Crane Simulator: Remote Control a Wheeled Robot via CAN-Interface

As part of the OPTIMUM project, the university collaborates with the company DEMAG, a German crane manufacturer. To be able to implement and demonstrate new crane functions without the need to install an industrial crane equipment, a prototype robot needs to be developed. To reach this goal, the existing wireless remote control needs to be connected to the robot. This requires the extension of a Raspberry Pi with a CAN module as well as the processing of incoming CAN messages and generation of motor control commands. Furthermore, the robot shall simulate crane movements. Due to the limitations of a wheeled robot compared to a material handling crane, a translation of the movement commands needs to be developed.

The following tasks shall be completed:

- Development of a concept for the hard- and software of a CAN-interface for the robot
- Mechanical and electrical assembly of the CAN module onto the Raspberry Pi and robot
- Mechanical and electrical assembly of the wireless receiver onto the robot
- Implementation of the CAN interface and processing of control commands
- Development of a control program to translate crane commands to corresponding robot wheel commands for crane simulation

Project type

Bachelor’s thesis, student project

Requirements

Experience in programming (e.g. C, Python)

Supervision

M.Sc. Hannes Raddatz, M.Sc. Fabian Hölzke,
Dr.-Ing. Frank Golatowski

Contact

M.Sc. Hannes Raddatz – hannes.raddatz@uni-rostock.de
M.Sc. Fabian Hölzke – fabian.hoelzke2@uni-rostock.de

Telephone

0381 / 498 - 7290

Office

Institute MD, Building 1, Room 1339