We have given the role of minutes' taker to John. We have also divided the team into sub teams to further improve productivity. Regarding report refinement, we are referencing previously successful reports and using them as a guide. Project documentation is another focus with priority given to the High-Level design documents.

Overall, the biggest point is that we are adjusting our processes for success.

Past Week Accomplishments

- Course Adjustment
 - Reevaluated progress so far at the behest of the advisors
 - Set up regular meetings
 - Changed focus of resource allocation and interaction to Design
- Design Documents
 - Nailed down high-level design and functionality
- Software/ Coding
 - Worked on finalizing team website
 - Researched computer vision, warehouse management
- Hardware
 - No progress has been made this week, priorities lay elsewhere
- Administrative
 - Approved for use of Coover 1318 Overflow lab
 - Reserved SIC meeting room for the next month
 - Submitted Request for keys to Coover 3050

Individual Contributions:

NAME	Contributions	Weekly Hours	Total Hours	Attended General Meetings
John Brittain	Developed High-level design focusing on hardware. Researched CrazyFlie expansion decks. Working on developing low-level schematic focusing on UAV and it's components.	3	7	yes
Daniel Bieber	Collected code for the ground bot. Reviewed the microcontroller datasheet to confirm pin outputs were correct in the code. Took note of sections of the code that could be removed or rewritten to better suit the project scenario.	1.5	4.5	yes
Jake Nickel	Researched mapping ideas and what we would need for backend. Spent some time learning about computer	1.5	3.5	yes

	vision. Worked on 7.1 for design documents.			
Caleb Sanchez	Worked on updating website. Completed new version of high level design diagram. Completed mid-low level diagram of computer vision module. Completed frontend mid-low level design diagram.	2	5	yes
Tu Reh	Researched into LIDAR, mapping, and computer vision. Specifically, more into Amazon warehouse robots and how those components are utilized. Look into Crazyflie open-source GitHub for source code.(1 hour 30 min) Worked on design diagrams (30 min) and Design document. (1 hour)	3	5	yes
Ping Wu	Researched open sources for computer vision models. Spent some time learning how machine learning works and components to the code.	2	4.5	yes
Mitchell Fowler	Acquired and partially assembled alternative to CyBot. Put together weekly report. Team Liaison. Worked on project management design documents. Created a potential demo environment.	3	5	yes

General Meeting Review

Met at 3131 SIC from 4pm-5pm on Monday. All were in attendance. Discussions were held about the performance review on Friday. Weaknesses were clearly explained, and the importance of correcting these issues was drilled in. All were in agreement of the need for focus and effort.

We then proceeded to work on a high-level design document to really nail down our functionality.

Summary of Weekly Advisor Meeting

4 out of the 7 team members were absent during this week's meeting. This was alarming to the advisors, and as a result, the team was given feedback on our level of effort. This

feedback was needed, and now our team is on the right path again. We are working so that another meeting of that caliber won't happen again.

Some of the detailed advice given was to focus more on design documents versus trying to work with the hardware.

Extended Discussion

This week was a wakeup call. Our team was a little lost and were looking in too many directions. After the advisor meeting, we are now focused and are working towards a successful completion of the project. We believe the root cause of these issues was our prioritization of hardware. When we were getting stalled by supply issues, we were a little lost and lost some steam.

Pending Issues

- Reproduce reports from previous weeks to be of higher quality, including individual contributions, weekly hours worked, and total hours.
 - Aiming to be done by April 10th
- Design Documents
 - High Level Design document needs to be finalized.
- Project websites lack information, including lackluster reports.
- Produce PDFs of all previous weekly reports and include them on the project website.
- Divide our seven members into sub-groups each with definite tasks and goals.
- Team members must be given individual roles.
- Request Keys access per Dr. Jones Requests
- Go through with Crazyflie Demo by MicroCART team

Plans for Coming Week

- Hardware
 - John Brittain
 - Work on low level design document for UAV
 - Daniel Bieber
 - Research wireless charging for UAV when landing on UGV
 - Review landing pad brainstorm to integrate wireless charging
 - Mitch Fowler

- Redo past reports
 - Finalize project management plan
 - Prep material for next advisor meeting
 - Complete “factory floor” design
- Software
 - Caleb Sanchez
 - Update and improve website including profiles of team
 - Create low level design diagrams for software modules
 - Research real application scenarios of robots in warehouse’s
 - Begin working on application of computer vision module
 - Tu Reh
 - Experiment on computer vision components.
 - Work on design diagrams for software frontend/backend.
 - Notes on research of LIDAR, mapping, and computer vision of warehouse robots.
 - Notes on Crazyflie and its source code.
 - Ping Wu
 - Map out computer vision components
 - Work on design diagrams for computer vision
 - Research more about warehouse applications
 - Jake Nickel
 - Research more about computer visions and mapping
 - Work on design diagrams for computer visions and mapping