ECE47700 brainstorming

Drone

First off, we should all meet if that works with folks, via Zoom as I think a lot of us are out of town.

I think for starters we should detail the essential requirements for success, but also brainstorm some interesting features we could do beyond just a stable flying platform. Such as GPS guidance, or image recognition / image processing, whatever people find interesting and we think we could actually pull off lol.

I think some other interesting applications we could consider are mapping out a route for the drone to learn, sort of like a racing line, in a similar vein I really like the idea of trying some sort of rough automated photogrammetry where the drone scans a 3D model of the environment or a certain object.

After a little bit of research it appears this is more common than I thought, this video has some good information on it though: <https://www.youtube.com/watch?v=Ar4LizWW9rQ>

Next we can branch it into plans for the hardware (motors, motor controllers, gyro/accelerometers, and processor), software (split it up into modules i.e. the individual hardware related code and then the algorithms necessary for each, so sensor acquisition & fusion, PID control loops and motor output, and radio receiver, etc.

Also, we should all meet as a team so I can go over what I’ve already learned from building these before, it can seem like a lot at first pass but the building blocks are all kinda the same across the board so I’ll just try to bring y’all up to speed and then find places where everyone is comfortable and feels interested.

I’ve got a Github initiated with this folder within it and other folders for source code, pcb design files, etc. Hopefully that will keep us organized and prevent any source code catastrophes.

Let’s just use this doc as a sounding board to put in ideas for what we could make the drone do aside from not crash, and go from there!