Computer Technology Project 1

Nyman, Simon 202305077
Palm, Jakob 202307244

May 14, 2024

Abstract

- Motivation for making the project: search and rescue
- Describing the methods used
- What results did we get
- What can be concluded from the project

Introduction

- The purpose: prototype/down-scaled version of a search and rescue robot
- What is the goal: circuits, Embedded programming, control software, Linux/ROS, optimization
- Tools used for project
- Overall structure of report

Specification

Components setup

Raspberry pi

- Embedded programming on the pi
- Implementing and connecting additional Components using pi-io

RGB-sensor

- Short desciption of RGB-sensor
- Configuration

LiDAR

- Short desciption of LiDAR-sensor
- Configuration

Software setup

Network config

- Setting robot up for automatic and wireless network connection

VM

- Setting up a Linux VM

ROS

- Setting up ROS on VM
- Workingwith ROS

Methodology and design

Navigation

- Overall strategy and high level considerations
- Abstraction and testing

Implementation

RGB

- Implementation of code
- Testing and adjustment of readings

Implementation

LED

- Creating setup and code
- Combinig RGB readings to LED output

Implementation

Experimentation and testing

Conclusion

- Learnings
- What worked and what didnt

Discussion

- Possible improvments
- Reflection on strategy