

Individual Report for Winson (wche5722)

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Statement of work done

Slack Expert

As the Slack expert, I was responsible for the creation and management of the Slack channel. This role was made redundant through the complete transition towards Discord.

Work done as tracker from the end of Week 6 onwards

As the roles within the group became more formalized, I was assigned the tracker role for the rest of the project. My responsibilities to was to individually check-in with their weekly plan and progress for all group members biweekly (Thursday and Sunday). Evidence for this can be found in the wiki [here](#). Below is an example of the information I would collect each week, in this case, Week 7.

Week 7 Individual Progress

Person	Task	Wednesday Update	Sunday Update
Joseph	F1 map, documentation for map implementation	Road layout for F1 map	Acquired assets for F1 track
Julian	F1 map, documentation for map implementation	Documentation done	Updated cam resolution to 240x240
Winson	Stop detection(brake)	Solved return info bug, stuck on getting car moving in sim	Implemented brake
Patrick	Demo, traffic light	Demo preparation	Experimenting with Unity traffic light
Kevin	Implement new functions for demo	Implemented early stages of arrow turn	No progress
Jordan	Implement new functions for demo	Implemented white park and early stages of black circle turn	No progress

These reports start from MidSem and end with Week 12

Work done as a tester

I assisted in the testing process with the creation script used to rename files for the tests. The commit message for the script can be seen here.

[COMP3888_T17A](#) / [CP31](#) / [COMP3888_T17A_Group5](#) / [Commits](#)

Commit



Winson Chen committed **8908b77**

2020-11-04

testing file rename script

Technical work done

My technical contributions have focused around OpenCV and RMRacerLib as well as the installation of Donkey software. My main contribution is cone detection and its respective response. This can be seen in these two commits.

[COMP3888_T17A](#) / [CP31](#) / [COMP3888_T17A_Group5](#) / [Commits](#)

Commit



Winson Chen committed **3921fc2**

2020-10-24

traffic cone detection ready for response

[COMP3888_T17A](#) / [CP31](#) / [COMP3888_T17A_Group5](#) / [Commits](#)

Commit



Winson Chen committed **6b2f3eb**

2020-11-03

cone detection + untested response

I also assisted Jordan to implement his circle turn detection into the simulator in a pair programming

effort.

October 31, 2020

18 AM **Winson** Winson/Jordan: Saturday, 31/10/2020, 9:00am - 10:30 am (Circle turn detection implementation + donkey 4.0 update) (edited)

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Commit



Winson Chen committed **c865f32**
2020-10-31

working circle turn detection in sim

I also worked a lot on bug fixing regarding the transition to Donkey version 4 and adding to the DonkeyCar community (where rahulrav is a developer for DonkeyCar).

3:39 PM **Winson** having trouble with the donkeycar simulator. following this guide (<http://docs.donkeycar.com/guide/simulator/#donkey-simulator>) and getting this error when i get to the python manage.py drive stage

```
(donkey) 192-168-1-7:mysim2 winson$ python manage.py drive
using donkey v4.0.0-dev ...
Traceback (most recent call last):
  File "manage.py", line 627, in <module>
    cfg = dk.load_config(myconfig=args['--myconfig'])
KeyError: '--myconfig'
```

Winson any help would be appreciated 😊

5:12 PM **tawn** @Winson looks like you might be on dev. Try git checkout master in donkeycar

5:14 PM **Winson** 3.1.5 works fine, but i was told to upgrade to 4.0 and having trouble with that right now

5:15 PM **rahulrav** I think you might need to recreate your manage.py script

5:17 PM **Winson** is that delete the file then "donkey createcar ..."?

5:19 PM **tawn** donkey update

5:21 PM **rahulrav** What @tawn said. If you are worried about update then you can also just create a new "project" with donkey createcar (edited)

rahulrav That way you don't lose any settings for sure.

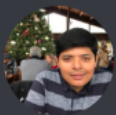
5:32 PM **Winson** created a fresh car, still getting the same error

5:34 PM **rahulrav** That is weird.

rahulrav I can take a look tomorrow.

5:36 PM **Winson** thatll be cheers, more than happy to dm u any details if u need

5:36 PM **rahulrav** Will reach out if I need to



rahulrav

This is the beginning of your direct message history with @rahulrav.

