

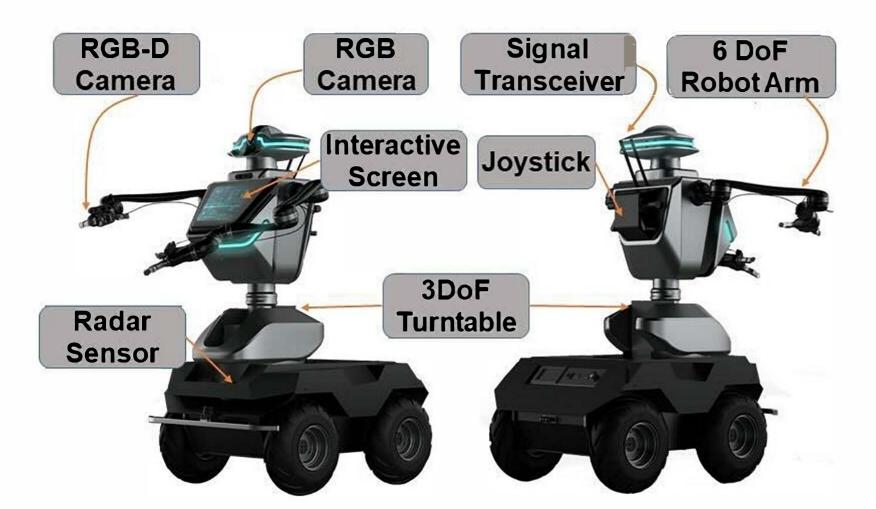
The 10th International Conference on Fluid Power Transmission and Control (FPTC2021)



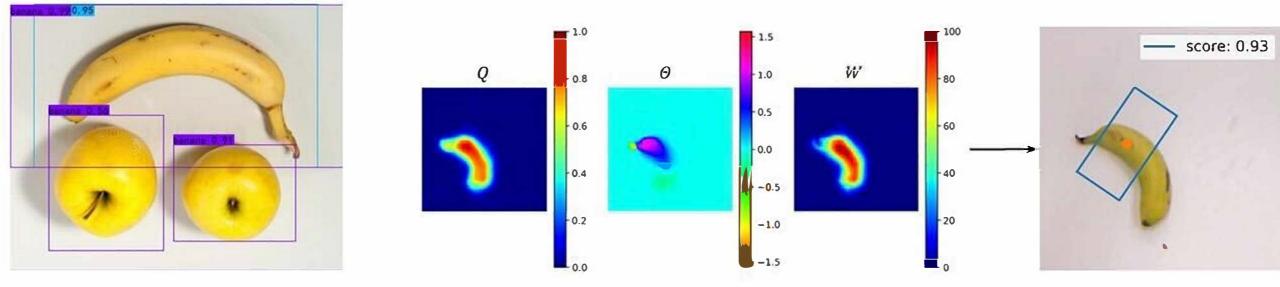
Speech Recognition and User-Interactive Robot Skin for Natural and Safer Human-Robot Interaction

This research focuses on the intelligent and safe method for human-robot interaction, deployed on a self-designed dual-arm robot system.

- Mechanical design of silencers for different operating conditions of the hydraulic system.
- ➤ Fluid-structure interaction effects on the key components of hydraulic silencers.
- > robot skin module design with intelligent sensing approach to enhance safer human-robot interaction.



> Mechanical design and Structure of the self-designed dual-arm robot platform.

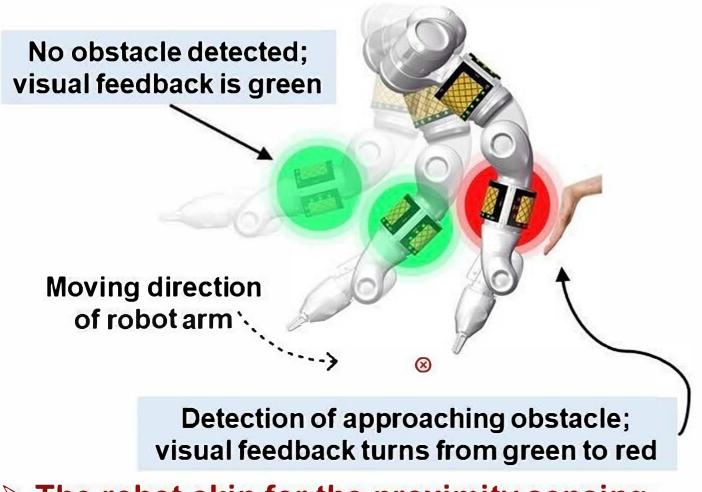


YOLOv3: object recognition

mass feature + Grasping angle + Grasping width

Grasping accuracy: 96.7%

Grasping detection algorithm based on multi-scale residual network.



Conductive Textile + Nano Tape + Programmable LED

Self-capacitive proximity sensor covered on KINOVA Jaco arm.

➤ The robot skin for the proximity sensing with visualized feedback.