Team 1

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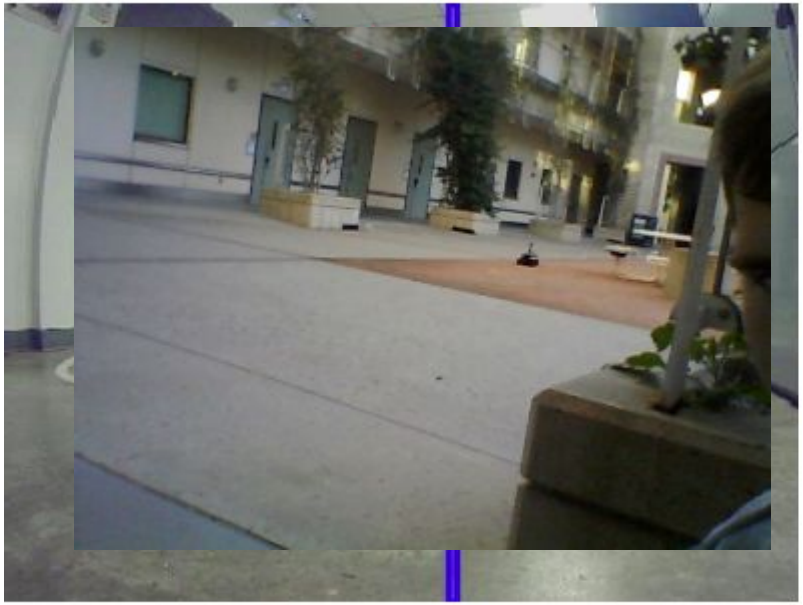
Kaifan Yue (MAE)

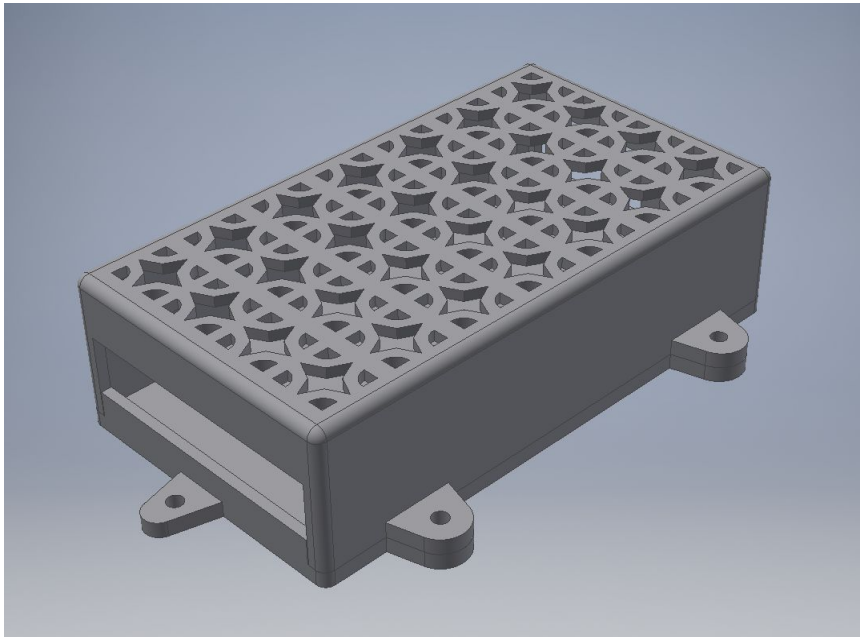
What We Did Last Week:

RTK now works with PI!

