Universal Robotics Announces New Features for Neocortex 3.0

Neocortex Delivers Operational Insight and Flexible Automation for Logistics

For Immediate Release

NASHVILLE, Tenn./EWORLDWIRE/May 29, 2012 --- Today, Universal Robotics announced that Neocortex 3.0, the Software with an IQ(TM), is now integrated with automated inspection and vision guidance applications for the logistics industry. Neocortex software mimics the way creatures learn through the process of acting, sensing and reacting. From these interactions, Neocortex discovers successful methods for action in dynamic environments.

The software works on any hardware, providing solutions for a host of applications. Currently, Neocortex enables a new level of automation never before possible in logistics. By enabling a robot, or any actuated machine, to react and adapt to its surroundings, it can perform tasks that are costly, dangerous or difficult for humans to undertake. It has been tested onsite at Fortune 50 distribution centers, handling arbitrary objects at typical material handling speeds. In addition, there are potential machine control applications in mining, hazardous waste and emergency response. Future data insight solutions include medical, aerospace and defense applications.

Neocortex learns like people do. It is a bottom-up approach. When people learn to hit a ball with a bat, they sense what is going on around them, take a swing, and adjust based on the results. People learn what information is important to the success of the action, such as the position of our elbow, how fast we swing, and how the pitcher releases the ball. Neocortex does the same: it gathers multi-dimensional data within a work area or over an entire distribution center. If it is depalletizing mixed boxes, it zeroes in on objects within a workcell, recognizes all boxes, and guides the robot to move them. If it is providing operational efficiency insight to someone loading a truck, it provides packing density suggestions, load balancing metrics, and overall queuing information.

Alan Peters, chief technology officer of Universal Robotics and associate professor of Electrical Engineering at Vanderbilt University, states, "Neocortex provides a framework for the integration of sensory information with a respect to a robot's or a machine's frame of reference. A task-specific, multimodal suite of sensors continually observes the environment, detects and tracks objects, and registers the instantaneous state of the machine itself. With that information, the framework maintains a real-time sensorimotor map of the workspace. This enables the machine to react safely to unexpected events, yet continue to perform its tasks. Neocortex has demonstrated an unprecedented ability to identify objects never seen before in random locations - the ideal solution for materials handling."

Neocortex learns without additional programming. When Neocortex senses a new object, it determines its attributes and how to best handle it. The software does not require pre-programmed object details to recognize the object. When the object is encountered again, Neocortex remembers it, delivering efficient performance.

Neocortex handles an unlimited number of objects in real-time, whether they be deformable bags, parts, cartons, crates or boxes. It can differentiate colors, marking, barcodes or SKU numbers. It can recognize partially hidden objects and objects with a range of surfaces including black and Mylar. Neocortex distinguishes between normal and arbitrary object traits such as box flap bent over versus a cardboard edge of a box.

By keeping track of the details of every object it encounters and assimilating into patterns, Neocortex automates intelligence for human decision making. For instance, Neocortex senses an object's shape, volume, labels, damage (if any) and weight. Data with this level of granularity can be used to improve stacking for storage and trailer loading, warehouse throughput sequencing, object identification for track and damage reporting, and reusable container tracking.

Neocortex 3.0 is shipping now with the following Universal Robotics applications: Random Bin Picking, Random Bag Picking, Random Box Moving, Mixed Palletization, Mixed Depalletization, Random Multi-Dimension Inspection.

About Universal Robotics Inc. (http://www.universalrobotics.com)

Universal Robotics Inc., operational in 2008, is a software company based on a seven-year development effort between NASA and Vanderbilt University that resulted in patented technology for automating intelligence. Neocortex, Universal's flagship software based on this breakthrough, is a new form of artificial intelligence that uses sensor information to learn. It provides operational insight and flexible machine control to perform tasks that are unsafe or difficult for humans. With the addition of Spatial Vision Robotics or Spatial Vision Inspection software, Universal offers applications that combine intelligence with precise 3D sensor data and real-time control using off the shelf cameras and sensors.

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