

Technology

The Not-So-Secret Code That Powers Robots Around the Globe

A Silicon Valley startup is the guardian of the building blocks of robot life.

by **Ellen Huet**
May 17, 2017

Depending on whom you ask, the Robot Operating System—or ROS—is kind of like the plumbing in a house. Or it's like a set of Lego building blocks. Or the human nervous system.

However you describe it, ROS is everywhere. It's the shared system of underlying code that powers robots around the world, from the hobbyist creations in a garage to industrial robots at Toyota. It's also the focus of the latest episode of *Ventures*, a video series about startups from Bloomberg Technology.

ROS plays a major part in the recent boom in robots. Because ROS is so widely used, it makes it easy for engineers to cobble together

the basic skills a robot needs, such as connecting to a camera to see, or building a real-time map of the world around it. In that way, it's kind of like assembling Legos or hooking a sink up to a wall. ROS also takes care of the robot's underlying needs, comparable to a human's need to breathe and pump blood. That allows roboticists to focus on the hard part: making a robot think.

ROS is open source, which means robot enthusiasts can pull its code from the web for free and use it for whatever zany idea they might have. And they're expected to contribute back to the community, meaning the code improves as it's more widely used.

The original idea for ROS is about 10 years old and has roots at Stanford University and Willow Garage, a venerable robotics incubator in Silicon Valley. But since 2013, a group called the Open Source Robotics Foundation has acted

as the steward of ROS—overseeing its community and working on improvements to the software. For years, OSRF was a nonprofit. But because it has started to take on more commercial work, it's changing its name to Open Robotics and splitting into nonprofit and for-profit arms, similar to Firefox browser-maker Mozilla.

Open Robotics' employees get the satisfaction of seeing their code in use across the entire robotics field, Chief Executive Officer Brian Gerkey said.

"In Silicon Valley, people are in a secret place working on something that may or may not ever see the light of day," Gerkey said. "They may or may not ever be able to talk about it. It's a very different experience to be able to—as we do here—all day, every day, just write code and put it out in the world."