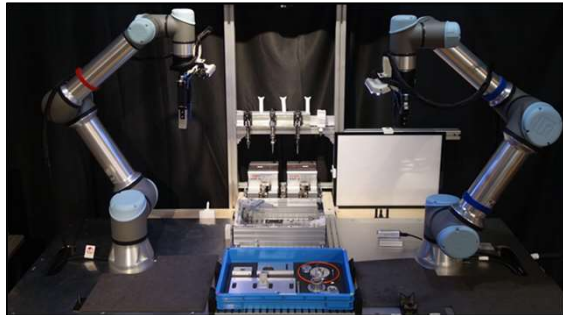
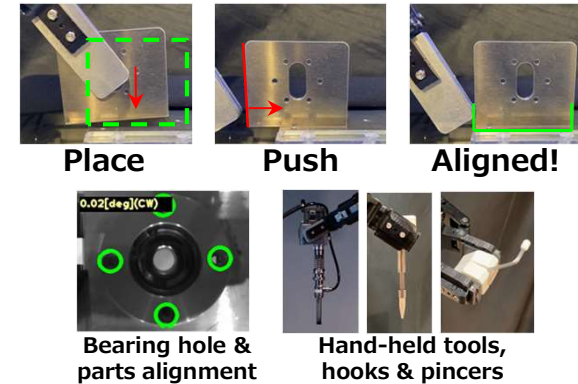


# O2AC (Japan)



## Development point

- 1. Jigless precision** - We use the environment and gripper geometry to ensure precise positioning. Uncertainty is tracked and minimized, allowing for high precision without expensive vision systems.
- 2. Human-like tool use & seeing** - Our robots use hand-held tools just like humans, with high flexibility and without special tool changers. Wrist cameras take close-up views to confirm success.



### Introduction of your team

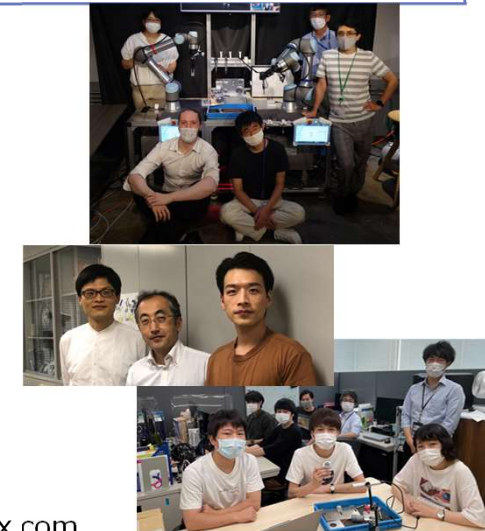
#### 【Inspiration & motivation】

We set out to prove that a flexible two-arm system can achieve industrial precision, without the need for expensive equipment. To this end, we founded an interdisciplinary team comprising two universities, a public research institute and a private company. Our code will be released publicly to benefit the community.

#### 【Future outlook】

- Free release of the system's source code, built on open-source software (ROS, MoveIt)
- Open tool design
- Talk at ROS World 2021

Role	Name	Affiliation/Title	Specialty, Field of study
Team Lead	Felix von Drigalski	Omron SINIC X Corporation	Robot Manipulation, System Design
System Integrator	Chisato Nakashima	Omron Corporation	System Design
Vision	Toshio Ueshiba	National Institute of Advanced Industrial Science and Technology (AIST)	Robot Vision
Hardware Design	Zhengtao Hu	Osaka University	Mechanism design
Vision	Shuichi Akizuki	Chukyo University	3D Object Recognition
Robot Control	Cristian Beltran	Osaka University	Robot Manipulation, Reinforcement Learning
Robot Control	Kazumi Kasaura	Omron SINIC X Corporation	In-hand pose estimation
Vision	Manabu Hashimoto	Chukyo University	Robot & Computer Vision



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