

Questions:

What does Dr. Jafari foresee as the end game of the experiment?

Can we decide this?

Does he have a preference in the data we output?

Does he want us to do something with this data?

Magnetometers

If we can get this same data from the Kinect would that be preferable?

How accurate can we get these to give us angle versus the Kinect?

Concerning Sensor demo

Able to boot up the code and see 1 sensor.

Working on getting two boxes to show up in one window

Difficult because have no relative frame to one another

Need to add more code to allow for a second input stream

Potentially workable by attaching together with known length

This would only work experimentally, as length between sensors will not always be known

Need to integrate this into Kinect global frame in order to make it work in our application

Experiments:

Characterize drift of motion net sensors

Characterize noise for 2-3 specific gestures for Kinect

$$\theta_{gyr}(t) = \theta_{gyr}(0) + \left(\int_{x=0}^{x=t} \omega(x) dx \right) + \delta t$$

$at+b$
↑
error

$$\theta_k(t) = \hat{\theta}(t) + \epsilon$$

↑
perfect reading

↑ error from kinect

$$\theta_k(t) - \epsilon < \theta_{gyr}(t) - (at+b) < \theta_k(t) + \epsilon$$

$\theta_{gyr}(t) - \epsilon = \hat{\theta}(t)$

fitting function

regression

OK

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$$\Theta_k(t) - \epsilon < \Theta_{\text{gyno}}(t) - (at+b)$$

$$at+b < \Theta_{\text{gyno}}(t) - \Theta_k(t) + \epsilon$$

$$at+b > \Theta_{\text{gyno}}(t) - \Theta_k(t) - \epsilon$$