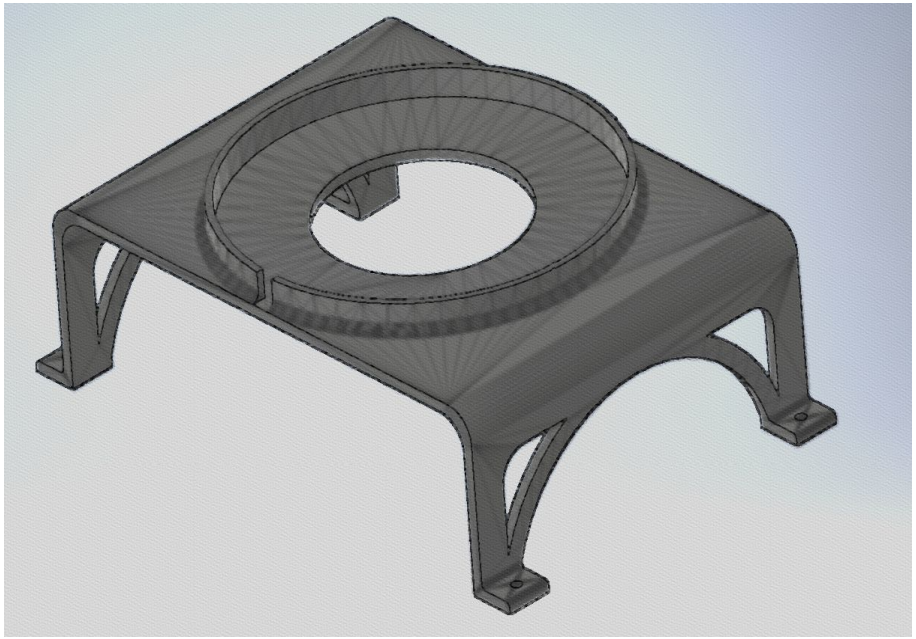


Tested code integration, gps works with old code

GPS Case

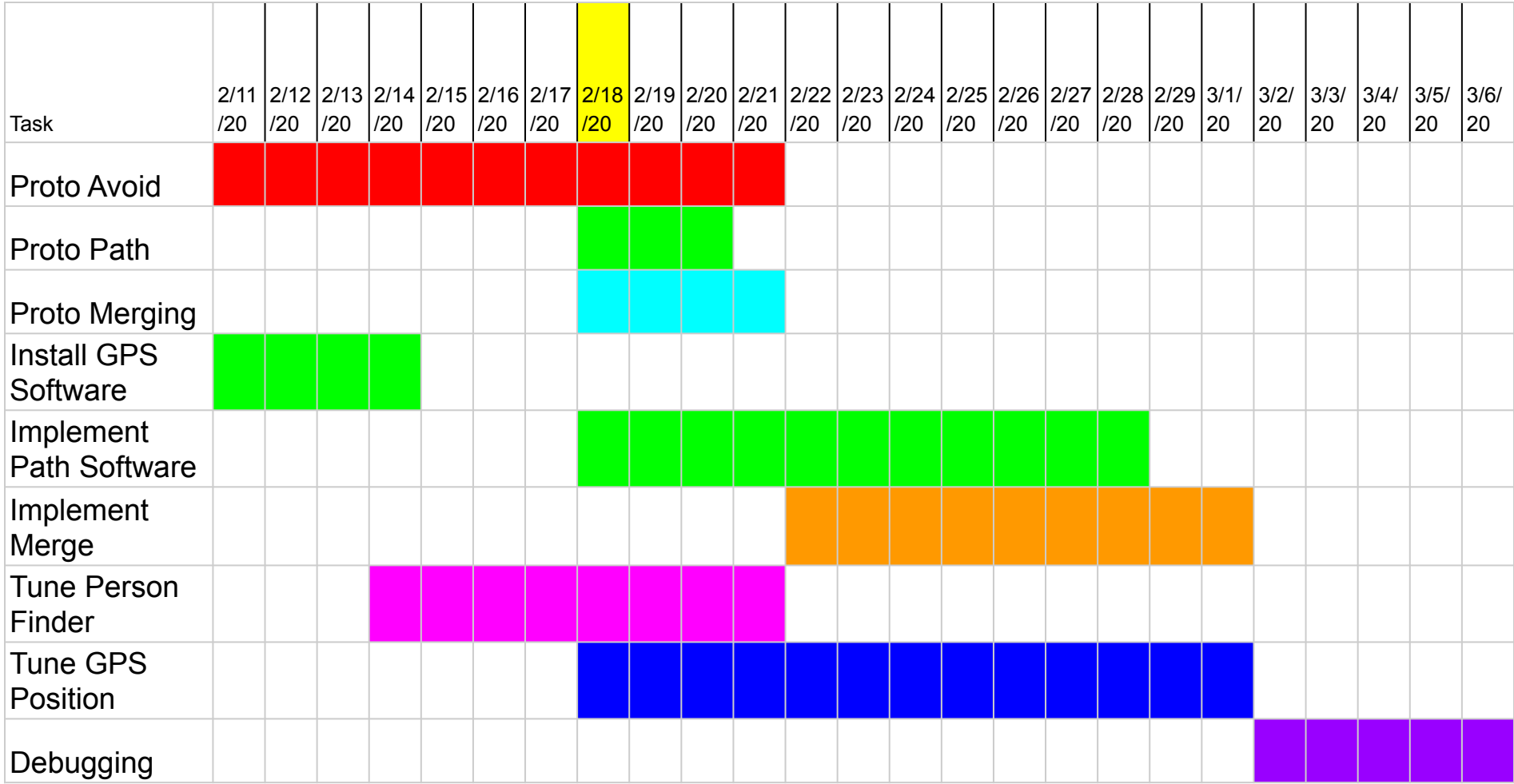


GPS Antenna Mount



Challenge Faced:

- Uknown NTRIP protocol
- UCSD Robocar Lab blocks port 2101
- Walls reflect GPS signals and make it look