FH Vorarlberg
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LaB3R

Laser Bladed 3-Axis Robot

Applied Robotics

Vorarlberg University of Applied Sciences
Master's in Mechatronics

Submitted to

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1 Task Description

This project is about constructing and building a 3-axis robot. The robot is equipped with two cameras and a red laser-pointer. The user can use a green laser-pointer to direct the robot into a different position. In order to avoid permanent sight-damage, the robot should avoid shining the laser into faces of surrounding humans. The following list contains the main working steps:

- draw and construct the 3-axis robot
- manufacture and assemble the robot parts
- develope the backwards kinematic
- implement the backwards kinematic in C and compile to dll
- find green laser point in 3D stereo image with OpenCV in Python
- plan path from current position to green laser position
- implement controller to correct deviance between red and green laser point
- optional: avoid human faces along the way

Appendices