

**KUKA**



# RobDREAM - Optimizing Robot Performance while DREAMing

Intro at the „ Teaching by Demonstration for Industrial Applications“ Workshop



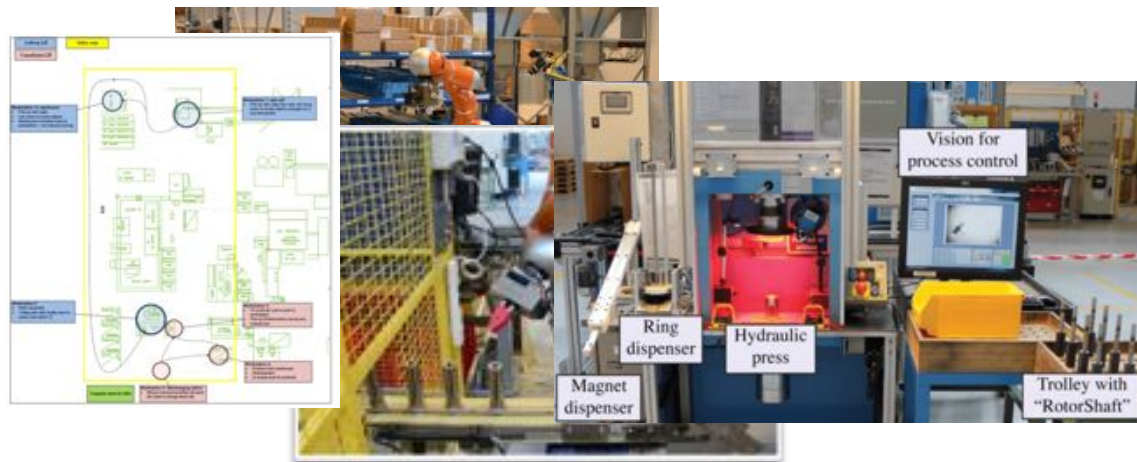


## Why should robots DREAM?

**Because a robot's life is complicated enough already?**

A robot's job description:

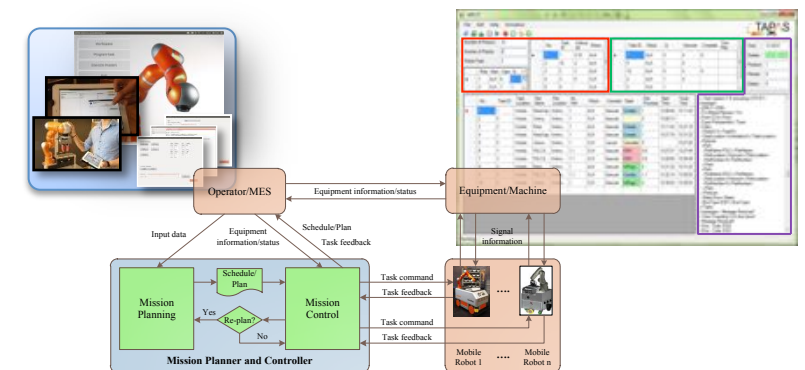
- High degree of flexibility required
- Interaction with a objects, machines, other robots
- Ability to work in complicated conditions
- Talent to optimise solutions independently
- Willingness to work with humans



**Because instructing a robot is not an easy job?**

You need to be a:

- Process expert
- Expert programmer
- Computer vision specialist
- Robot navigation specialist
- Path planning specialist, modelling specialist
- ...

