**Week 7**

**TEAM MEETING**

***Cameron,*** *Diogo, Jose, Samuel, Yujui, Lio*

## Notes from meetings throughout the week

| **No.** | **Agenda and Minutes** | **Actions needed** |
| --- | --- | --- |
| 2/14 | Started to look at anti-cogging algorithms, found that Odrive had built-in one and tried to use it but ran into issues with Odrive configuration, the board was acting weirdly  Test initial DIY polymagnets and selection of magnets received from McMaster |  |
| 2/15 | Ray and Lio worked to figure out and solve configuration issues. Were not able to get anti-cog working  CAD development of the 2R prototype and build of custom components |  |
| 2/16 | After resetting and redoing the configuration, we are starting to get a better handle of what settings are important. Finally got anti-cogging calibration to work but hard to see a notable difference in results  Finalized assembling the 2R Robot prototype with DIY polymagnets, adjustable screen and finger pucks  Second carriage added to the gantry system |  |
| 2/18 | Meeting with Professors  1DOF Going Forward:   * Design screen/Magnet device->Cam * figure out limit switch->Ray * write basic impedance code->Lio   Mechanism:   * Narrow down the magnet selection (Team) * Get new methods of reducing friction (Diogo) * Do documentation of all prototypes (Team) * Produce shafts for new magnets (Diogo) * Mechanisms:   + Cable bot not worth pursuing   + Test out gantry with magnets (produce screen) (Jose)   + Test out cantilever on the Gantry (Jose)   + Test out pulleys on the 2R (Sam) |  |

## Weird Odrive Behavior

Things seem to randomly work

ODrive refusing to set control states

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## Notes From Meeting with Professors

### 1DOF

#### Aim to have stiff wall system working for next week

Best way to test impedance control - ask odrive for position of drive and connect a current (might gotten wording wrong here)

Arduino will solve cogging not the odrive - but apparently it has an anticog smth?

Team got the calibration to run, but no felt difference

If it becomes too much Bill is available to work together on his lab

We need to start including a magnet on the 1DOF to be able to evaluate the controls - for it will be challenging

Need a sensor - by adding another encoder ?

### Mechanism

playing with rotating and snapping magnets

Arm screen prototype

Not hard to start the motion

Understanding and optimizing condition number

Next up->try to design a 2 arm version

Magent friction might be overwhelming friction of both main design

Officially eliminating cable bot from here on out

Select best skew of polymagnets and then ask them about how to improve the design for our needed properties

For mechanism would be useful to move without glass as well as with

Remove magnet interface and compare both systems

How are we going to measure a system against the other? Strongly depends on the coupling - the degree to which inertia matters depends on it..(?) Perhaps time to bring the design requirements we established in the beginning

How is the 2R going to be driven? Cuz rn the gantry is more advanced since we already know the system/transmission better and built it w pre-existing parts

We need to start including the transmission elements, cuz without them we cannot really evaluate how it will feel at the end

Plan with teflon balls

Play with magnet distance to sense how different it feels?

Still explore lubrication and air bearings

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## POST MEETING

### 1DOF

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### Mechanism