October 8, 2020

9:13 PM **Winson** regarding the problem i had yesterday, i managed to fix it by changing manage.py, at the bottom (line 628ish), i changed `cfg = dk.load_config(myconfig=args['--myconfig'])` to `cfg = dk.load_config()` and i dont have that error message anymore

October 9, 2020

12:32 AM **rahulrav** Awesome

2:06 AM **rahulrav** You can send us a PR if you want BTW

I also created changes to the DonkeyCar code to allow for a smoother deployment requiring less user

input, such as manually changing lines, automatically installing dependencies, and removing outsourced repository.

•	WC	Winson Chen	bba7acc	delete config.py at root, deleted d...	2 days ago
○	WC	Winson Chen	edc91d4	update to latest donkey	2 days ago
•	WC	Winson Chen	58ca57e	working rmracer	2 days ago
•	WC	Winson Chen	efde614	real g-dcar add	2 days ago
•	WC	Winson Chen	2964b89	temp g-dcar	2 days ago
•	WC	Winson Chen	d132036	added opencv-python to donkeyc...	2 days ago
•	WC	Winson Chen	45b6640	unzip gymdonkeycar	2 days ago
•	WC	Winson Chen	19c4a78	donkeycar 4.0.1 add i think	2 days ago
•	WC	Winson Chen	c4d52c4	new config file	2 days ago

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Commit

WC **Winson Chen** committed **d132036**
2 days ago

added opencv-python to donkeycar dependencies

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Commit

WC **Winson Chen** committed **19c4a78**
2 days ago

donkeycar 4.0.1 add i think

I have also implemented Maxime's (a DonkeyCar maintainer) brake changes for our group including bug fixes in early stages.

Changes for brake to work

Wednesday, 14 October 2020 17:11

```

Donkeycar/parts/web_controller/web.py
Self.img_arr = img_arr[0] (all)

Rmracerlib/src/donkey/part.py
Def run (... ,img_arr_list, ..., brake, ...)
Img_arr = img_arr_list[0]
All return img_arr, throttle, steering, brake

Def run threaded
Def __init__

Manage.py
Line 311 return ...(img_arr[0],..)
```

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Commit


 **Winson Chen** committed **6503000**
2020-10-18

brake implementation + cleaned up signs.py

Lastly, I implemented Cian's (our client) speed changes into RMRacer for our group.

[COMP3888_T17A](#) / [CP31](#) / [COMP3888_T17A_Group5](#) / [Commits](#)

Commit












 **Winson Chen** committed **8348b90**
2020-11-08

added speed

Non-technical work done

My non-technical work includes assisting mostly in the paperwork process, notably the demo and the presentation portion of the user stories for OpenCV. I also rewrote the installation documentation.

Shared with me > [COMP3888](#) > [FINAL DEMO VIDEOS](#) ▾

Name ↑	Owner	Last modified	File size
 Julian Demo	Julian Jee	Nov 19, 2020 Julian Jee —	
 2020-11-20 17-47-32.mp4 	Patrick Delaney	Nov 20, 2020 Patrick De 3 MB	
 Cone response.mp4 	me	Nov 20, 2020 me	6 MB
 Joseph Demo (Should be first).mp4 	Joseph Pham	Nov 19, 2020 Joseph Pi 23 MB	
 Stop response.mp4  Shared	me	Nov 20, 2020 me	14 MB
 Turn response.mp4 	me	Nov 20, 2020 me	8 MB

Individual Contributions	
Team Member	Roles
Jordan	Project Background & Stakeholders, Response to Client Requests
Winson	User Stories: OpenCV
Joseph	User Stories: Simulator
Julian	Simulator Background, User Stories: Simulator, Quality of Work
Patrick	Quality of Work, Testing, Application of Discipline Knowledge, Demo
Kevin	Group Processes

COMP3888_T17A / CP31 / COMP3888_T17A_Group5 / Commits

Commit

**Winson Chen** committed **49dc7b4**

2 days ago

Installation instructions

Files changed (2)

+16 -4 M [Final Individual Reports/Winson Chen.md](#)+59 -46 M [Installation of Software.md](#)

I solved the problem of the repo size where branch merging, deletion and our own garbage collection did not decrease the size. This was done by contacting Atlassian support, which was done twice.

