

micropsi  
industries

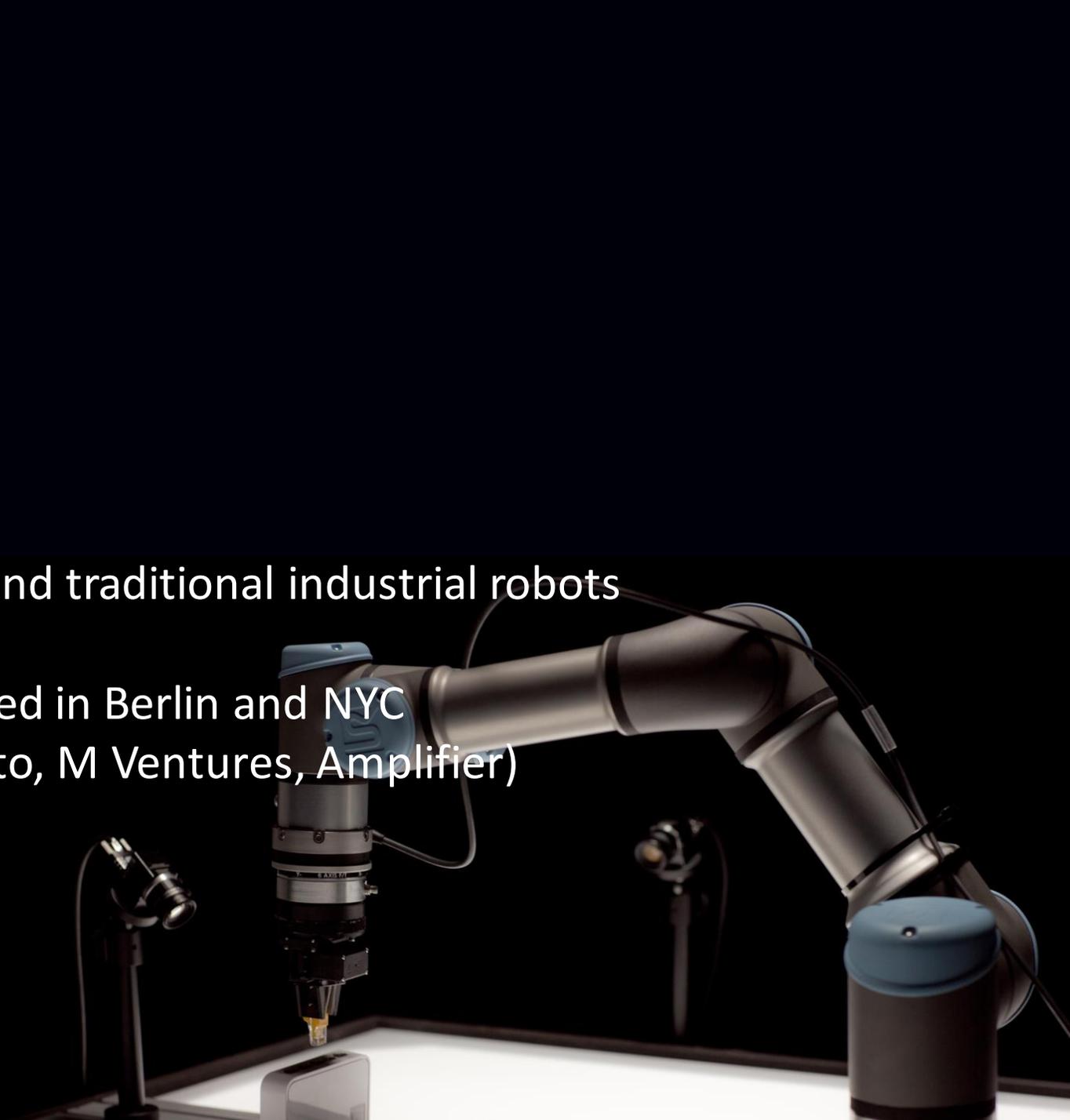
A close-up photograph of a white industrial robotic arm. The arm is holding a single, bright orange carrot in its gripper. The background is dark and out of focus, showing other parts of the robotic system and some cables. The lighting is dramatic, highlighting the texture of the carrot and the metallic surfaces of the robot.

