Homework4

System Identification and Simulation

October 10, 2017

Deadline is October 27, 2017, 23:59 (MSK)

The task is to find best coefficients for pid controller of lego robot(any configuration) and explain values that you get. The task is individual - see variants below.

How to get lego set for robot:

- All lego sets are in the room 450.
- You could NOT take set away.
- Before leaving the room disassemble your robot and leave all as it was before.

Requirements for result are:

- In the moodle i want to see just one link to your project on github.com
- Project on github.com should contains all needed sources(code) and Readme.md file.
- Readme.md file should contains:
  - description of the project
  - description of the work process (what problems do you have and how you solved them)
  - explanation of the result values (how you got them)
  - explanation why do you think this values are the best
  - link to youtube video (not longer than 1 minute) that shows movement of your robot
- Be ready to repeat your work. I will ask some of you to show me in real.
- Make interesting difficult path and try to maximize velocity leaving movement stable enough(this item is for variants A,B,C)

Variant A: Follow the line by light sensor. Students:

- Ahmed Magdy
- Taimoor Shakeel
- Bakhtawar Rehman
- Geesara Kulathunga
- Konstantin Danilov
- Konstantin Turubanov
- Sultan Yerumbayev

Variant B: Motion along the wall with ultrasound sensor. Students:

- Stanislav Mikhel'
- Alexey Rodionov
- Mike Tavturin
- Alexey Koshechkin
- Nikita Dayanov
- Yannick Kouakam

Variant C: Azimuth movement with gyroscope. Students:

- Ruslan Rezin
- Svetlana Blinova
- Maksim Filipenko
- Mikhail Tilicheev
- Pavel Zhdanov

Variant D: Balancing a la segway with straight movement. Students:

- Oleg Bulichev
- Misha Bortnikov
- Fedor Berezyuk
- Aleksandr Fomenko
- Mikhail Ostanin
- Vladislav Ostankovich