November 1, 2020

2:56 AM **Patch** our repo is now over 2GB so no one can push anything else, i never ended up pushing the park sign changes i made and kept them locally - ill look into it tomorrow to figure out how we reduce it

**Syahrul** 02/Nov/20 1:22 AM

Hi Winson,

Thanks for reaching out to us with your issue.

I've proceeded to run Git GC on your repositories and the size has been reduced to 919MB afterward.

Let me know if there's anything else I can help you with.

-

Mohammad Syahrul

Support Engineer, Bitbucket Cloud

Details 01/Nov/20 4:56 AM

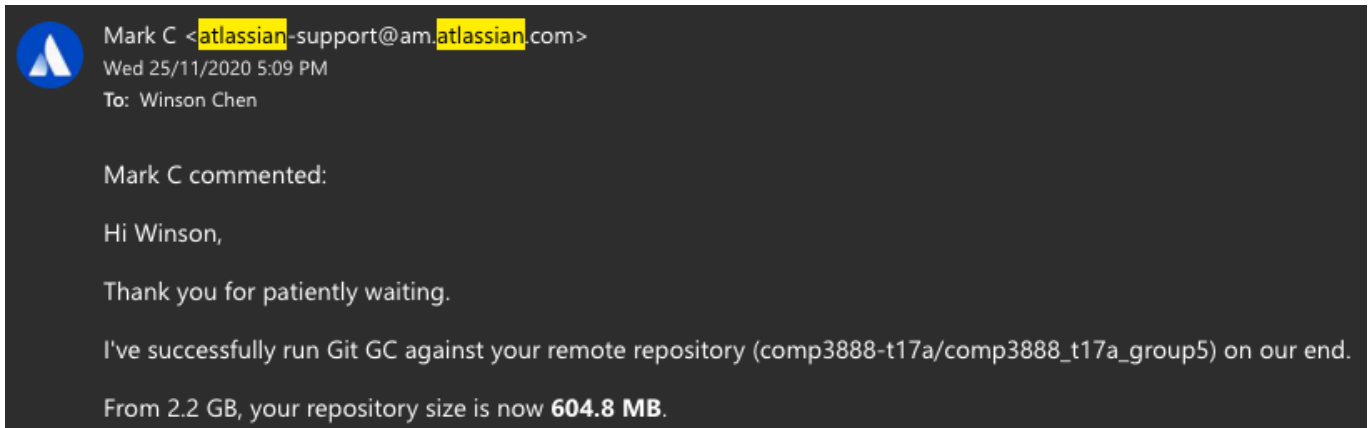
Description

Hi, my repo is currently too large, could I get a garbage collection run please?

