Robot Boris learning to load a dishwasher (w/ Video)

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Credit: University of Birmingham

Researchers at the University of Birmingham in the U.K. have set themselves an ambitious goal: programming a robot in such a way as to allow it to collect dishes, cutlery, etc. from a dinner table, and put it in a dishwasher. While not quite there, the team recently held a demonstration at the British Science Festival meant to show how far along they've progressed.

Getting a robot to grab something and pick it up isn't hard anymore,

what is difficult is getting a robot to pick up almost any object, regardless of shape, size, texture or delicacy and do something with it. But, that's the goal of the team at Birmingham, one they've been working towards for five years (and spending £350,000 in the process)—they are only just now at a point where they can demonstrate their robot, named Boris, picking up several different types of objects.

The team reports that Boris's abilities are part memorization, part processing. The robot was taught how to pick up several objects by manually manipulating its grippers. After that, to pick up something not seen before, the robot runs though the process of picking up known objects and must attempt to apply its stored knowledge in a new way. To that end, it must determine which parts of the object to grasp, and how much pressure to exert—no small feat, the team acknowledges.

The real goal of the project is not to build a dishwashing robot, of course, it's to figure out how to build robots that are capable of picking up a variety of objects in a variety of settings—skills that would be useful in factory settings, military operations and perhaps someday, in dining rooms and kitchens. Such skills, the team notes, mean moving past second generation robots (those that can operate in a relatively non-changing human environment, e.g. drones, self-driving cars). The next generation will have to be able to adapt to changes made to the environment by humans, or others such as pets or other robots. They'll need to be able to work or perform duties alongside humans or in some cases, when they are not around at all.

Boris isn't able to clear a messy table just yet, but the researchers at Birmingham insist they won't stop till they reach that goal, and expect to see a positive result over the next several years. In the near term, they are trying to figure out how to get the robot to transfer an object from one hand to another, something humans do without a second thought.

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