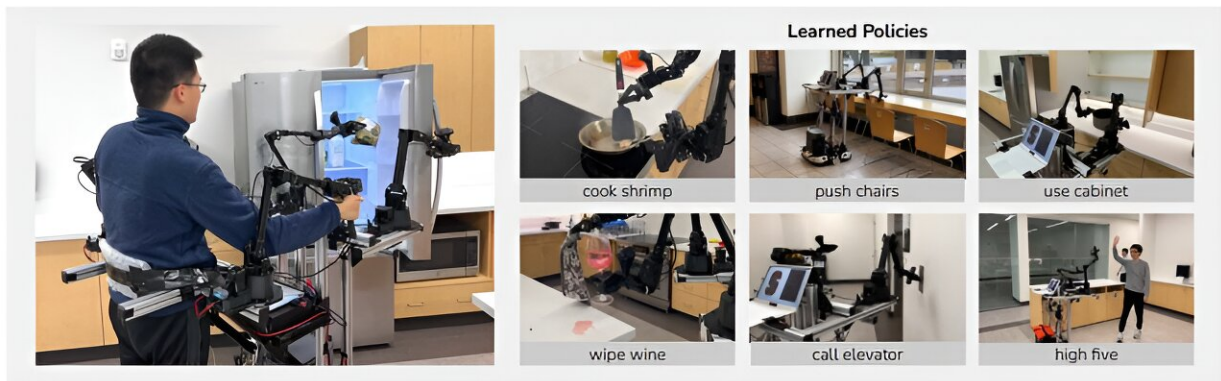


Mobile ALOHA robot able to help with multiple household tasks

January 8 2024, by Bob Yirka



Mobile ALOHA. We introduce a low-cost mobile manipulation system that is bimanual and supports whole-body teleoperation. The system costs \$32k including onboard power and compute. Left: A user teleoperates to obtain food from the fridge. Right: Mobile ALOHA can perform complex long-horizon tasks with imitation learning. Credit: *arXiv* (2024). DOI: 10.48550/arxiv.2401.02117

A trio of robotics engineers at Stanford University, working with colleagues from Google's Deep Mind, has built on Google's ALOHA system to create a mobile robot capable of carrying out a wide variety of household chores—they have named it Mobile ALOHA.

Zipeng Fu, Tony Zhao and Chelsea Finn have [published](#) a paper describing the robot's features on the *arXiv* preprint server, along with several videos of the robot in action on YouTube.

The researchers note that the robot is trained using both a database and supervised demonstration. Demonstrations are conducted using a device that connects to the back of the robot that allows it to mimic actions needed to perform a given task, such as hanging a shirt on a hanger. Training sessions involve driving the robot around and showing it how to do things, sort of like a puppet.

The robot, as its name suggests, is mobile. It is also untethered, with a large battery in its base that allows for long work periods and stability. It rolls itself around a work area conducting routine household tasks. Videos of the robot in action show that it can be taught a large number of tasks, ranging from cooking a three-course meal to loading a dishwasher—or carrying out all the tasks involved in doing the laundry.

Mobile ALOHA can also open and close the refrigerator, kitchen cabinets and doors. It also dusts, mops and puts things away. In short, the robot can be taught to do almost any household task—including making coffee, feeding pets, putting the lid back on the toothpaste tube and dispensing vitamins.

The research team points out that their system is also very low cost (approximately \$32,000) compared to other robots being created to assist with [household chores](#). Many of these, they note, are tabletop assistants, not mobile robots. Mobile ALOHA also exhibits a high degree of freedom along with extreme dexterity and finesse, as demonstrated by its ability to crack eggs and open soda bottles.

The researchers acknowledge that they need to continue working with their [robot](#) design to improve both its accuracy in carrying out tasks and to help it get around a house more easily.

More information: Zipeng Fu et al, Mobile ALOHA: Learning Bimanual Mobile Manipulation with Low-Cost Whole-Body

Teleoperation, *arXiv* (2024). [DOI: 10.48550/arxiv.2401.02117](https://doi.org/10.48550/arxiv.2401.02117)

Project website: mobile-aloha.github.io/

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