2/9/2021

* Aerial autonomy & manipulation project
  + Will be working on the simulation/system setup
* Px4 controller
  + get familiar with hooks, how to get it set up, how to transfer to real robot
  + <https://px4.io/software/getting-started/>
  + <https://docs.px4.io/master/en/simulation/>
* Create Readme for prerequisites for how to get simulation setup, information flow, etc.
  + Gain understanding of information flow, state switches when going from real to sim, then integrating with aerial autonomy codebase
  + Aerial autonomy package developed by ASCO
    - Runs various “missions” for the drone
    - Takeoff and landing, grasping, etc.
    - <https://github.com/jhu-asco/aerial_autonomy>
* Setup simulation, and interface between simulation vs real robot
  + Use gazebo
    - Look for already existing models of the IFO-S to utilize
    - Put stereo camera on gazebo sim
  + ROS Melodic / Ubuntu 18.04
  + MAVlink
* Drone is the UVify IFO-S
  + <https://www.uvify.com/ifo-s/>
  + <https://uvifyinc.atlassian.net/wiki/spaces/CP/pages/527630507/IFO-S+Technical+specifications>
* We’ll be using the Jetson Xavier NX instead of Jetson Nano
  + <https://uvifyinc.atlassian.net/wiki/spaces/CP/pages/1078427671/UVify+Jetson+Xavier+NX>
* Bi-weekly update meeting
  + Message Cora for more questions
* Drone cage
  + <https://www.flyability.com/drone-cage>
* **Summary of tasks**
  + First pass at what we talked about:
    - Build up simulation for PX4 in Gazebo
    - Document with prerequisite installs, how to set up, launch info, general notes (components, information flow, etc) (README or google doc)
    - Evaluate which models already exist that are similar to the IFO-S
    - Add stereo camera to the vehicle (other sensors as well?)
    - Analyze differences between what is running when running onboard vs in sim → sim to real transfer
  + Next step: integration with Aerial Autonomy