like you are somewhere else over time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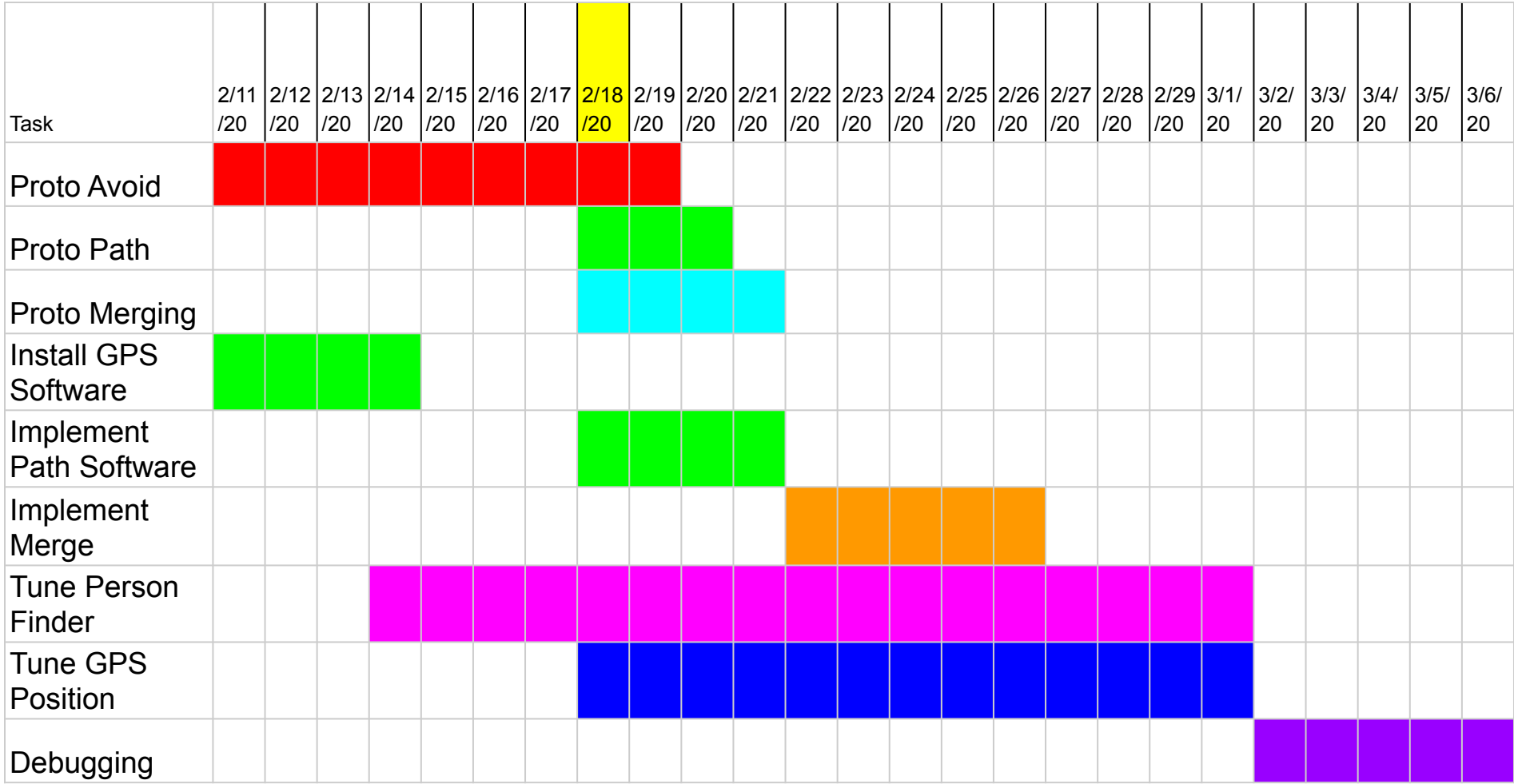
3/5/ 20
3/6/ 20
Proto Avoid
Proto Path
Proto Merging
Install GPS Software
Implement Path Software
Implement Merge
Tune Person Finder
Tune GPS Position
Debugging

