Towards Intuitive Industrial Human-Robot Collaboration

CollRob Project Overview

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Key facts

- 4 year funded research project
- 7 research groups

Goals:
- Human-Robot-Collaboration
- Intuitive interaction
- Human-centered design
- Newest sensor technologies
- Design industrial application scenarios
Detailed research areas

- Interaction
  - Context-sensitive feedback
  - Tied input modalities
- Kinematics & Safety
  - Dynamic safety zones
  - Redundant sensitive manipulation
- Planning
  - Domain-independent symbolic planning
  - Dynamic interference handling
Use-Cases and Demonstrators

- Building collaboratively tangram figures as a representative for an assembly task in the industry
  - One Person and one serial manipulator
  - Sharing a common workspace
  - Working at the same time

- A sensitive mobile manipulator
  - Delivering parts to workplaces
  - Moving area is shared with other humans
First Demonstrators finished

Interaction study in 2018
- Objective and subjective evaluation of the interaction system

Automatica prototype 2018
- Mobile manipulation scenario
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