

# Shove it, poke it, ANYmal will pick up your trash no matter what

September 26 2018, by Nancy Owano



Robotic animal-like machines have a rough deal in image making. They are either too puppy-like cute for words that want to make you cry or too scary that want to make you scream. So what does one say about ETH Zurich's Articulated Locomotion and Manipulation tech for its ANYmal robot? Natural? Naturally creepy? In short, this is ALMA—Articulated Locomotion and Manipulation for a Torque-Controllable Robot.

A video posted September 21 introduced viewers to its ALMA—Articulated Locomotion and Manipulation for a Torque-Controllable Robot technology and it grabs interest in the way it moves and manipulates. *Interesting Engineering* referred to the recent presentation as showing "a progress update" on ANYmal and its articulated [movement](#).

The video on the latest moves was coming from the Robotic Systems Lab at ETH Zurich in Switzerland, as a progress update on abilities, on Friday. "We verify our framework on the real [robot](#) by performing tasks such as opening a door or carrying a payload together with a human."

The notes imply that what merits center state is the "torque controllability of the whole system," enabling compliant behaviour, "allowing a user to safely interact with the robot in a very natural way."

So, the video notes say the robot is shown opening a door—an articulated arm to turn a handle, push a door open and walk through—and carrying a payload with the help of a human, revealing its ability to help workers lift and move boxes. (Even "arm" does not capture the visual impact of seeing, in the video, a giraffe-like extension that is strong and elegant in grasping and moving.)

Meanwhile, *Electronics360* capsulizes what you see with eyes wide open:

"In the video, ALMA opens a door with the [robot arm](#) and then slowly begins to walk through it. However, the operator continues to shove and knock the robot in order to throw it off balance or get it to stop performing the action. The robot is seen simply adjusting itself to continue its task. Later, it picks up a random piece of trash in a field and places it in a waste bin. ALMA then helps a human carry a heavy object showing how it can be used in industrial spaces as a helper [robot](#)."

Peter Brown in *Electronics 360*: "ETH Zurich said the robot is based on a hierarchical optimization algorithm that enables it to walk, trot and pace while doing tasks such as fixed-position end-effector control, reactive human-robot collaboration and torso posture optimization to increase the arm's reachability."

Not surprisingly, several ALMA-watching sites drew comparisons of this latest update to Boston Dynamics' SpotMini. Both have been in the frontlines of quadrupedal robots. And both have been capable of opening doors. The video is also resonating with what has been seen in the Boston Dynamics video of team members pushing and shoving their robots around to ensure their ability to keep upright. A human standing nearby shoves this one around a bit too.

Annie [Palmer](#) in *Daily Mail*: "A variety of on-board sensors and cameras enable Anymal to autonomously navigate through numerous terrains, such as 'moving up and down stairs, climbing over obstacles, steps and gaps, and crawling into tight spaces.'" Palmer also said that "Anymal's robotic limbs allow it to move at a pace that's comparable to that of a human."

So is this video cementing the robot's brand as cute? No. Cuddly? No. But definitely not scary. [Amanda](#) Kooser in CNET: "But we may not have to worry. Anymal is actually adorably helpful. Once you get past the door-opening sequence, the robot shows off how it can pick up trash and put it away in a bin."

**More information:** [www.rsl.ethz.ch/robots-media/anymal.html](http://www.rsl.ethz.ch/robots-media/anymal.html)  
[www.anybotics.com/anymal/](http://www.anybotics.com/anymal/)

Citation: Shove it, poke it, ANYmal will pick up your trash no matter what (2018, September 26) retrieved 30 January 2023 from <https://techxplore.com/news/2018-09-shove-anymal-trash.html>

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