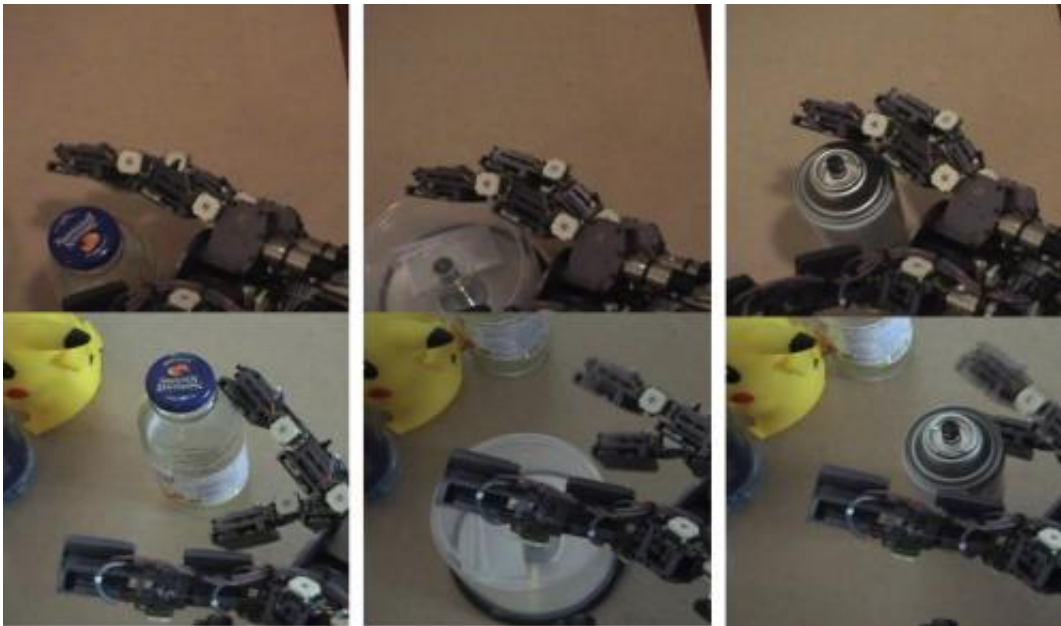


Robot Rebuilt gets a grip on wine-serving robot (w/ video)

December 5 2012, by Nancy Owano



There were four objects in common between the training and test run. Credit: Eduardo Torres-Jara, et al.

(Phys.org)—Robot research has its own unique show of hands as scientists focus on improving human-like abilities of grasping, pushing, and manipulating objects. Grabbing current attention is an assistant professor at Worcester Polytechnic Institute, Eduardo Torres-Jara, whose MIT spinoff, Robot Rebuilt, is featuring the robot Tactico, whose hand dexterity involves sensitive fingers capable of handling wine glasses and coffee mugs without requiring broom pans and mops in their

aftermath.

Tactico's roots are at MIT's Computer Science and Artificial Intelligence Lab, where Torres-Jara first began working on a robot named Obrero. At the time his work was described as being "as much about perception as action and is intrinsically responsive to the properties of the object being manipulated; manipulation that does not rely on vision as the main sensor but as a complement." Obrero was designed to approach manipulation not as a task mainly guided by a vision system, but as one guided by the feedback from tactile and force sensing, or what is termed as sensitive manipulation.

Tactico has a camera to help it recognize an object in front of it and has flexible pads that cover its sensors. The sensors mimic the external ridges and internal nerves of human fingers to achieve the same sensitivity our hands have. One goal was to achieve the position and force control of the fingers along with very sensitive tactile sensors.

Torres-Jara says he is also working on a [robotic arm](#).

One facile assumption is that Tactico could one day see [commercialization](#) as a worker-replacing robot used at cocktail parties and restaurants. Instead, Tactico could be an aid in manufacturing, used for tasks such as moving prototype parts around as they are being formed by a machine. Torres-Jara also has an application in mind where Tactico could be used for "pipetting" liquid samples in a lab.

"Right now," he said, "PhDs come in at 3 AM to take care of their experiments." Torres-Jara said Tactico could let them get a better night's sleep. The [robot](#) could use its camera to detect objects around it, and would pick them up with enough strength to lift them without them slipping or breaking.

His suggested applications correspond with the new company's motto, which is, "Done right, robots can rehumanize the world of work."

More information: cogprints.org/4968/1/torres-jara.pdf
robotrebuilt.com/

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