Walking Module for SPOT

Graduate

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Introduction: SPOT is a quadrupedal robot by Boston Dynamics. Its capability of walking over rough terrain opens a new application field for autonomous robotics. Currently SPOT can walk well and maneuver around obstacles.
However, SPOT is not intended to execute missions on unknown terrain. The intended way to use this robot is to record a route once and then rerun this pre-recorded route. Since this robot can operate in almost any environment, fewer people have to go to hazardous areas.

Definition of Task: The goal of this thesis is to create an easy to use command issuing procedure. It should consist of the following parts:

1. A Startup program that takes control over SPOT and authorizes the user to issue commands.

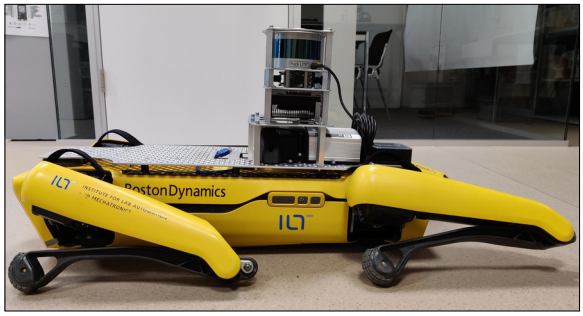
2. A way to receive commands and translate them to movement commands, SPOT can understand.

3. Issuing these commands to the robot.

4. Make any feedback and errors that occur during runtime available to an operator.

Result: The outcome of this thesis is a unified command issuing interface, which can be expanded and modified, if further functionality needs to be added. The commands get issued using json files, which have the same basic structure for any command. Furthermore, the robot provides feedback on its current state and error state. This too, is done by sending json files.

The robot SPOT with a LIDAR Add-On
Bachelor Thesis, D. Diedenhofen



The robot SPOT with a herbicide sprayer Add-On
Bachelor Thesis, S. Suter

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Subject Area
Automation & Robotics