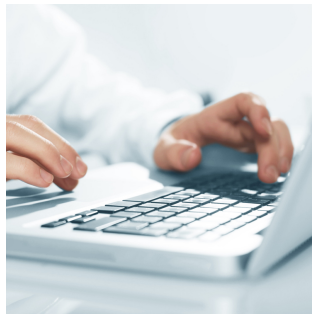


Master thesis, bachelor thesis, project thesis

Object localization based on 2D camera images

As part of the “MouSe” project, a mobile, environment-monitoring sensor system is being developed for manually operated industrial trucks to improve safety and work efficiency in intralogistics.

The aim of this thesis is to develop an algorithm for detecting the position of objects captured by a 2D fisheye camera. The objects detected are to be localized relative to the camera position with the goal of being able to display their positions in a 2D bird's-eye view. YOLO, for example, can be used as the basis for object detection. The camera data is to be processed using a ROS2-based system architecture.



Your tasks

- Literature review of existing approaches to person detection
- Design of a ROS2-based system architecture for processing camera data
- Implementation of an object detection algorithm (e.g., YOLO-based)
- Extension for robust position estimation when people are partially visible
- Integration and visualization of the results in a 2D top-down view
- Evaluation of the developed system in terms of accuracy, robustness, computational complexity, and latency

For a student research thesis/bachelor's thesis, the workload may be reduced in proportion to the time allotted for the thesis.

Your profile

You are studying one of the following subjects:

- Mechanical Engineering
- Industrial Engineering
- Production and Logistics
- Mechatronics and Robotics
- or a related field

Are you interested in robotics, image processing, and algorithms? And do you enjoy learning new topics on your own? Then please feel free to apply!

You should already have basic programming knowledge and some experience with Python and ROS2.

Good written and spoken German and English skills are required.

We offer

- independent work
- flexible working hours
- well-equipped workplaces
- home office by arrangement
- test execution
- long-term cooperation if necessary



Bitte sende deine aussagekräftige Bewerbung in einer einzigen PDF-Datei an jobs@iph-hannover.de.

Die Bewerbung muss Anschreiben, Lebenslauf sowie Prüfungsleistungen des Studiums / Zeugnisse enthalten.

Contact



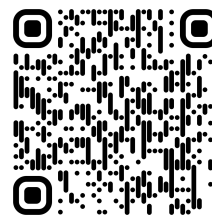
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