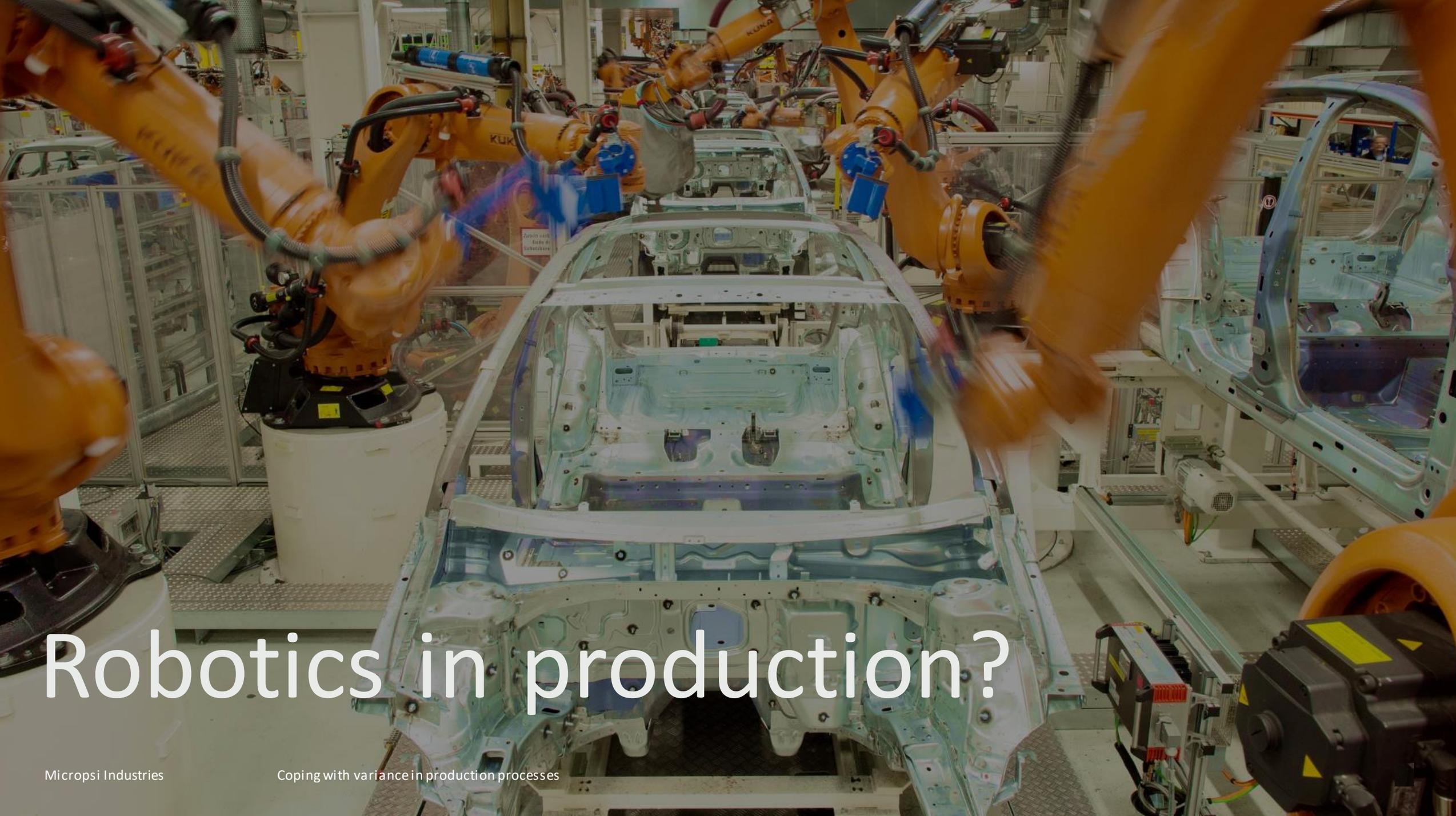
Coping with variance in production  
processes

## Who is micropsi industries GmbH

### Micropsi Industries GmbH

- AI-software-company for collaborative and traditional industrial robots
- Founded in 2014
- The team consists of 40 specialists located in Berlin and NYC
- Venture-backed (Project A, Coparion, Vito, M Ventures, Amplifier)





# Robotics in production?



## Current State

Robots in manufacturing today typically perform tasks that...

