



Autonomous Robotics: Intel® RealSense™ Technology and BrainOS

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Brain Corp

It's predicted that by 2065, Japan's working population could shrink by as much as [40 percent](#), to around 45.3 million workers. This has led to a tight labor market – especially in blue collar jobs – with a variety of proposed solutions. One potential solution is the increased use of specialized robots for certain tasks, especially menial or repetitive tasks.

San Diego based [Brain Corp](#) has partnered with [SoftBank Robotics](#) to solve exactly these issues, with the development of intelligent, autonomous navigation systems for everyday machines. Their new product is an autonomous vacuum cleaner, which has been designed specifically for use in commercial spaces such as retail and office environments. Sales are slated to begin in 2019 and will focus initially on the Japanese market. The vacuum will be powered by BrainOS®, a commercial operating system that integrates with off-the-shelf hardware and cloud technology to provide a cost-effective “brain” for robots. Integrated into this BrainOS operating system for the first time is an Intel® RealSense™ Depth Camera. Adding just a single depth camera to a system allows for increased environmental understanding and perception, without the need for many extra sensors.

“Intel® RealSense™ provides a high-quality product from a reliable vendor who is able to scale production to meet our business demands,” states Botond Szatmary, Head of Technology Partnerships at Brain Corp. “We choose Intel RealSense because it was the best available fit for the application. Now, three sets of data streams are delivered to BrainOS for navigation processing: 3D, grayscale, and RGB image data. We received amazing integration support from Intel which helped make the autonomous vacuum cleaner project a success.”

This is another entry into the Japanese industrial janitorial robot market for Brain Corp, following the introduction of large scale [industrial floor scrubbers in 2018](#). This newer vacuum device is significantly smaller in size than previous BrainOS supported devices, showing that the AI platform can support numerous different sizes and types of robots. BrainOS easily accommodates new hardware devices and can be used to effectively automate any mobile machine, with the robotic drive system from the vacuum robot being able to be used for applications such as delivery robots, security robotics or healthcare devices.

While most people are familiar with home robotics vacuum solutions, this autonomous vacuum cleaner solution is more advanced – the BrainOS AI platform provides a level of security and robustness required by commercial equipment manufacturers and the industries that use their equipment. The Intel RealSense depth camera is part of a sensor suite that provides for safe robotic operations in any conditions. In real time, the robot can identify an obstacle and stop before any kind of collision could happen. As safety is a key concern for all autonomous vehicles, this is a very important feature we can expect to see in any robotics solution of the future, along with increased [environmental understanding](#) and awareness.

By 2022, the robotics market is expected to grow to more than [USD 77 billion worldwide](#), in part driven by a worldwide aging population and labor shortage. With this growth in the market comes an increasing need for robots that can understand the world around them, and then act on that understanding. The collaborative approach between Intel RealSense Technologies, Brain Corp and SoftBank Robotics then makes perfect sense – Intel RealSense depth and tracking cameras provide the environmental understanding, BrainOS provides the necessary autonomous navigation and cloud-based central operations, and SoftBank Robotics builds the integrated system, with their proven track record of worldwide robotics solutions. The final output is a high-quality, compact form factor that can effectively see and understand its environment, operate autonomously in public environments, and deliver end-users with a safe, reliable and helpful robot.

Read the original post [here](#).

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