fml – Lehrstuhl für Fördertechnik Materialfluss Logistik
Fakultät Maschinenwesen
Technische Universität München

Object Detection with AI in Intralogistics

Initial Situation

For safe navigation of mobile robots, they need to know their environment. Today, usually map models in combination with 2D-LiDAR sensors are used for this task. Obstacles can only be avoided by implementing LiDAR-safety-fields without knowing which type of object it actually is.

With object detection as a first step, not only path planning could be optimized but also – by embedding the perception in an environmental model – critical situations e. g. by crossing forklifts could be avoided.

Scope

Goal of the project is the development of an object detection algorithm based on camera data for automated classification and localization of different object types within the context of intralogistics.

Possible Work Packages

- Identification of requirements
- Identification of suitable object detection algorithms based on the requirements and available data
- Implementation of a training pipeline
- Implementation of the earlier identified object detection algorithms
- Evaluation

Prerequisites

- Technical course in bachelor or master
- Knowledge in Python and Pytorch
- Structured, independent and diligent way of working
- Good German and/or English language skills

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