

Elephant Robotics helps boost for the researches and projects in academic fields

Here are some researches about collaborative robots from well-known universities all around the world.

SHENZHEN, GUANGDONG, CHINA,
December 12, 2022 /

EINPresswire.com/ -- [Collaborative robot](#) is a robot designed to interact with humans in close proximity in a common workspace, they can safely work together with humans because they are equipped with sensitive sensors that give the robot "feel".

Here are some researches about collaborative robots from well-known universities all around the world. And [myCobot](#), a 6 axis collaborative robotic arm from [Elephant Robotics](#), was the main experimental equipment in the researches and experiments.

Facial recognition technology research

The COVID-19 has brought a major impact on people's lives in recent years. In order to effectively reduce the rate of virus transmission, masks play a very important role in people's lives.

The researchers from Universitas Sumatera Utara had made a project with myCobot-Pi [1]. In this project, the robot's algorithm is used to identify whether the visitor is wearing a mask, and if it detects that the user is not wearing a mask, the mask is automatically dispensed.

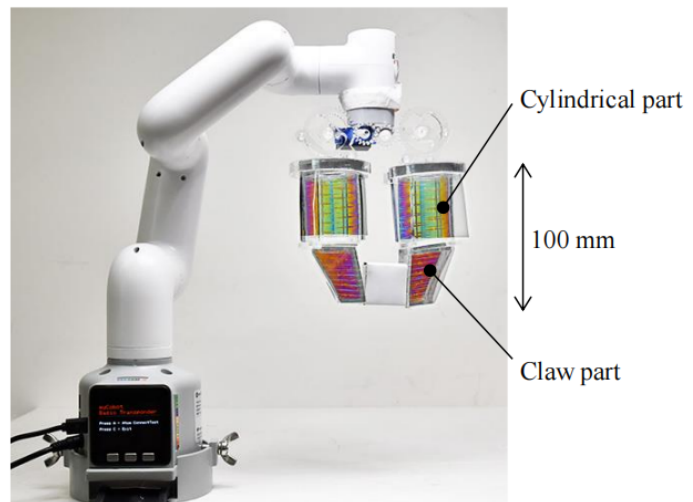


Figure 20. Proposed robot hand

Human-robot interaction research

Collaborative robots also can be helpers in people's daily life. There are some people with severe speech and movement disorders may have difficulty communicating with the outside world because they cannot effectively control the movement of their muscles. To solve this problem, the team from Southeast University has developed a non-invasive



manipulator control system based on eye tracking [2]. This is a successful medical engineering where people can send commands to the robot arm based on eye movements.

To reduce feelings of social isolation, people are increasingly relying on online social communication methods. But this type of communication lacks one of the most crucial elements for expressing emotional comfort: physical contact. To study people's perceptions of robots with emotional touch capabilities, researchers from Department of Psychology, New Mexico State University, and Toyota Research Institute used myCobot as experimental facility [3].

To investigate the possibility of humans and robots contributing to the achievement of goals through physical cooperation, the team of Toyohashi University of Technology in Japan used myCobot to present a speech on the sense of unity that arises from physical cooperation between humans and robots [4]. The researchers from different colleagues of University of Science and Technology Beijing had published a review about intelligent control and human-robot interaction for collaborative robots [5]. In this project paper, they used myCobot and others robots to show the control methods, robotics technology, and the prospect of collaborative robots.

Robotics projects and systems research

To develop a technology that communicates the state of a soft robot that can explicitly change its appearance depending on the deformation of the target object, Haruka Hyodo and Yasuyuki Yamada from Monash University of Australia made a gripper and installed it on myCobot [6], which can visualize the quality and hardness of the object being grasped. They believe that when humans and robots are cooperating or working in the same space, the interaction will be smoother and safer if people can know the robot visually and understand its state.

Taiki Majima and Kazunori Takashio, also from Monash University of Australia, had proposed a method of providing haptic sensors for soft robots based on conventional robots [7]. In this study, they propose a system called SoftTactile skin (STI), which consists of an artificial epithelium and cells, and used it on myCobot, and make it flexible and tactile.

Collaborative robots are playing an increasingly important role in a growing number of fields, including academic research and education. Elephant Robotics will keep concentrating on researching and developing robotics, to bring more contributions in the academic field.

REFERENCES

- [1] Andini Pratiwi, Erna Budhiarti Nababan, Amalia. 2022. Detection of the Use of Mask to Prevent the Spread of COVID-19 Using SVM, Haar Cascade Classifier, and Robot Arm. Data Science: Journal of Computing and Applied Informatics. DOI: <https://doi.org/10.32734/jocai.v6.i2-9289>
- [2] Zichen Kong, Shuying Rao, Hui Yang, Wenli Lan, Yue Leng, Sheng Ge. 2022. Eye-tracking-based robotic arm control system. IEEE. DOI: 10.1109/ICCEAI55464.2022.00141
- [3] Rachel H. Y. Au, Katrina Ling, Marlena R. Fraune, Katherine M. Tsui. 2022. Robot Touch to Send Sympathy: Divergent Perspectives of Senders and Recipients. IEEE. DOI: 10.1109/HRI53351.2022.9889419
- [4] 清华大学 计算机系 智能机器人研究中心. 2022. 基于眼动追踪的机械臂控制. 2022 IEEE International Conference on Intelligent and Embedded Computing (IEEC) EC2022
- [5] HUANG Hai-feng, LIU Pei-sen, LI Qing, YU Xin-bo. Review: Intelligent control and human-robot interaction for collaborative robots[J]. Chinese Journal of Engineering, 2022, 44(4): 780-791. doi: 10.13374/j.issn2095-9389.2021.08.31.001
- [6] Haruka Hyodo, Yasuyuki Yamada. 2022. Proposal for "Ajisai": a Soft Robotics Structure that Expresses Force and Deformation in Color Visualization of the Grasping State of a Robot Hand. IEEE. DOI: 10.1109/AIM52237.2022.9863344
- [7] Taiki Majima, Kazunori Takashio. 2022. Soft Tactile skin: Tactile Sensor System to Soften Robots. 2022 9th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob). DOI: 10.1109/BioRob52689.2022.9925404

Marketing & Sales team

Elephant Robotics

+86 755 8696 8565

[email us here](#)

Visit us on social media:

[Facebook](#)

[Twitter](#)

[LinkedIn](#)

[Other](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/605862180>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something

we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2022 Newsmatics Inc. All Right Reserved.