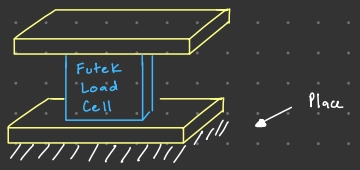
How I calibrated the **Futek Sensor**:

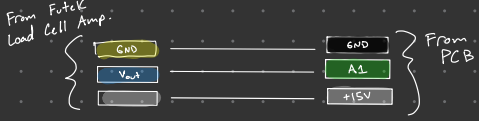
Since the Futek Load Cell can measure pulling and pushing force I calibrated the sensor for both (i.e. its full range) So I will go over both.

For Pushing:

① Setup the Device in this configuration



② Connect sensor to Electronics board and then turn on PSU (+15V)

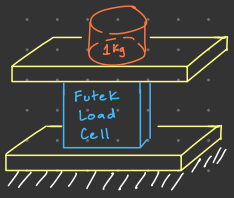


③ Get a set of known weights to place on the top

1) I used a combination of weights in the lab and gym weights I had (disk gym weights work great for this)

2) Ideally you want weights with a consistent increment (i.e. 0Kg → 1Kg → 2Kg ...)

④ Add the known weight and record the voltage value



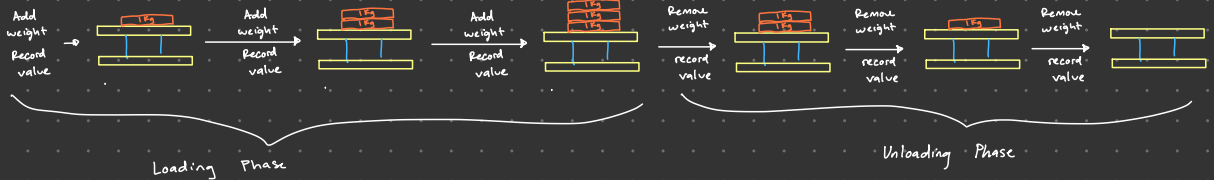
Note: You can record voltage manually (i.e. from arduino) or you can do this with LabVIEW to generate a txt.file of data (recommended)

check out Calibration Data Collection.vi under Practice Files (github)

⑤ Continue to record the voltage at different Known loads

Note: The ideal way to calibrate is with loading and unloading phases

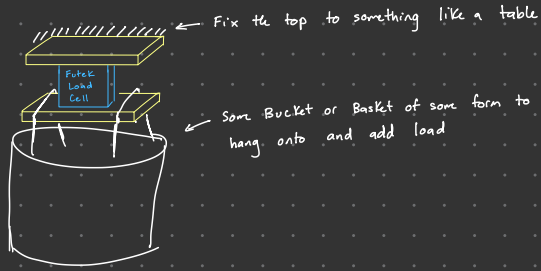
What I mean by this is you discretely add weight, record data until you get to your max weight and then you unload by discretely removing weight and recording data.



⑥ Finally using your program of choice (Matlab/Python) import the data and perform a linear regression to obtain the linear line equation that relates Voltages to Load (kg)

For Pulling:

① Setup the Device in this configuration



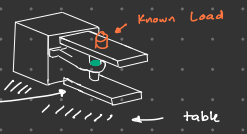
Do ② → ⑥ just as the Pushing but in this configuration

How I calibrated the Omega sensor:

For this sensor I used the calibration file that is included with the HX711-ADC arduino library (I will add this file on github as well under Arduino codes as `Calibration.ino`)

① To setup and run this code I think did this:

- Placing the whole device on a table (you may have to put something under since the electronics box is



not level with the gripping area)

② Once that is done, I verified that the readings were good against a scale (you can also measure the readings against the Calibrated Futek Sensor)

Setup something like this: