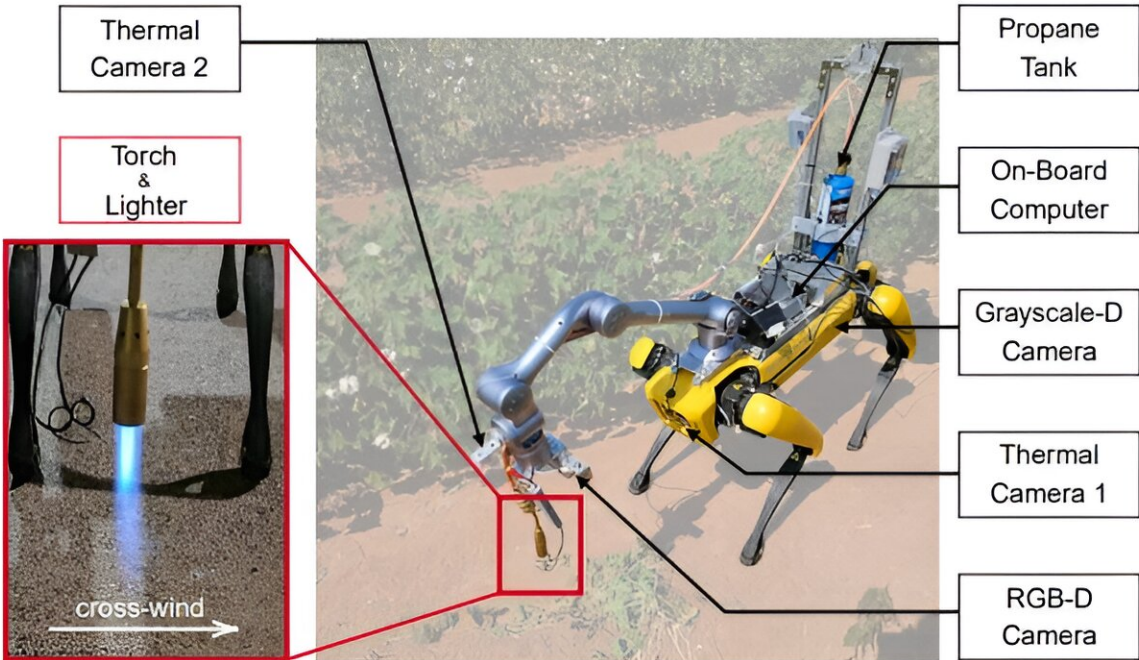


# Robot Spot configured to find and stun weeds using a blowtorch

July 26 2024, by Bob Yirka



Robotic weed flaming system design and main components. Credit: *arXiv* (2024). DOI: 10.48550/arxiv.2407.04929

A team of computer scientists and roboticists with members from Texas A&M University in the U.S., and the Mohamed Bin Zayed University of Artificial Intelligence in Abu Dhabi, working with a colleague from Boston Dynamics, has configured a robot made by Boston Dynamics to

seek out and stun weeds using a small blowtorch. The team has posted a [paper](#) describing their efforts to the *arXiv* preprint server.

Boston Dynamics, maker of the well-known quadruped Big Dog, has been working on technology to improve both the [robot's](#) agility and processing ability. Its latest quadruped is Spot, a robot with increased agility, highly accurate sensors and a brain that includes AI capabilities. In this new effort, the research team used some of Spot's abilities to tame weeds growing on cropland.

The researchers trained Spot to recognize weeds among a field of regular crops. They also strapped a small tank filled with propane to its back that is used to fuel a small blow torch held by the robot's arm. The idea is for Spot to wander around cropland looking for weeds and upon finding them, stun them by blasting their central parts with burning gas. The blowtorch is not used to incinerate the weed, but to heat its core to such an extent that the growth of the weed is stunted for several weeks.

Such an approach is used instead of killing the weeds outright because killing them would require far too much fuel—the robot would spend most of its time having its tank refilled. A small, short blast from the blowtorch, the researchers found, to the weed's center, is enough to stop the weed from growing for several weeks.

The team asserts that using robots to control weeds using a blowtorch could reduce the amount of herbicide used on crops.

The research team has tested Spot on a cotton field in Texas, asking it to focus its fire on specific types of weeds, such as the common sunflower and the giant ragweed. During five trials, the robot was found to be accurate and efficient. One problem that still needs to be overcome, they found, is [battery life](#)—Spot was only able to do its job for 40 minutes at a time.

**More information:** Di Wang et al, Toward Precise Robotic Weed Flaming Using a Mobile Manipulator with a Flamethrower, *arXiv* (2024). [DOI: 10.48550/arxiv.2407.04929](https://doi.org/10.48550/arxiv.2407.04929)

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