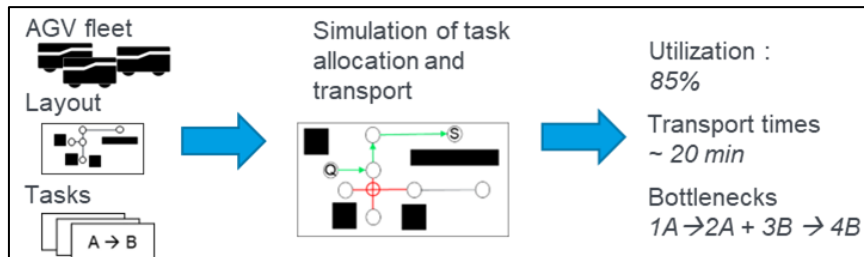


## Bachelor Thesis/Bachelorarbeit

# Requirement analysis for a Simulation of Control Systems for Automated Guided Vehicles and the Recommendation of an Environment



**Setup:** Our group at the IFL is currently setting up an experimental environment to study production logistics. During this work you will be part of our team of students and academic researchers from different fields of study and can take an active part in our current research.

**Problem:** Controlling robots on the shop floor is still one of the big challenges in intralogistics. By providing an open-source control system, that can orchestrate robots of different manufacturers we are filling an important gap. To validate control strategies a simulation is needed, that can depict a simpler, but still accurate enough model of the real-world environment.

**Task:** To find a fitting environment to simulate our fleet control, a requirement analysis is needed. You will define the necessary boundary conditions and investigate different simulation methods. To make a recommendation of an environment, minimal examples are implemented, and the results are evaluated.

**Prerequisite:** You like to work on new concepts? You are interested in how problems are solved in the industry? You want to get started in automation and robotics? Then this bachelor thesis is the perfect start for you. Programming experience can be useful but is not required.

**We offer** a work with practical relevance and a proximity to current research topics. The support includes weekly meetings with your contact at IFL. We are also interested in a long-term cooperation as a working student after you are finished with your work.

Not really your topic, but you are interested in the general topic of mobile robots, automation in logistics and practical work? Feel free to contact us and we can try to find a fitting topic.

**Field of research:**  
Robotics and Interactive Systems

**Content of this work:**

- Experimental
- Theoretical
- Practical
- Simulation
- Design (CAD)
- Graphic design

**Studies:**

- Mechanical Engineering
- Mechatronics
- Industrial Engineering and Management

**Starting:** as soon as possible

**Language:** deutsch/english

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