EECS192 Lecture 8
Mar. 8, 2016

Notes:

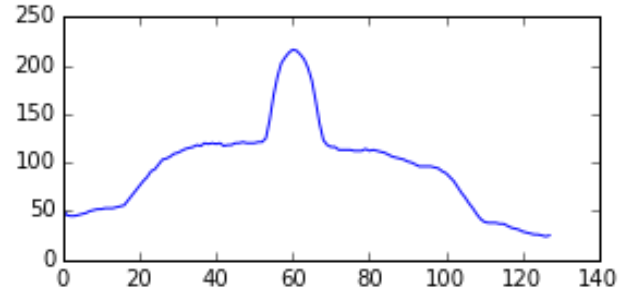
1. Check off-
    1. 3/11/2016: drop-and-run, velocity control, open loop fig 8
    2. Closed loop figure 8 drop and run
2. Community Spirit: PCB peer review, Piazza, helping fellow students
3. CalDay Sat. April 16 @ UCB, Freescale Cup at UC Davis
4. Parts orders: Digikey only. Check out ACE hardware for other parts. Order own parts Sparkfun, Adafruit…
5. Line sensor processing HW1 due 3/15 – upload iPython notebook to bcourses. (Will run on other data.)
6. Waterfall plot for line data
7. Lab safety/hygiene

Topics

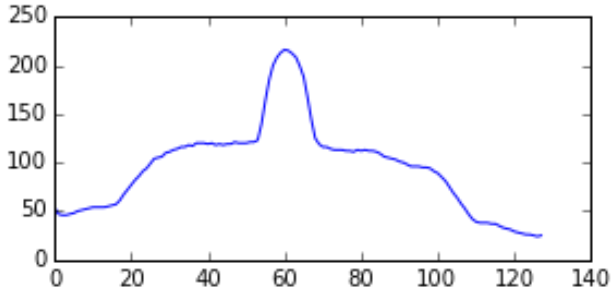
- Setting up for debugger
- Speed sensing/velocity control
- Velocity control detail
- Feedback control overview
- Bicycle steering model

