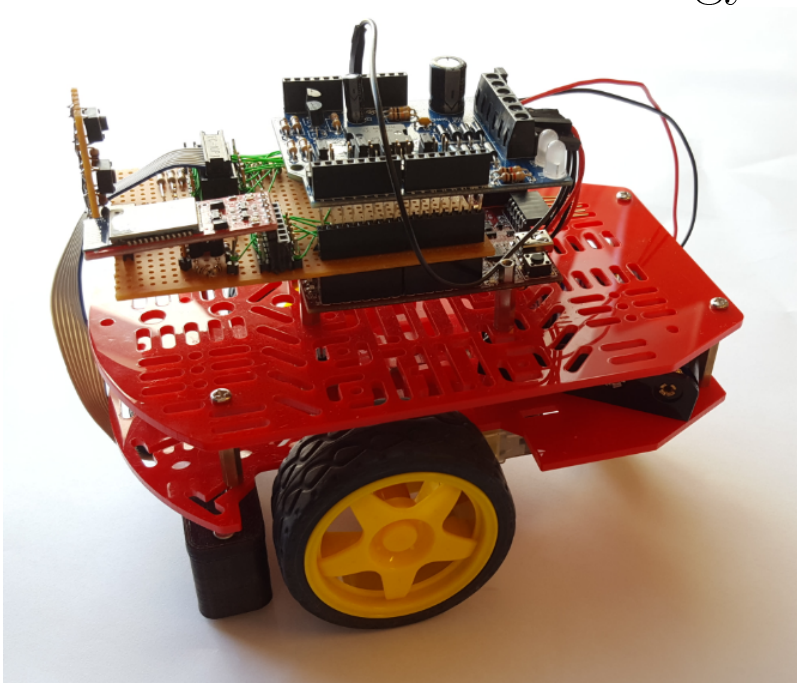
Uddannelse i virkeligheden

Fall Semester 2015

Line following robot

Group 2

2. Semester IT-Technology



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Supervisor: Jesper Kristensen - Steffen Vutborg

Uddannelse i virkeligheden

IT-technology
Sofiendalsvej 60
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Title:

SICK PEW PEW robot

Project Period:

3. Semester | Spring semester 2016

Projectgroup:

Group 2

Group participants:

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Martin Nonboe
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Supervisors:

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Preamble

This project was written by group 2, for the second semester on the IT-electronics education at university college Nordjylland, Sofiendalsvej 60. The project goal is to make a line following robot.

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Martin Nonboe	Nikolaj Bilgrau

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The problem presented to the group is how to make a robot move from point A to point B, with the help of different sensors, including ultrasound and infrared, and to make use of autonomous algorithms to avoid obstacles.

Problem statement:

- Bot should be able to move from A to B
- Should be able to stop at a predetermined point
- Manoeuvre around obstacles

2.2 Problem analysis

2.2.1 Mobility from A to B

The robot receives a coordinate to reach, and will use its own starting point to determine a direction to drive towards the given coordinate. The robot will utilize an H-bridge to control its motors and direct current through the motors. This way, the robot can effectively regulate speed and also steer itself autonomously.
To dictate how much current the motors receive, the programming will utilize pulse width modulation (PWM), this allows the motors to have a determined 'uptime', so that it drives and steers in the desired way.

The robot will also utilize front-facing sensors to detect obstacles. In the case that it detects these, it will utilize ultra-sound to determine size and shape, so that it can navigate past these and continue on its path towards point B.

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Gerne en kalender der viser dage arbejdet!

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Bibliography

[1] placeholderAuthor. *placeholderTitle*. 2016. URL: http://www.ucn.dk.