

Modification:

- If \$20,000 sonar must be implemented, we use sonar as a depth sensor (obstacle avoidance).
Sonar placed below camera A.
- purchase USB powered switch for turning on NUC
- second camera w/ fisheye lens on rear
- claw moved to the rear of the UUV
- claw begins opened
- buy a barometer

UUV Mission Procedure:

(camera A at front of UUV, camera B at rear above the claw)

- UUV receives "power on" command
- camera A is used to identify floating noodle in pool (using three regional viewing)
- when object fills all three tridents of camera A's FOV, send command (maybe #4)
- ~~-pause vision on camera A~~
- ~~-camera B is turned on~~
- ~~-when camera B finds the object, claw is activated and captures the object.~~
- ~~-camera B vision is paused~~
- ~~-camera A vision is resumed~~
- ~~-camera A returns back by reversing motors and identifying the second red noodle that is located at the starting position.~~
- Claw acquires target.
- camera A vision is paused
- camera B turns on
- Vehicle reverses back to starting position

Fail Safes:

- if mission has not started and communication is lost at beginning of mission for 5 seconds, UUV will:
 - talk with Pi then to the arduino (maintain altitude) to continuously release water in the bowel system to surface and stop mission.
- if connection works, resume by taking in water by the bowel system.
- turns on camera B only once.
- if camera B is not on, turn off vehicle and surfaces UUV
- if sonar detects something within 6 inches away, stop motors and reverse. (break from loop and resume code).

*** One fail safe not accounted for is what happens when UUV hits walls. ***

Caution:

- change value of target to match value of purchased pool noodle.
- camera picks up light that the human eye does not see which may disrupt functionality.

Future Considerations:

- add more regions on top of the trident to allow for smoother and potentially slower rotations.
- Torpedo (Do next year 2019).