

# Bachelor/Master Thesis

## *Indoor Localisation and Mapping using Multi-Vision System for Self Driving Chassis*

**Announcement from 10.09.2018**

**Start:** At the Earliest

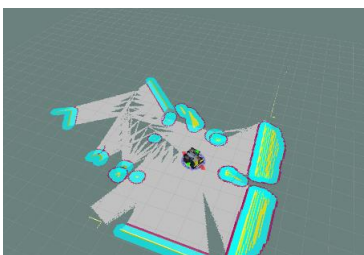
**Initial Situation:**

The production of new vehicle concepts like electric cars, is accompanied by 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 of electric vehicles, self-driving chassis realize an agile low-cost assembly concept overcoming the need for any transport infrastructure.

**We offer:**

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

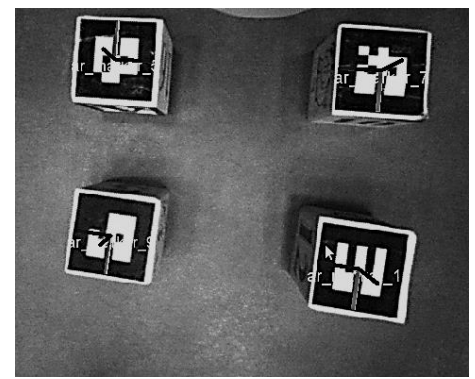
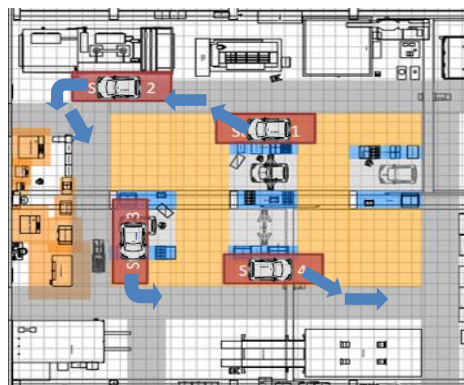


**Your Task:**

The aim of the thesis is to develop an indoor localisation system using multiple ceiling mounted cameras based on AR markers. For this purpose, different marker based localisation techniques have to be implemented and evaluated. Apart from marker detection a 2D occupancy grid of the hall has to be created containing both static & dynamic obstacles.

The following tasks are to be completed as part of the thesis work:

- Literature research in the field of AR marker detection
- Creation of a 2D occupancy grid map of the production environment using only the cameras
- A user interface to visualize and control the process
- Evaluation using the demonstrator



**Your profile:**

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

**Have we piqued your interest?**

Get in touch with us:

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