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From the July 1, 2005 print edition

FedEx Institute's robot captivates visitors to 'Wired' NextFest

[Michael Sheffield](#)
Staff writer

With the unveiling of a human-like robot that can interact with people and answer questions, the partnership between the [FedEx Institute of Technology's](#) Institute for Intelligent Systems and Texas-based [Human Emulation Robotics](#) wants to take a lead role in the future of robotics.

The institute and HER unveiled a robot based on Phillip K. Dick, author of Minority Report, and stories that were the basis for movies like "Total Recall" and "Blade Runner" at Wired magazine's NextFest in Chicago.

The robot, which was loaded with information about the author that allowed it to answer questions ranging from its name to information about Dick's work, was one of the most popular exhibits at the convention.

Andrew Olney, senior developer for AutoTutor, an artificial intelligence program, and writer of the robot's software, says the project is a combination of artificial intelligence, speech

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recognition software and face recognition software that allows the robot to think, speak, respond and recognize faces.

Olney says the robot's knowledge of Dick was created by scanning in his books and biography information. The artificial intelligence and software work

together to listen to questions, turn them into text the brain understands and generate responses. Those responses are then translated from text to words and "spoken" by the robot. The hardware then animates the responses by combining the facial features and lip movement to create the words.

Olney says there are still limitations to the technology, but the robot performed better than most expectations.

"There's still a little lead time with the responses and there's the time it takes for the speech recognition to turn words into text," he says. "The more you ask it, the longer it takes to answer, but with simple questions, it can answer instantly."

Olney says the recognition software can be programmed in advance to recognize names and faces by simply scanning those faces and names into its memory.

While the robot's skills may fall well short of activities found in movies, the fact that it can do as much as it can demonstrates how far the technology has come in a relatively short time.

"Artificial intelligence has been around for 50 years and so many people have oversold and overbought it because of movies that they expect too much," he says. "The technology is nowhere near being able to take over for a human being, but you can put any type of information in."

Eric Mathews, associate director of the institute, says the breakthroughs with the robot bode well for the long term of social robotics, with the first consumer applications most likely being entertainment or communications.

"We could see them at St. Jude escorting children and their families or serving as companions for elderly people," Mathews says. "With this, we're now setting the expectations for what future robots could and should be like."

Although this robot required about six months and \$250,000 to create, Mathews says the goal is to get the cost of the units down to \$5,000. Olney says developing the robot's brain, including software, can be done in as little as two weeks now.

"We could see it as a high-end toy for some people," Mathews says. "Now that we've gotten around the learning curve, the production time and cost will only decrease from here."

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