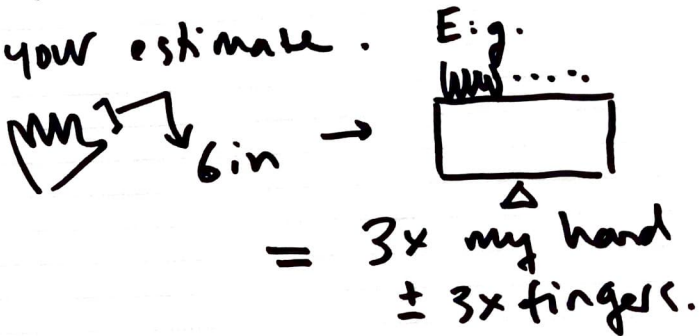
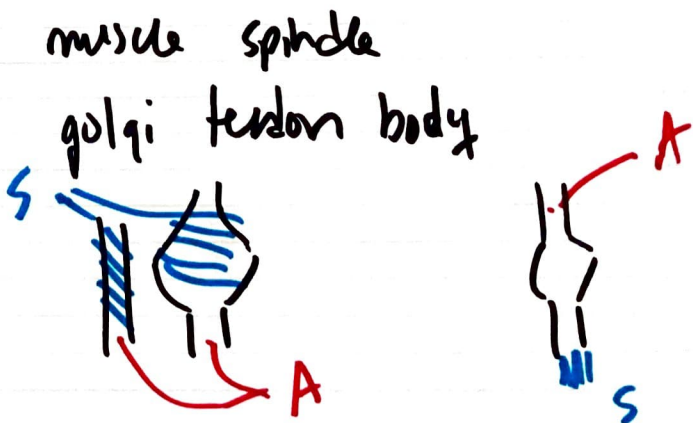


LOS : control

mindful exercise. Discover the dimensions of your own body + use it to measure the world. Put an error band on your estimate. E.g.

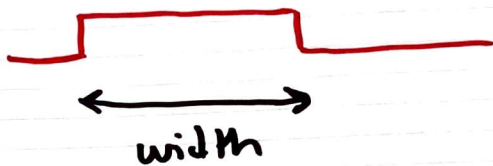


last time : encoders
proprioception



encoding info as duration

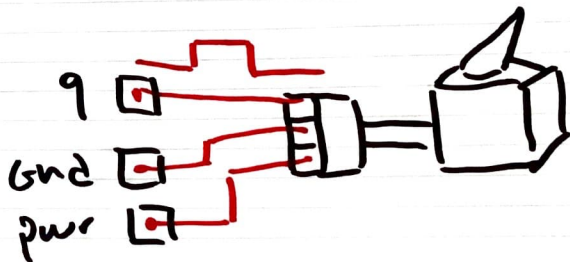
↑
pulse



change /
in formation
=
modulation

pwm

$$50 \mu s = 50^\circ$$



pwm(a)

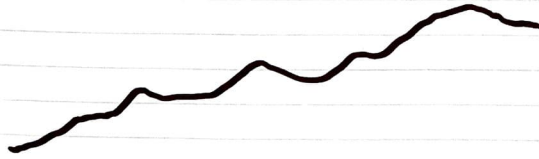
ϕ



+5V
0V
50°
0



can you
design the
pwm
pulse to
make this
graph?

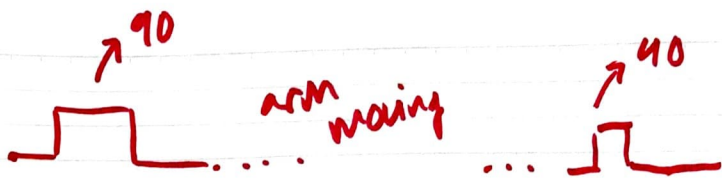


what if you want a drop?

rate of decay

if H +1 / tick
if L -1





PID control

proportional

integral control

derivative

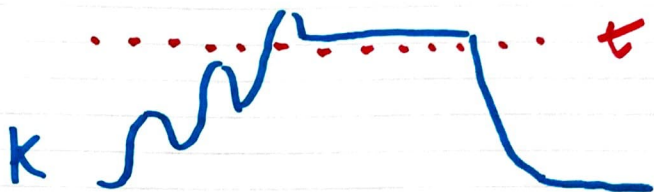
set point - encoder = error



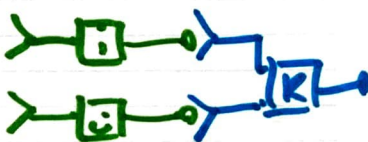
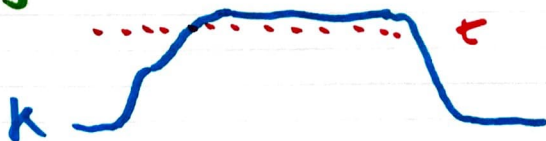
~ power



error resolution
measurement res.



i pulses / time increases
the likelihood that k fires.



pwm $\rightarrow$ increase a counter
neuron $\rightarrow$ increase potential diff (V)

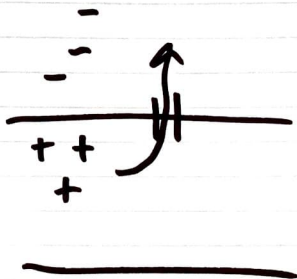
discrete vs. con't

clk in pwm . decay in cells.
electricity @ Speed of light

$\approx$ neuron logic.

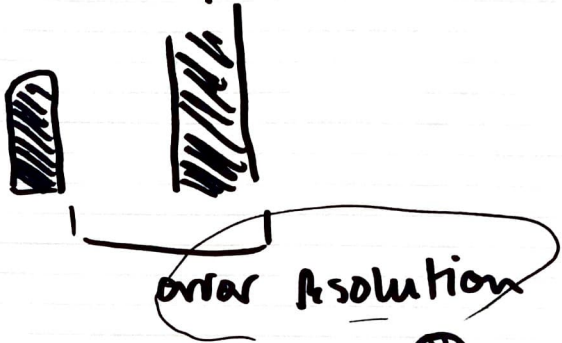
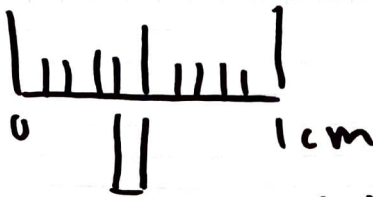


↑ has many physical processes to return to resting potential



↓ effect is rate of decay





→ friction

→ defining unit

→ loose connections backlash

→ signal noise

→ spaces between holes

→ drift → no ^{OK} "pre-T"

How does your body
deal with
error?

what's the process?

what does it "feel" like?