

Bachelor/Master thesis

Safe Human-Robot Collaboration of Self-Driving Chassis using a Projected Light Fence

Announcement from 28.08.2018

Start: At the earliest

Your profile:

- Technical studies
- Motivation and commitment
- Interest in the field of automation and image processing

We offer:

- Competence development in the field of Computer Vision
- Practical work with excellent hardware
- Early start possible and desired
- Intensive support and interdisciplinary exchange

Initial Situation:

The production of new vehicle concepts like electric cars leads to high financial risks, due to expensive production systems. Considering current trends, the automotive industry has a need for more flexibility and low-invest assembly systems.

In the final assembly, self-driving chassis realize an agile low-cost assembly. An early implementation of the electric powertrain and the battery enables the chassis to move autonomously without any transport infrastructure. To assure workers' safety, the chassis needs to stop when humans come to close.

Your job:

The aim of the thesis is to develop and implement a safety concept for the self-driving chassis. Therefore, it is necessary to project an adaptive light frame around the vehicle. Obstacles are then detected by checking the frame's shape.

The following work packages are derived from the task:

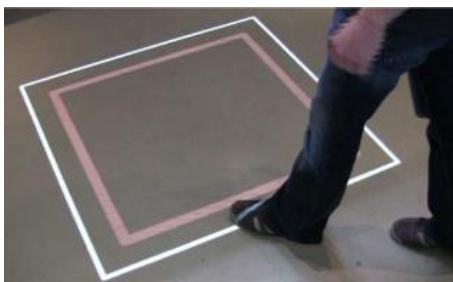
- Literature research in the field of safe human-machine collaboration and computer vision
- Implementation of an adaptive safety frame
- Implementation of a frame checking algorithm
- Evaluation in the demonstrator

Have we piqued your interest?

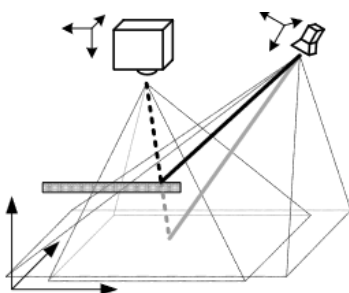
Get in touch with us:

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Quelle: Fraunhofer IFF



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