

## Robotics in Greater Seattle

Robots that prevent power outages. Robots that you command to move merely by thinking. A robot in every home. All of these things are on the cusp of happening and, as one would guess when talking about a new technology, the Greater Seattle region is playing a big part in it.

The Greater Seattle region is a center for the new robotics industry that is just now starting to take off like the Boeing 787. In fact, Bill Gates, who once famously mandated “a computer on every desktop,” is now predicting there will soon be a robot in every home. The dawn of the age of robots is now taking place globally and it’s no surprise that the Puget Sound region, the most internationally tied region in the United States, and a global center of information technology, is playing a large role in this robotic sunrise.

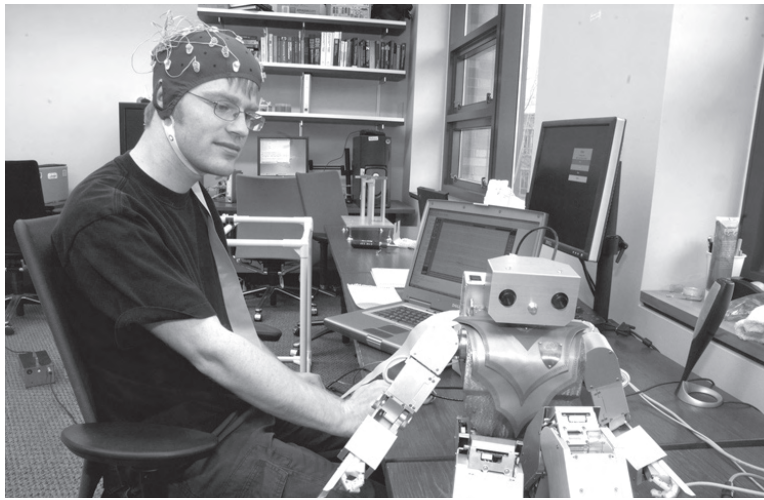
Information technology and jet airplanes have made the world smaller and created our globalized society. At the same time, a smaller more interconnected world is helping accelerate the pace of technological change—it is a circle of prosperity. It’s a round world, not a flat one.

Japan is a leader in robotics technology in part because of an aging population that will cause labor shortages in the future. During the upcoming International Study Mission to Fukuoka and Kitakyushu, Japan, the delegation will visit Fukuoka’s Robosquare and meet with some of Japan’s leading robotics companies (see cover story on Kitakyushu).

It’s not just Japan. South Korea is perhaps more ambitious in its plans for a robust robotic

industry and consumer market. South Korea is already the most wired country in the world with 72 percent of its households having broadband Internet access. This was part of an economic strategy to transform the country into a technology center. Now they are setting their sights on robotics. The goal is to have robots in every South Korean household by 2015-20. More than 30 companies and 1000 scientists are part of a government effort to make that goal a reality.

Of course, when talking about information technology and future-looking industries with a global impact, you know the Greater Seattle region is involved too. Recently, University of Washington researchers demonstrated direct control of humanoid robots using signals from a human brain. Associate Professor of



UW researcher Christian Bell wears an electrode cap that can send signals from his brain to the robot.

Computer Science and Engineering, Rajesh Rao (who was born in India) and his lab successfully showed a human can control the movements of a robot. Wearing electrodes which transmitted signals from the brain, one of Professor Rao’s graduate students used his mind to direct a robot to move to a specific location and pick up specific objects. It is almost Yoda-like in its implications.

A recent and rare wind storm left many Greater Seattleites temporarily without power. Such outages are rare here and likely to become even more rare thanks to other robotic research taking place at the UW. Associate Professor of Electrical Engineering Alexander Mamishev heads up the UW’s Sensors, Energy and Automation Laboratory, which develops robotic applications to monitor infrastructure, including the electrical grid. They recently tested a robot that

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can find cables in need of repair in underground power lines even before the cables start to cause problems. The UW robot can spot problems by examining the surface of the cable to detect problems on the inside. It will help power companies not just here in the Greater Seattle area but all over the world to maintain more efficient and reliable power grids.

From electric grids to the home, robots are starting to become more common. The cover story of last month's Scientific American, "Dawn of the Age of Robots," was penned by Bill Gates. The co-founder of Microsoft sees today's robotics industry as being at the same stage the PC industry was in the 1970s. "We may be on the verge of a new era, when the PC will get up off the desktop and allow us to see, hear, touch and manipulate objects in places where we are not physically present." The United Nations Economic Commission for Europe recently noted that the number of home robots now outnumber industrial robots. Microsoft has released a software developer's kit for general purpose robots. By providing generic software writing tools, Microsoft hopes to provide the basis for innovators to create a wide variety of useful home robots.

In the article, Gates notes the progress being made in Japan and Korea. The dawn of the age of robots is an international phenomenon. Whether you are in Japan, Korea or Germany, robots are our future and, like so much internationalized technology, it starts here at home. So, in fact, there may soon be a robot in every home, and Puget Sound companies and researchers will have played an important role in bringing them here.



## Fall 2007: Malaysia, Singapore, Thailand



This fall, the Trade Alliance will lead a business and trade mission to Southeast Asia, including Malaysia, Thailand and Singapore. All three countries are major trade partners of Washington state.

*For more information on the Business & Trade Mission to SE Asia, please contact "A" Boungjaktha at 206-389-7289 or [neepapornb@seattlechamber.com](mailto:neepapornb@seattlechamber.com)*