Challenge Faced:

- People are different sizes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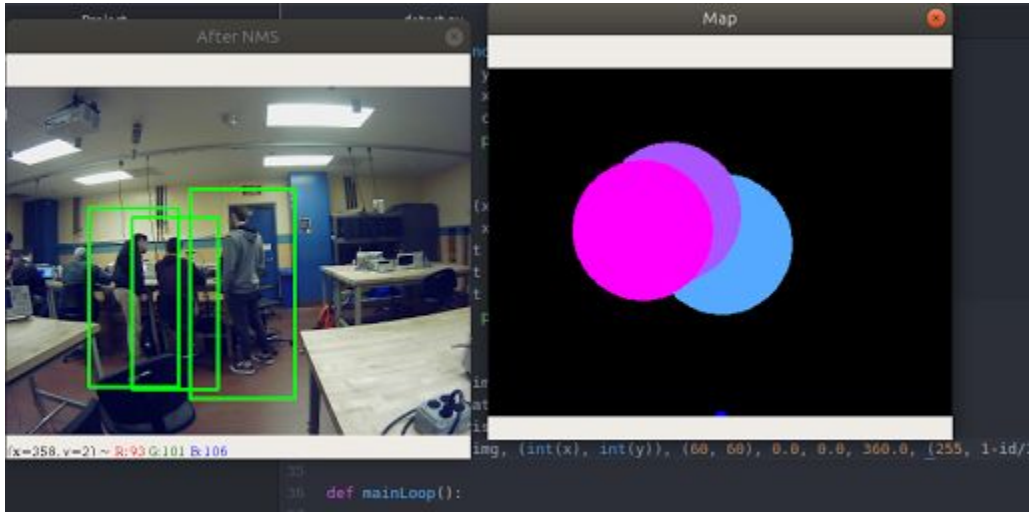

Also looked into previous project and how to integrate vision: 2 files to modify. https://github.com/Pumuckl007/ECE148Car

Must Have

- Avoid People
- Go near location

Nice To Have

- Summon from phone
- Follow predefined path
- Go to exact location

Lessons Learned

- OpenCV Builtin Pedestrian tracking https://www.pyimagesearch.com/2015/11/09/pedestrian-detection-opencv/
- Regular GPS is not accurate enough, RTK needed
- RTK GPS has very limited sub $900 options.

Go To Summoned Location

Predefined Path

Person Avoidance

Other teams have done:

- Person Detection
- Mapping & Navigation of Unknown Terrain

We are building upon the person detection by using it to change the robot follows. While unknown terrain would present an interesting challenge we hope to keep the project simple and will use pre built maps.

Planned Parts List

Part Number	Part Name	Function	Cost
1	GPS	Positioning	$40
2			
3			
4			