Call for platforms
Standardizing robot manipulation learning
`http://www.msrm.tum.de/en/rsi/icra19_workshop`

The workshop on *Bringing perception-based manipulation to the real world: standardizing robot manipulation learning* will be held at ICRA in Montreal, Canada on May 23rd, 2019 and aims for the definition of an affordable and accessible standard platform with the purpose of benchmarking/objectively comparing robot manipulation learning approaches. This first call is focused on *static single arm* systems. Future calls will include *mobile single arm* systems and *bimanual / humanoid* manipulation.

Theme

Manipulation is the key skill to affect, interact with and learn from the environment. In recent years we have seen many successful learning approaches in a variety of manipulation tasks, relying on different robotic arms, end-effectors, perception systems and computational resources. However, the heterogeneity of these setups is hindering researchers from focusing their efforts on the key open issues and is preventing them from performing objective comparisons. Companies and research institutions are invited to submit their proposals for a standard single-arm perception-based manipulation learning platform. Compared to other efforts, in this workshop we aim to define a platform and scenarios, instead of particular benchmark metrics.

Platform

The platform should consist of the following components:

- Robot manipulator
- End-effector
- Camera
- Minimum requirements for a compatible computer system

Platforms will be evaluated in terms of their *affordability*, *availability*, the *capabilities of their interfaces* and their *ability to perform the benchmark tasks* described below. Specific requirements can be found at the workshop website.
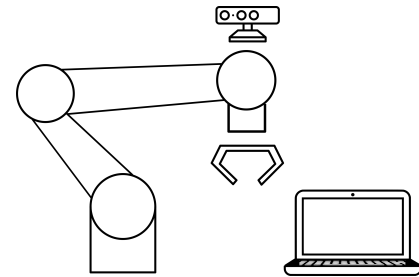
Components of a *single arm, perception-based manipulation learning platform*

Tasks

Submitted platforms must be capable of performing the following tasks in different domains:

Industry:	Gear assembly, sorting screws, shaft insertion, box stacking
Service robotics:	Key insertion, book stacking, door opening, folding clothes

Concrete task and experimental setup definitions can be found at the workshop website.

Call for contributions

Participants are invited to submit platform proposals to icra19workshop@msrm.tum.de. Please read the submission instructions at the workshop website.

Important Dates

Submission of proposals	3.5.2019
Acceptance notification	10.5.2019
Workshop presentation	23.5.2019

Organizers

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Support of IEEE RAS Technical Committees

Committee for Robot Learning (Knepper, Kober, Takano)
Committee for Computer & Robot Vision (Burschka, Kosecka, Rusu)
Committee on Collaborative Automation for Flexible Manufacturing (Ding, Li, Chao)