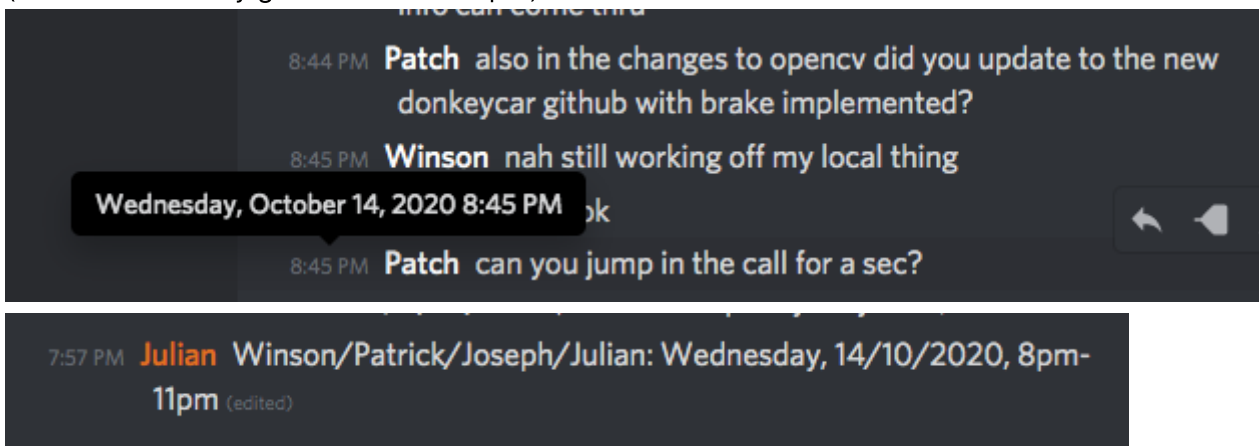
Thanks

Wednesday, November 25, 2020 11:21 AM ing footage of editing track

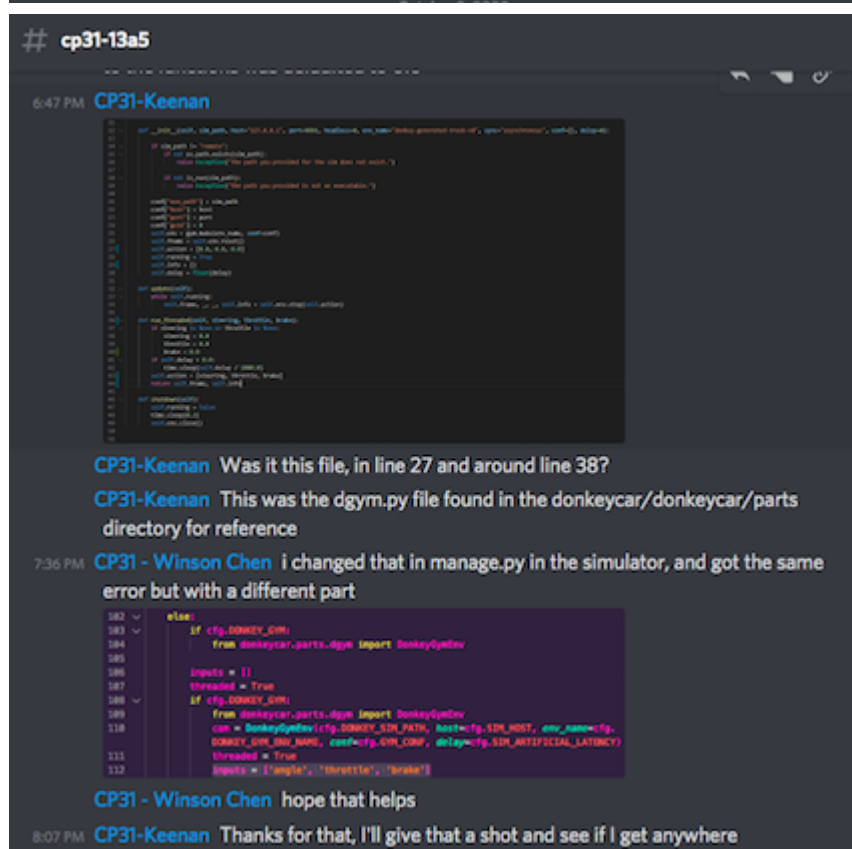
11:21 AM **Julian** well, my commit was pushed**Julian** but now the repo size is 2.23 gigs



I have been consistent with attending and contributing to all team and tutorial meetings, and client meetings once a week (see [Meeting minutes](#) for more, for client meetings I attend the second client meeting so check any meetings under Client 2). I have also uploaded a weekly update video at the clients request every week (see bottom of [Weekly Reports](#) e.g. [Week 7](#)). Also, I consistently and frequently check for new messages by other group members and try my best to assist solve problems that come up (Note that I usually go to bed at 9:00 pm).



I have also offered assistance to other teams working on the same or similar projects when they run into problems I have had before.



Week 1-6 work done

8 / 12

*** Note: the evidence for these cannot be found on BitBucket due to the deletion of branches. However, they can be obtained through the videos at the bottom of the weekly update. Link is after the rest of the weekly progress.

Midsem - Week 12 work done

Week	Planned	Achieved
MidSem	Stop response, cone detection	Stop response and cone detection
Week 7	Improve stop response	Implemented brake (more reliable stopping than reverse throttle)
Week 8	Cone response	Improvements to cone detection (required to implement response)
Week 9	Cone response, pair programming with Jordan to solve turn response implementation problem	Basic cone response, successful turn implementation
Week 10	Park response, test cone response, implement speed	Cone response improved and tested, park response done, speed implemented, wrote the script for test cases
Week 11	Presentation and demo work	Structure presentation and prepared code for demo
Week 12	Presentation, demo and deployment	Recorded presentation and demo, improved code for smoother deployment