- are fully understood geometrically
- are exactly the same for each execution
- do not take sensor input into account, or if so, only for very simple decisions



## Challenge?

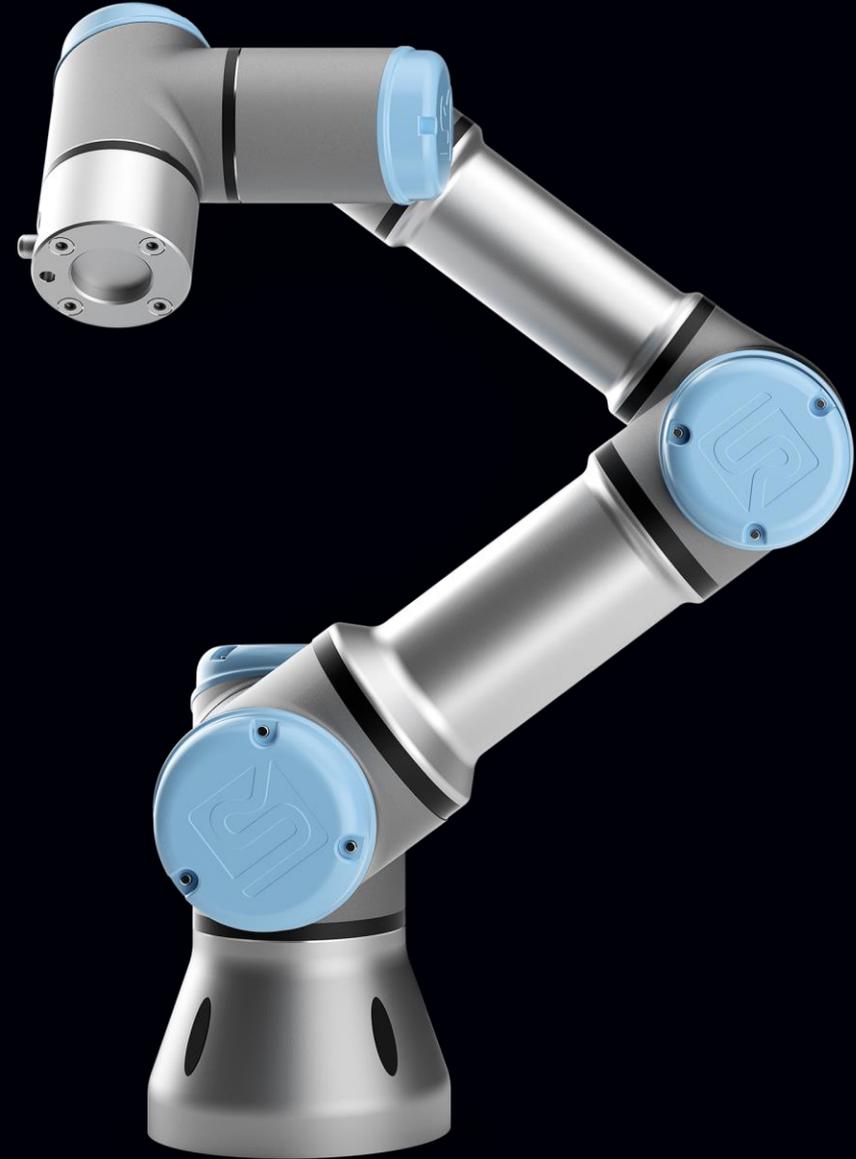
Many tasks in production, especially in assembly and testing, require more flexibility and are thus performed by human workers today.