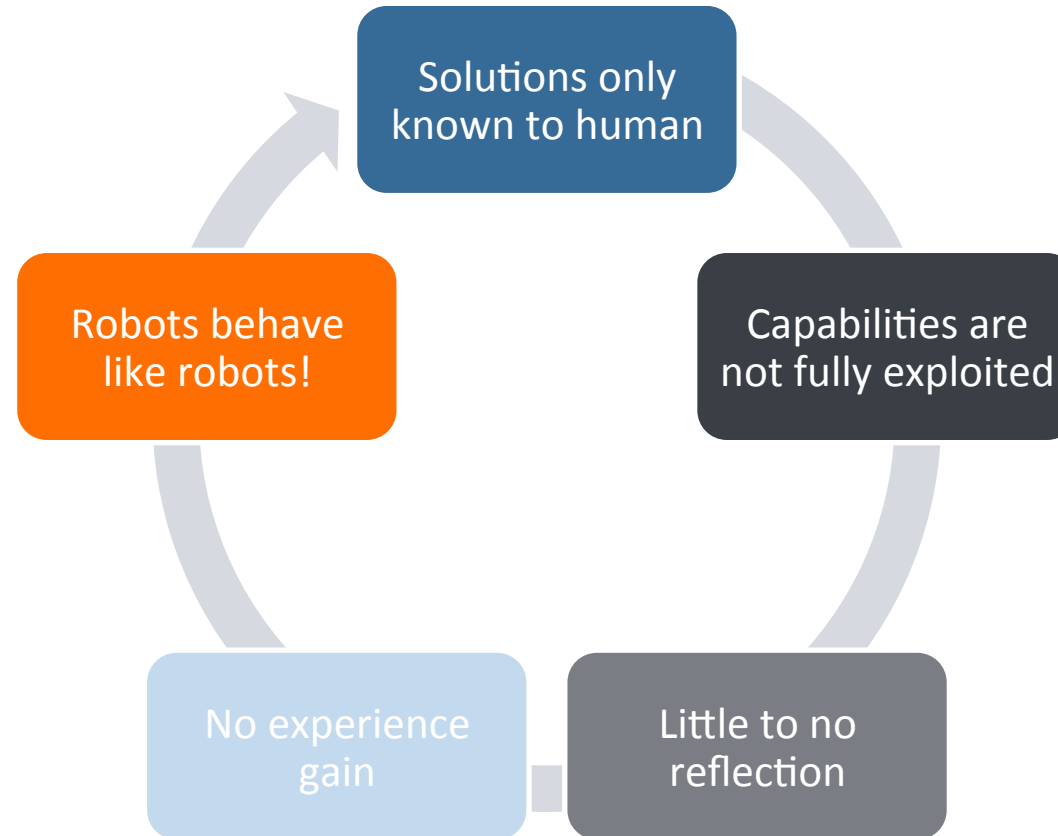
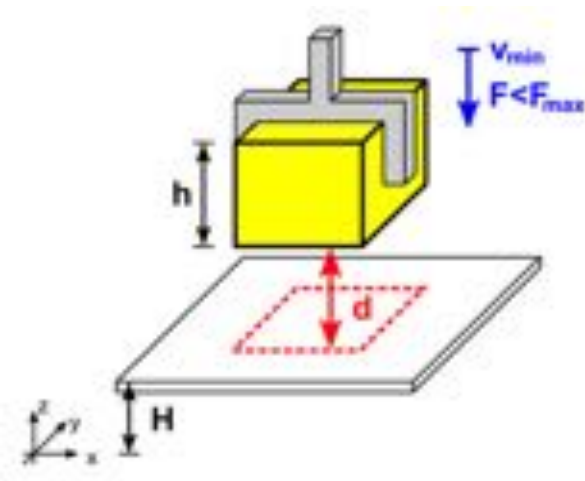