Evidence can be found in the individual progress page. [Linked here](#) and also as a part of the [weekly update video](#) . Note Week 2, 6, 8, 11, 12 are missing due to uneventful (Week 2), mainly presentation work (Weeks 6, 11 and 12) and administrative errors (Week 8)

Extent of work done

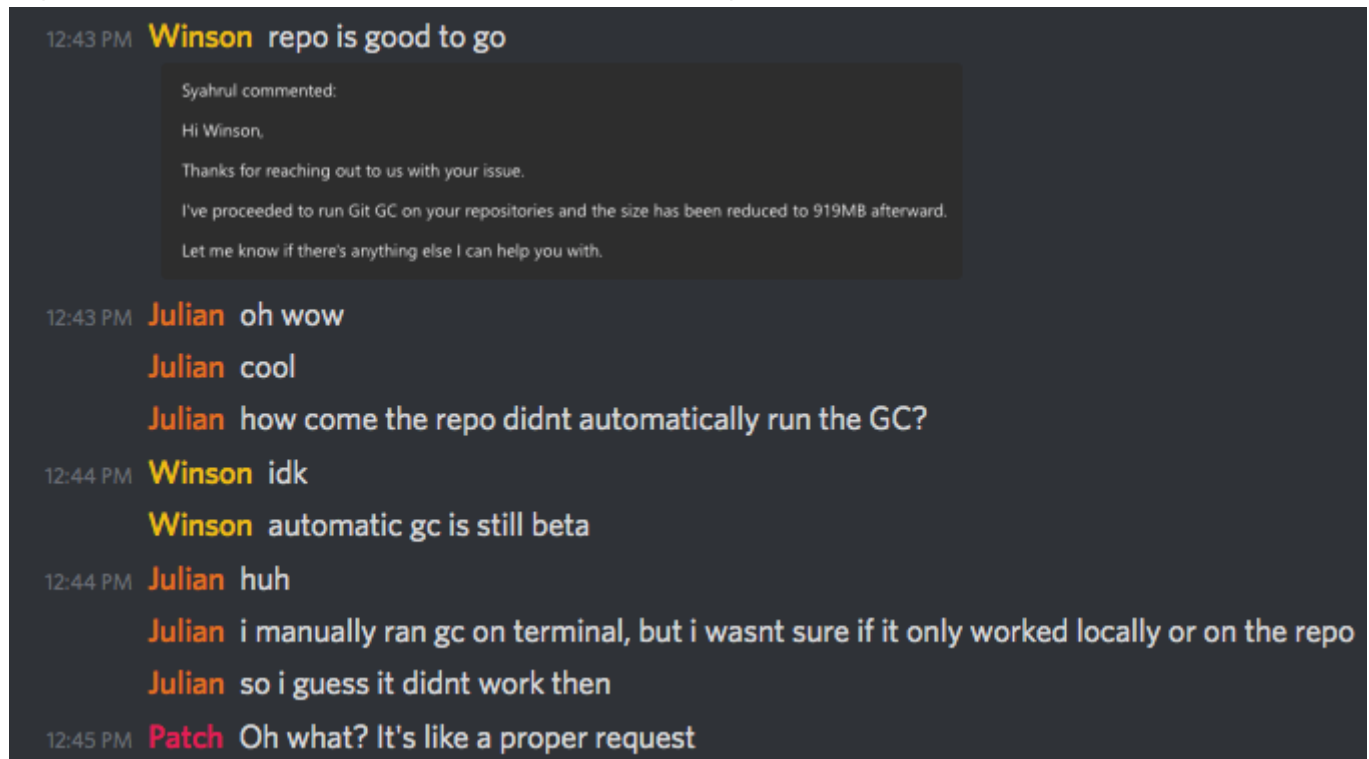
Effects of technical work

My work on cone detection and response directly improves the user story relating to the detection of park sings. I have also directly contributed towards the user stories by assisting in the implementation of a novel circle detection algorithm. The script I created to change file names assisted in the creation of test cases especially for tests involving a large amount of data. My technical work involving bug fixing with DonkeyCar helped me better understand the code and allow me to implement a smoother method of deployment. It also assisted in creating a collaborative environment between the groups as well as improving the deployment process.

