University of Ulster celebrates acquisition of PR2 robot by having it solve Rubik's cube

May 11 2011, by Bob Yirka

(PhysOrg.com) -- Students and researcher's at the University of Ulster's Intelligent Systems Research Center (ISRC) watched (and filmed) as the newly acquired Willow Garage, Personal Robot 2 (PR2) autonomously solved a 9x9 Rubik's cube, and then celebrated, arms spread wide, like Rocky Balboa after a winning bout.

Programmed by Chris Burbridge and Lorenzo Riano of the Cognitivie Robotics Group, the PR2, in ways that look eerily human, carefully scans the cube, before slowly getting to work; though it's not been stated as such, it appears the robot first solves the cube in its "brain" then sets to work carrying out what it's already figured out how to do using it's grippers to turn and manipulate the cube.

The PR2 is roughly the size of an adult human being and is comprised of a base, torso, arms and head. The base has castors below that allow it to move about, while the arms have grippers for hands that can not only manipulate an object, but can spin it as well to turn whatever it is holding. It also has multiple sensors and cameras placed strategically on its arms and head to allow it to "see" the environment around it, as well as parts of its own self so it knows what it's doing.

Running on the Robot Operating System (ROS), the open source code originally developed at Stanford but now mostly supported by Willow Garage, the PR2 is one among several robots created by Willow Garage as a research tool designed primarily to advance the science of robotics. And while the robots are not provided free to research institutions such as Ulster, those that demonstrate a history of supporting research on robotics are given big discounts off the normal US $400,000 price tag.

The University of Ulster, like many others, hopes to use the PR2 to devise innovative ROS code that can be shared, used or manipulated by others to accelerate the pace at which software for robots is produced; in much the same way that open source code has been used to provide users the world over with free photo manipulation programs (GIMP) or music creation and generation (Audacity) software.
Such initiatives are likely to result in a slew of new robot applications that will likely trickle down over the next few years, to robots designed to do all those things we've been seeing for years in Sci-Fi movies, magazines and books. Stuff most of us have been impatiently waiting

for.

More information:
via Willow Garage