A new Robotic: Everything gets easier

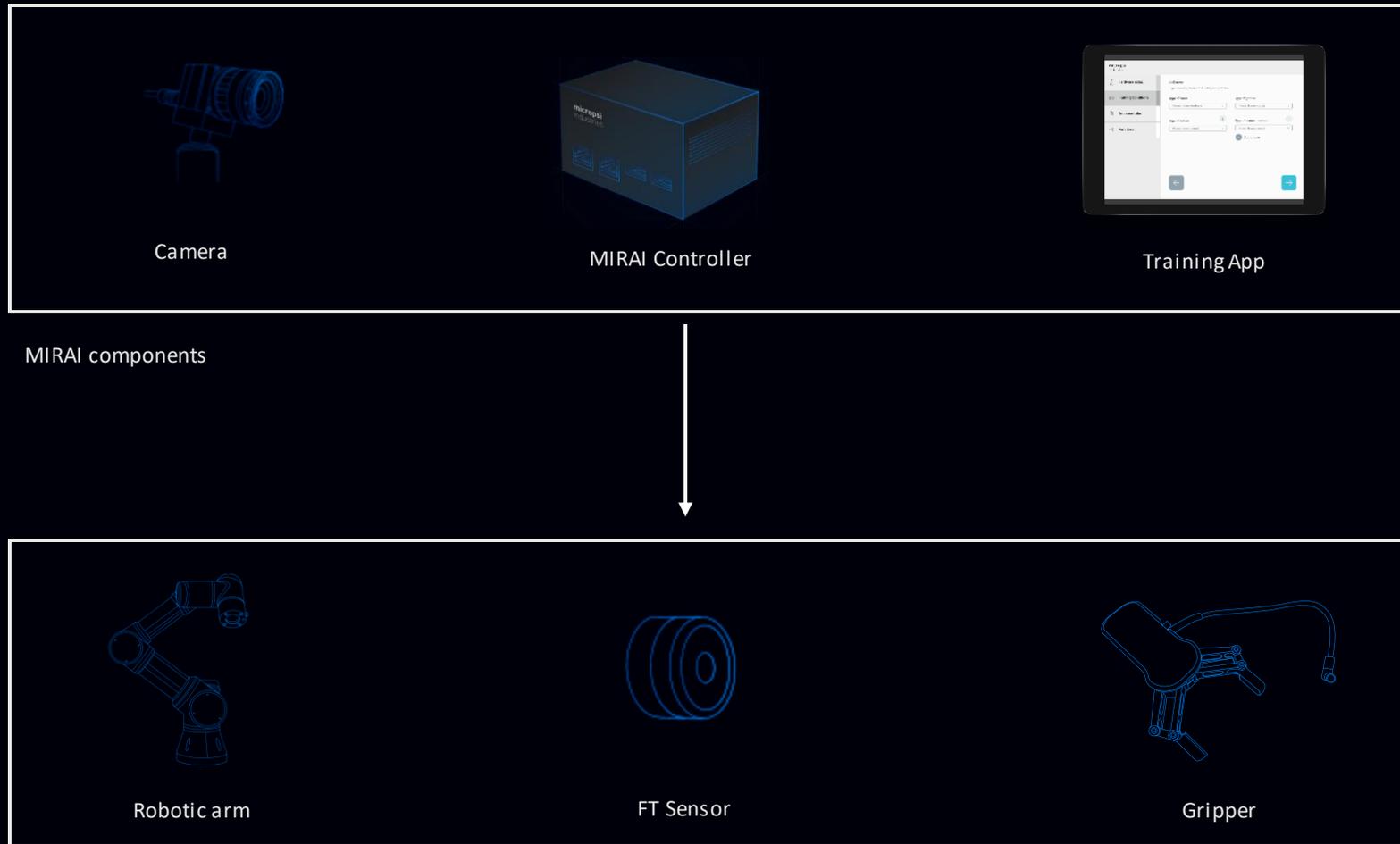
Industrial robots have just become easy to deploy and program (“Collaborative Robots”).

**Deep learning-based computer vision is now just as easy to deploy.**

micropsi industries enables robots to move based on what they see. The solution is an intuitive, easy to use system: MIRAI



# Our solution: MIRAI



MIRAI components

External components

## Our solution: Mirai 4 steps into your production



### Step 1

#### Setup Mirai components

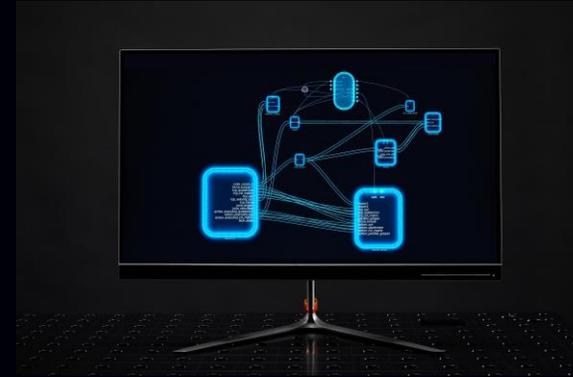
Setup roboter, F/T sensor, cameras and our MIRAI controller within a few minutes.



### Step 2

#### Demonstrate how to handle variance

Demonstrate the robot the right execution while it watches with the camera. Show in the training how the process can vary and how a human worker would solve the task.



### Step 3

#### Machine Learning for generalization

Our Micropsi Industries cloud server generates the Mirai robot skill from the training data. Through the generalization the robot will understand how to cope with any variance.