TSL 1401 line sensor NATCAR 8 bit

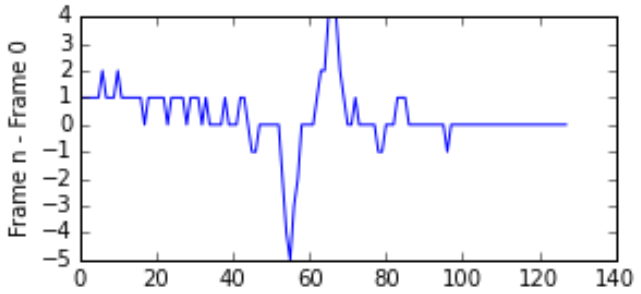
Frame 0



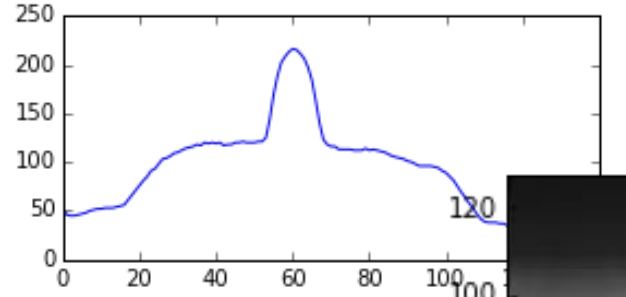
Frame 1



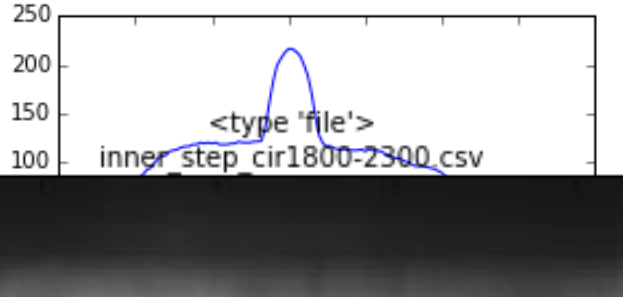
Frame 1-Frame 0



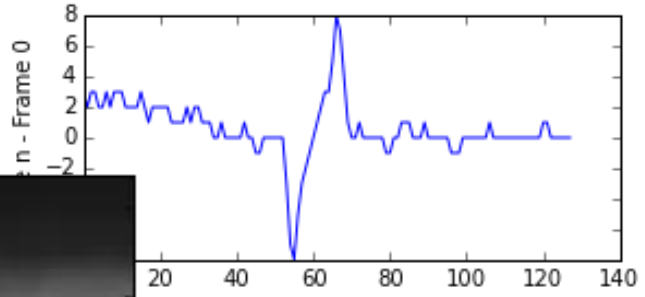
Frame 0

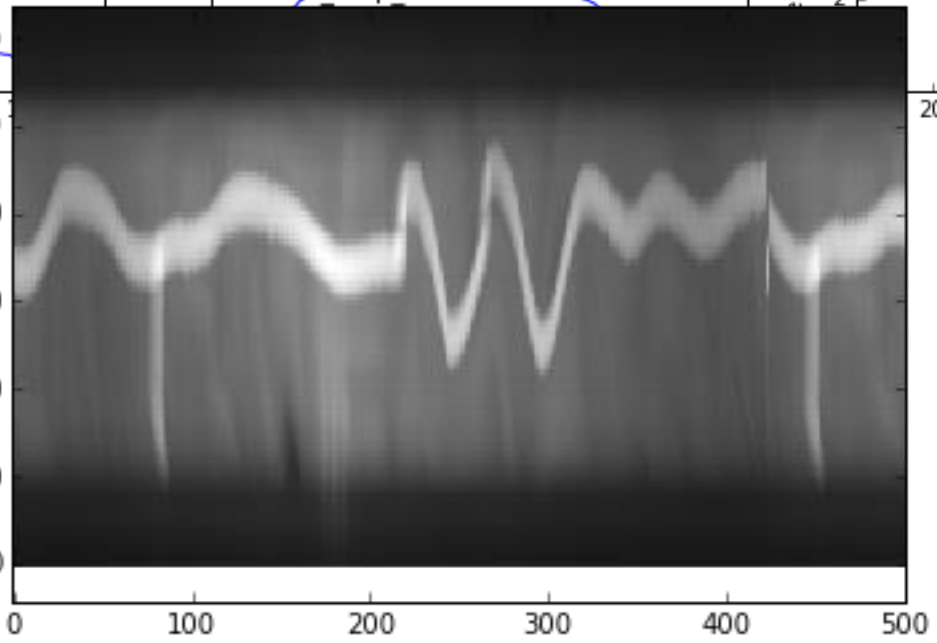


Frame 2