## So, what is the problem?

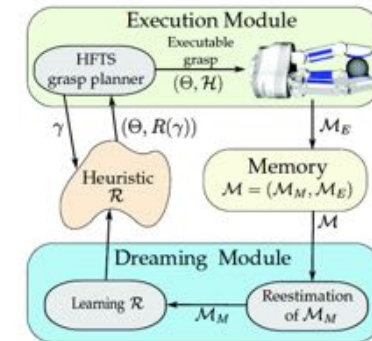
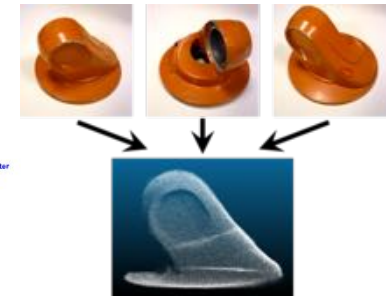
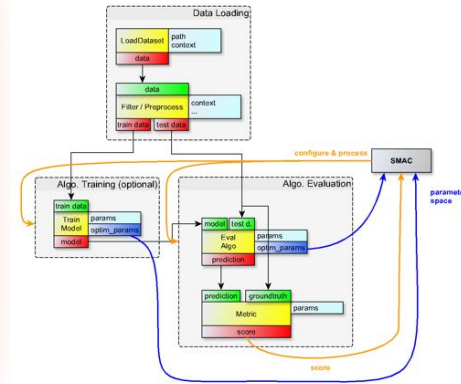
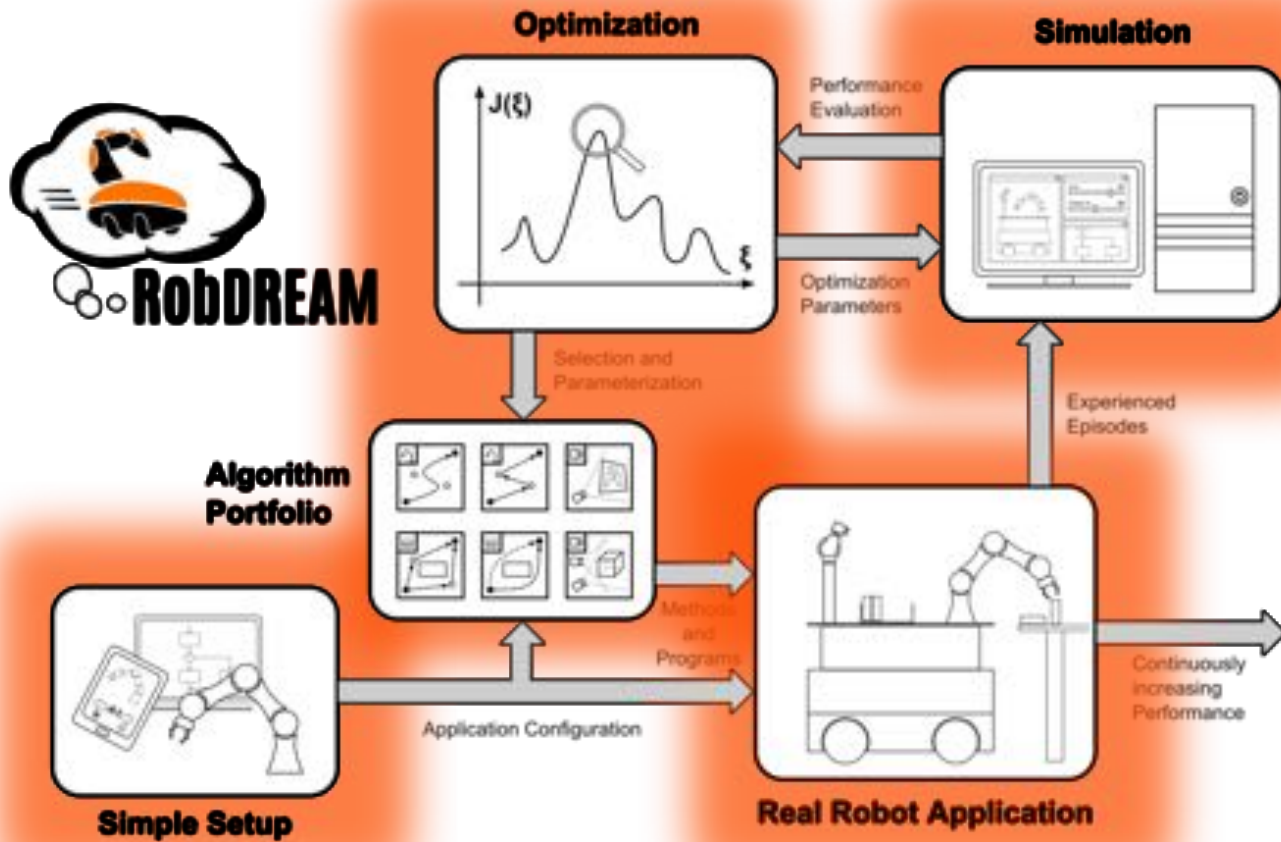
Example and rationale:

- Autonomous placing of objects
  - Simple repetitive task with little variation
  - No experience or reflection
- Robots should self-optimize solutions!





## The RobDREAM approach and realization



## What are we DREAMing about?

In the RobDREAM action

- Closing the loop of setup, application, optimization and increased performance
- Composition of a algorithm portfolio for mobile manipulation tasks
- Successful evaluation and performance gain

And beyond...

- Interaction with other groups in robot setup, self-optimisation and learning
- Integration of sequence planning
- Opening up the approach to other applications and robots





Thank you!

