

EE 105 **Feedback control systems**

Detour: Kalman filters (and drone arms)

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What have you heard about Kalman filters?

Disclaimer

Kalman filtering is a statistics/estimation problem (EE 24 / 104),
and definitely not a feedback control problem (EE 105)

But we're doing it anyway...

Basic problem for the Kalman filter

I have a system running continuously

and some way to measure something I care about

How do I combine multiple measurements to get the best estimate?

Basic problem for the Kalman filter

I have a system running continuously

and some way to measure something I care about

How do I combine multiple measurements to get the best estimate?

What if I have multiple sensors?

What if the value keeps changing?

One example...

What if I had a GPS, plus an IMU?

or an accelerometer, plus a gyroscope?

Time for some math

Time for some MATLAB

Drones!

Form a team of 2 (we'll scramble teams for milestone 2)

Pick up your motors; other parts will be outside my office