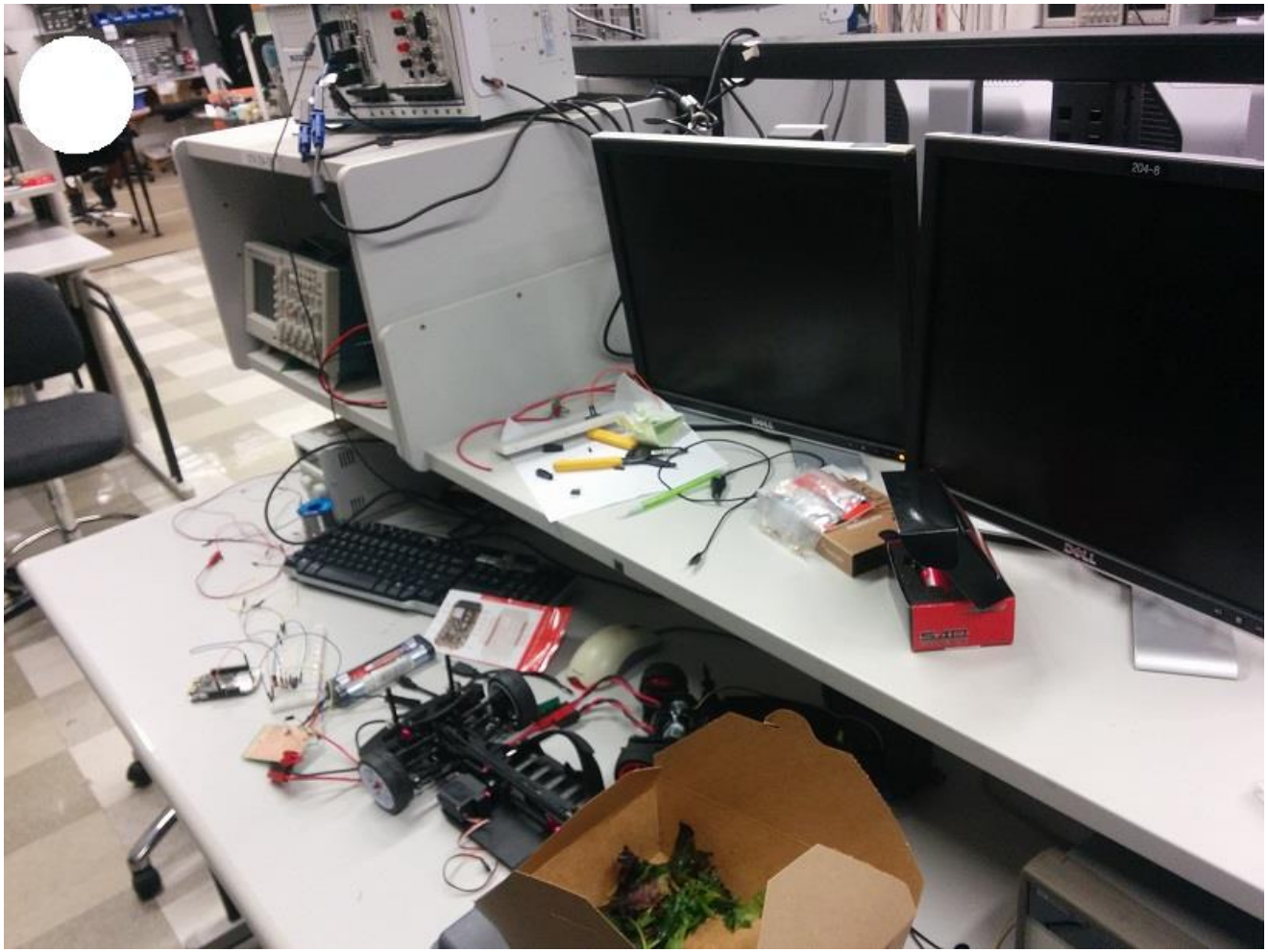


Frame 2-Frame 0



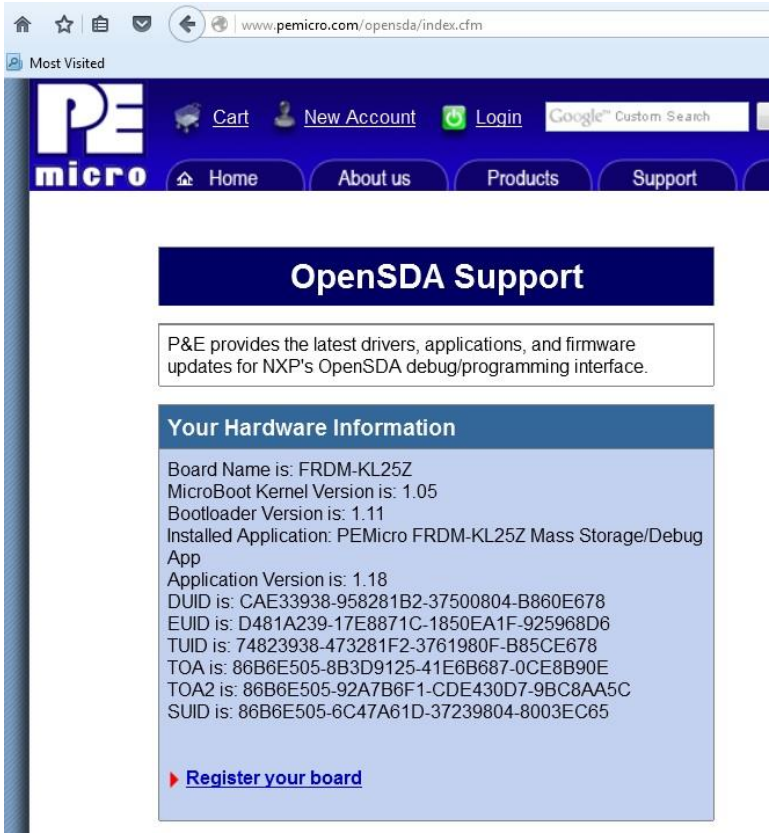


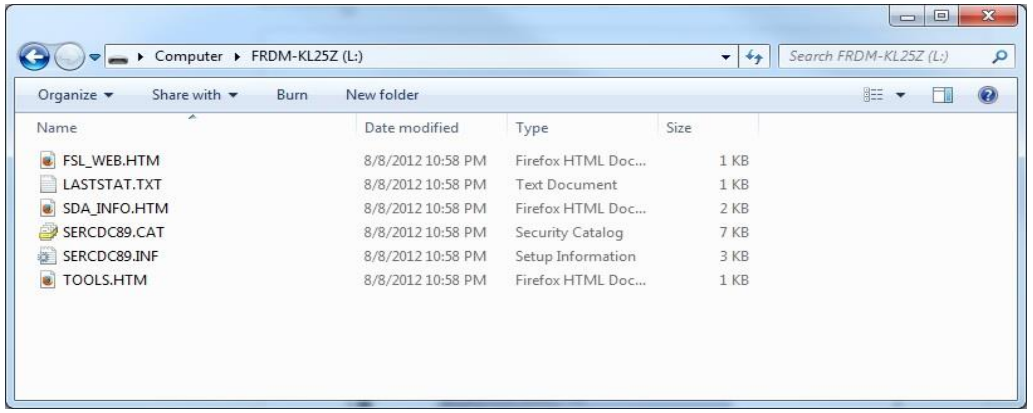
Lab Hygiene

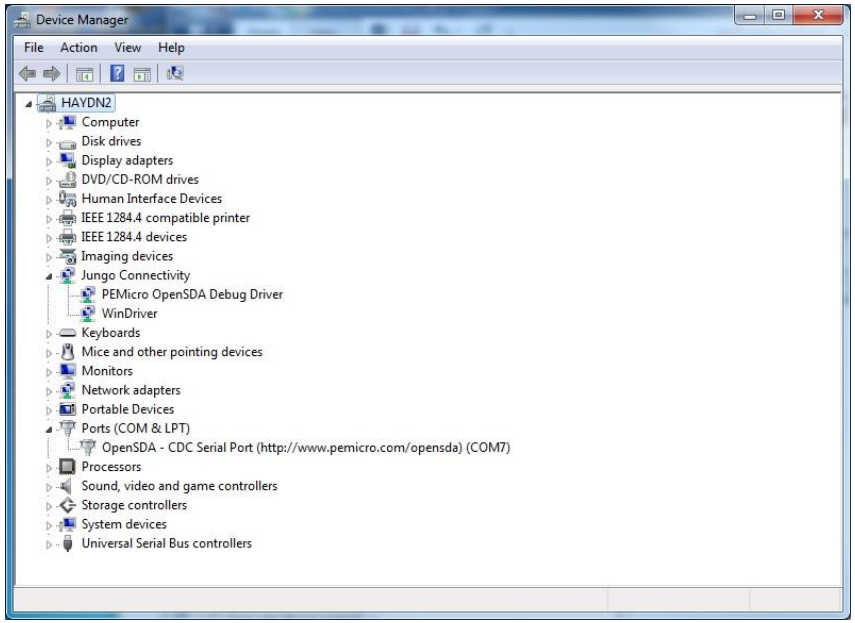


Setting up for debugger:

see new directions on Piazza







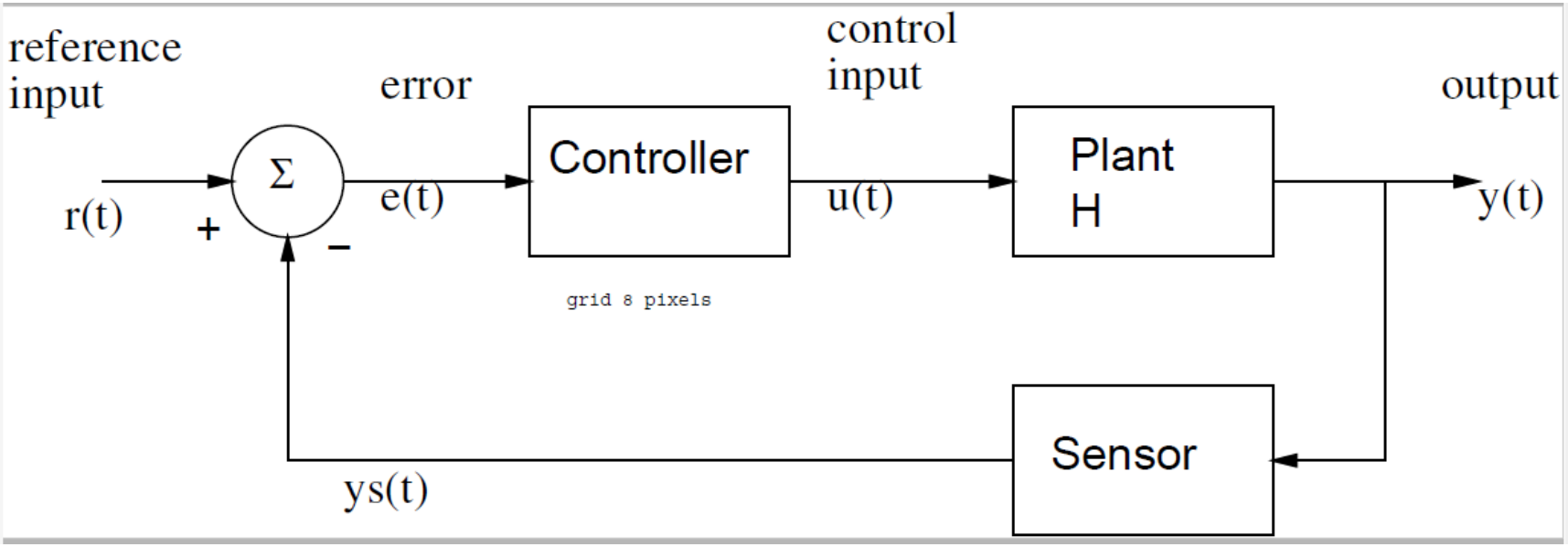
demo

Velocity sensing (recap)

V~ (change in angle)/(change in time)

On board…

Control overview



On board…

Proportional control:

U = kp*e = kp* (r-y);

Proportional + integral control

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U = kp*e + ki * e_sum;
e_sum = e_sum + e;
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