Karlsruher Institut für Technologie

Institut für Fördertechnik und Logistiksysteme

Bachelor Thesis

Development of a modular robotic platform for use in an omnichannel supermarket

Omnichannel supermarkets enable customers to not only shop conventionally in-store but also provide the service to pick-up remotely placed orders. This creates new logistical challenges when it comes to sharing resources for both type of customers. The goal of this research project, amongst others, is to optimize the share of inventory and material handling equipment across both services. For this reason, a robotic platform is to be constructed, which can move around the supermarket, picking, sorting, and packing customer orders.

Tasks

- CAD based development of a safe modular robotic platform
- Conducting market research on readily available materials and mechanisms
- Integration of various entities that enable picking, sorting, and packing
- Documentation and creation of manufacturing drawings

There are certainly quite a few more tasks here and we are welcome to discuss interests and strengths when assigning tasks.

Requirements

- Committed and independent work
- Good knowledge of engineering mechanics and mechanical design
- Experience with CAD a must
- Experience with programming languages and simulation software an advantage, but not a must

Above all, it is important to show initiative, fundamental interest, commitment, and to enjoy familiarizing yourself with new topics.

You are offered with

an exciting topic, in which creativity, own ideas and suggestions are to be brought in. The range of tasks is characterized by its versatility.

Please send inquiries by e-mail with your curriculum vitae in tabular form and your current transcript of grades.

Research area:
Material handling

Type of work:
☒ Experimental
☐ Theoretical
☒ Practical
☒ Simulation
☒ Constructive (CAD)

Study course:
☒ Mechanical Engineering
☒ Mechatronics
☐ Electronics
☐ Informatics
☐ Information Technology
☒ Industrial Engineering

Start: Immediately

Language: German/English

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