

Balancing Robot

4. Control Systems Examples



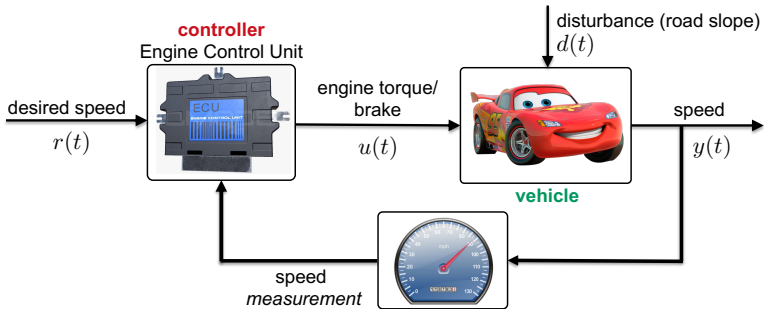
Some examples

There exist many examples for automatic control around us.

The Minseg is just one of them.

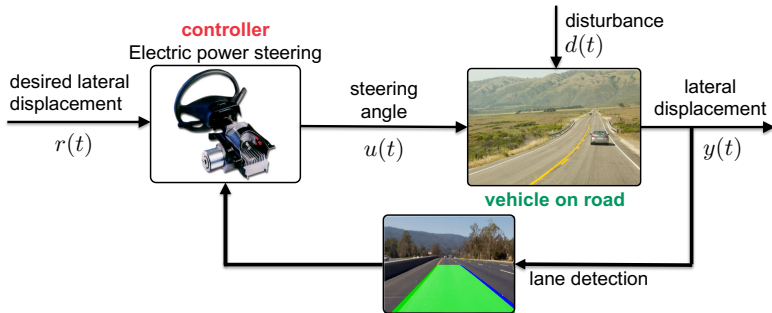


Automatic cruise control



- ▶ The vehicle speed must be controlled in order to reach and maintain the desired speed $r(t)$...
- ▶ ... in spite of changes of the road slope and the desired speed

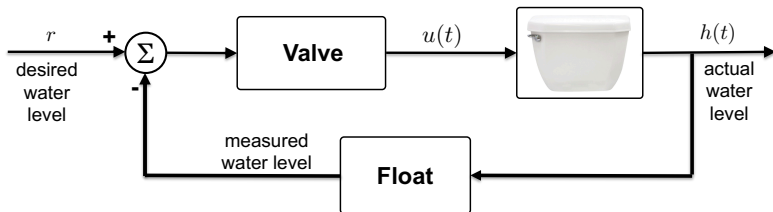
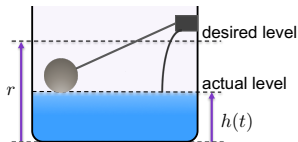
Automatic lane maintenance



- ▶ The steering wheel must be controlled in order to reach and maintain the desired lateral displacement $r(t)$ within the lane ...
- ▶ ... in spite of changes of the road curvature and of $r(t)$

An every day control system: the flushing toilet

- ▶ After a toilet is flushed, the water tank must be refilled to a desired level r
- ▶ This is done with a simple control system using a valve controlled by a floating ball



What do you think?

Where do you see other control examples around you?



What do you think?

Where would you like to see more control or automation in your daily life?

Is there anything that you would like to automate using control?



What do you think?

Where are the limits of control?

Are there parts in technology, medicine or your private life where you would not want to see any automatic control?

What would be the risks?

