

## Week8

a.

Already done:

- We installed joystick control on computer and made joystick communicated with pi.
- We connected client to our PID program, and can control pitch and thrust with the joystick.
- We disabled keyboard control and wrote joystick control, and we implemented motor controller (kill, pause, un-pause, calibration).
- We tested different joystick input and implemented roll and yaw control.
- We could make our program die when our quadrotor out of 30 degree limitation/server control +c/client control +c, loop time>0.1.

To be solved:

- We try to implement the safety that make program die when joystick kill and we almost done it.

Updated:

We commented the heartbeat sending codes, and implemented safety function: program would die when joystick was killed.

b.

- We firstly could not make motor pause when we press calibration, and then we found out that we should pause before we do calibration.
- However, then we found we need press un-pause twice to make motors run again after calibration. Finally, we got to know that was because calibrating needs time. Thus, we printed out message when calibration done to make people know we can restart motor.
- We also got stuck when we wanted to control thrust, our quadrotor became unstable when we add thrust by joystick. Then we decrease the factor of joystick thrust input.
- In addition, our quadrotor tended to come back to 0 position when we kept increasing/decreasing pitch/roll angle. Then we decrease our Ki to reduce the power of I control.

c. – Felix-kim 50%

- Mengjiao Hong 50%

We learn and do everything together, and contribute evenly to our job.

d. Attached codes