Effects of non-technical work

My efforts in the presentation and demo assisted in the administrative requirements of this project. My installation document contributes to smooth client deployment as a part of the handover process. Being

able to clear out the repo was extremely important. Without it, further work and collaboration could not be done. To add to the importance, the second time it occurred was leading up to the final client deployment and handover. Without being able to make these changes would have lead to not being able to make crucial last-minute changes necessary. Although anyone could have done requested it, the idea was not thought of as the other members were confused with why local garbage collection did not improve the solution and there was a lack of alternative possible solutions.





Helping other teams contributed to fostering good relations between the teams that played a part in other teams assisting us with our problems and creating a culture that improves the student experience among members.

XP Roles

My role as a tracker helped the manager (Julian) make weekly plans and complete the weekly report. It also created passive social accountability to create pressure to stay organized and provide meaningful updates from team members. It also created a centralized location for evidence of planning, an area that we severely lacked in the first report.

Quality of technical work

My cone detection quality can be seen in its results.

being able to return the results of the test and choose a variety of different test maps.								
	Sign	Hit (True positive)	Miss (False positive)	True negative	False negative	Recall (Hit/ All positive tests)	Precision (Hit/ All positive occurrences)	Correct Direction
	Stop	50.96%	0.00%	49.04%	0.00%	100.00%	100.00%	N/A
	Cone	81.08%	6.06%	13.51%	5.41%	100.00%	94.00%	N/A

The response passed basic user testing functionality as seen in the demo and can also be seen in video format [here](#). The quality of the turn sign implementation is confirmed through pair programming with

Jordan. The DonkeyCar changes quality of work can be shown via ease of installation of the project from 12 steps to 6 steps (lower in the technicality of the steps) as well as being able to run DonkeyCar.

Reflection

Version control

Problems with version control have been more present in the second half of the project. There have been issues with members working on older code due to lack of frequent merges and pull request. This has led to some members in the OpenCV teams not understanding the new changes implemented whilst still developing code. This caused some frustrating problems when it came to merging changes as we had to find parts of the code that was not compatible with the latest version.

Coding style

Coding style has been a problem in terms of some members having inconsistent styles (poor variable naming conventions) and creating unnecessary functions (likely due to a lack of asking themselves, do we really need this). This problem was also a part of the code we wrote earlier. This has led to some problems implementing changes but these problems were only minor annoyances. Otherwise, the coding style has been legible enough to get the job done.

Extreme Programming

Since the first half, formal roles were implemented. This made the workflow much more productive and improved team member engagement. The majority of this improvement was knowing who was responsible for certain jobs which allow questions to be directed at the correct person the first time around. Despite the formalization of roles, the team did not encounter any issues with overcontrolling and micromanagement styled leadership. We (including me) could have improved on the frequency of commits on the OpenCV side and the agility of members to have transitioned to sign response as it was lacking more than sign detection.

Challenges and resolution

We met some communication challenges in terms of missing/late to meetings and ensuring group work submitted. These are resolved with reminders of upcoming meetings and assigning someone responsible for submitting the reports. Other challenges such as the move to DonkeyCar 4.0 was met with initial frustration, however, level-headed discussion with the client and those more knowledge with DonkeyCar assisted greatly in finding the solution. Initial frustration is to be expected and I am happy that the frustration did not progress further.

Project and team

I am enjoying the project as it has given me new perspectives on big scale code production, computer vision and group work. The teamwork has been pleasant with most members having a solid work ethic and frequent, transparent communication. I expected work that was less experimental/research-like and more creation of code. This desire became more evident in the second half as there was a lot of compatibility issues and it was beginning to feel like my job was to fix DonkeyCar rather than code our project. I do understand it could not be avoided as it was a dependency to further develop our project. I

am also a little grateful of it, as messing with the DonkeyCar code allowed me to fix bugs during the deployment phase given my increased familiarity due to by earlier debugging. I have also gained a new appreciation of the computer science discipline as I have been exposed to more members of the community. This project has been a part of my reconsideration of continuing working within this field.

Improvements

Some improvements could've been made with the familiarity of git and its pull request functionality, allowing for better version control. We could have also benefitted with better prioritization towards the response as we had a basic level of sign detection function. Explicit documentation of events in the future would also be an area of improvement. Although our paperwork has improved quite a bit since the first report, a lot of evidence I thought I had could not be used in solidarity and required a lot of contextual information. This made me reconsider if I could make a claim and back up with evidence