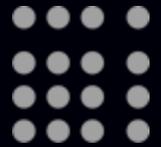
### Step 4

#### Improve and implement

Test the skill and if needed improve it with a few more training episodes. Define the endstate of your skill and integrate it into your traditional robot program. At this point there is not more internet connection needed.

## Our solution: MIRAI

Which variances can we cope with?



Position



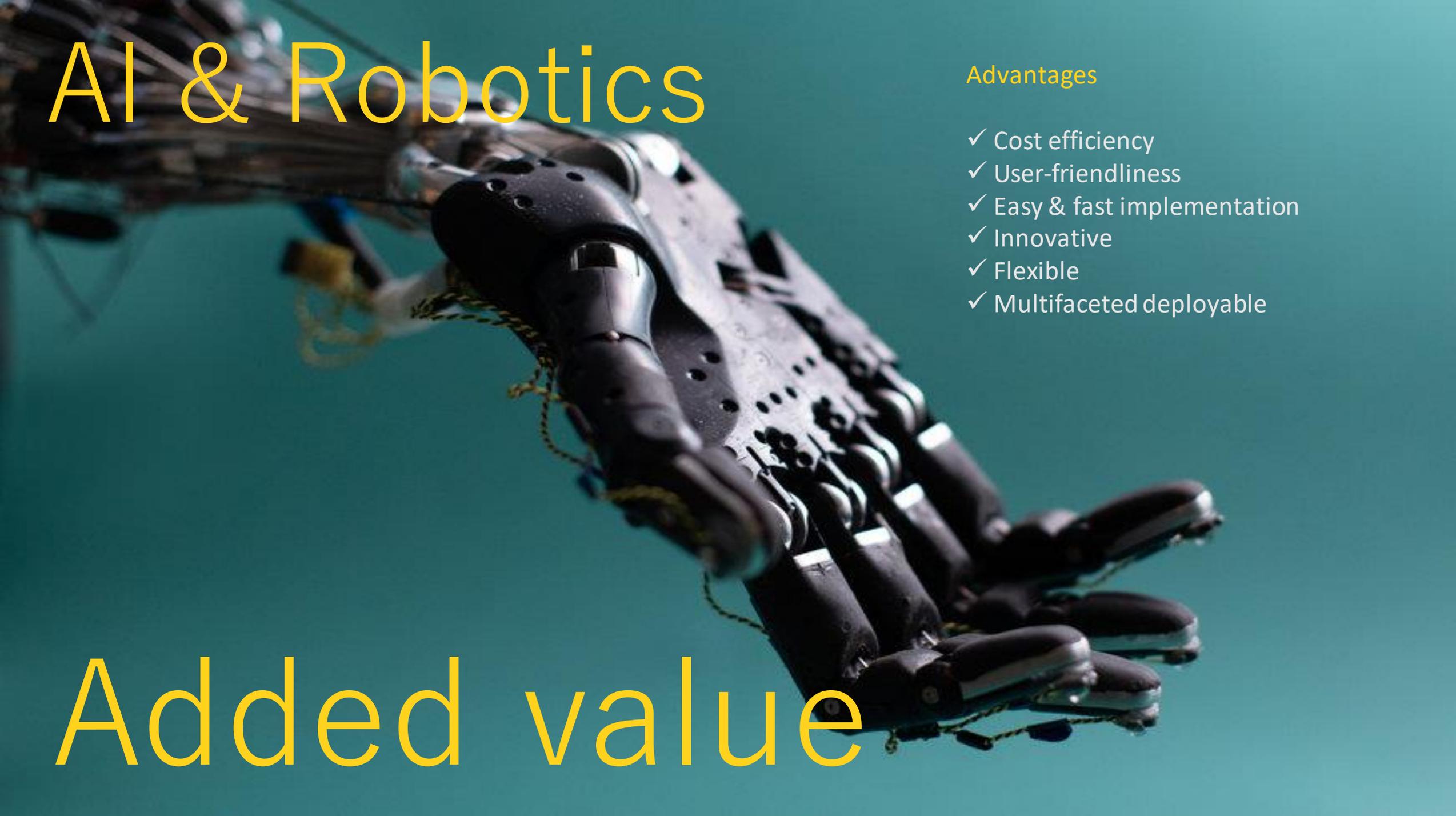
Light



Form and color



# AI & Robotics



## Advantages

- ✓ Cost efficiency
- ✓ User-friendliness
- ✓ Easy & fast implementation
- ✓ Innovative
- ✓ Flexible
- ✓ Multifaceted deployable

# Added value