Workshop on Closing the Gap between Action and Perception to enable robots to learn, adapt and react in real world scenarios

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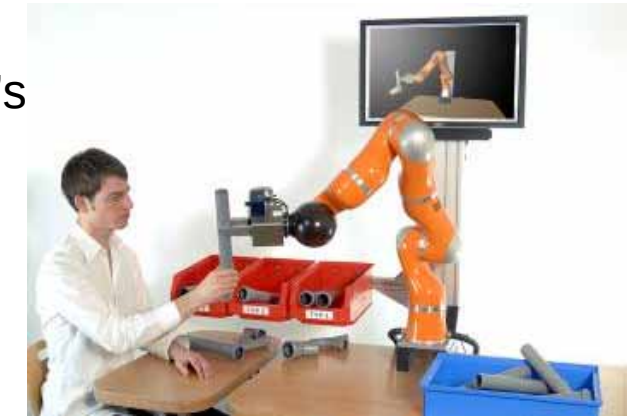
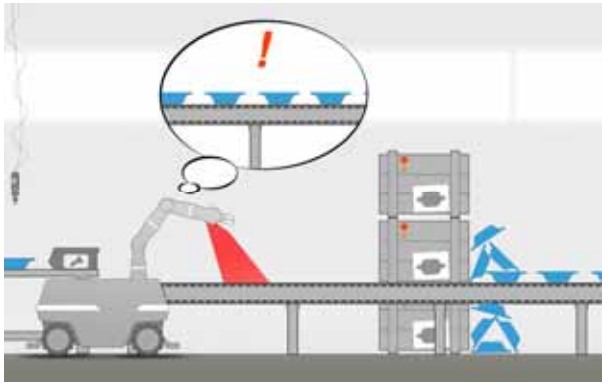
Motivation

- Current robotic systems are mostly capable of sensory verification and update of static configurations of the environment
- The validation is performed on a static snapshot of the scene
  - Changes in the scene are resulting from the robot's actions
  - Known from a process model
- Robotic systems will operate in unstructured environments
  - Direct interaction with people
  - Anticipation of actions to ensure safety and robustness during operation
- Required:
  - Analysis of the temporal evolution of perceived information in order to understand the actions in the scene.





Objective

Assess future research directions for perception abilities in order to operate robotic systems in real-life scenarios as well as to identify working approaches

Agenda

- Welcome
- Keynote by Darius Burschka (TU Munich): “Semantic Perception for Seamless Integration of Technical Systems into Everyday Life”
- 15 min presentations by:
  - Zoltan Marton (DLR): “*Synergies of Motion Planning and Visual Perception by Reasoning about Possible Outcomes*”
  - Todor Stoyanov (Örebro University): “*Perception and Manipulation for Industrial Robots in the Context of the FP7 RobLog Project*”
  - Ville Kyrki (Aalto University): *“Combining tactile and visual perception and loop closing through actions”*
  - Jeannette Bogh (MPI*): “Towards robust robotic manipulation through continuous object and arm tracking”*
  - Oscar Martinez Mozos (U. Lincoln): *“Long-Term Perception in Service Robots”*
- Plenary discussion