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Lab Rat: Carnegie Mellon's robo-nurse

on 01 November 2000, 22:00

by [Niall McKay](#)

The Washington Post recently dubbed Pittsburgh, the former steel capital of the United States, "Robo-berg."

And for good reason. For two decades, Pittsburgh's [Carnegie Mellon University](#) (CMU) has been one of the world's leading developers of robotic technology. In 1998, the university's [Robotics Institute](#) received \$30 million in funding from NASA, the Department of Energy, and the Defense Advanced Research Projects Agency.

So when the National Science Foundation wanted to plunge \$1.4 million into developing a robotic nurse, they came knocking on Carnegie Mellon's door.

I met recently with Sebastian Thrun, an associate professor and the director of the Robot Learning Lab at CMU, and inventor of the [nursebot](#) -- a five-foot-tall android named Flo.

The 33-year-old German-born associate professor is not your typical academic, which became clear with a few observations. First, he drove me to CMU in his convertible Mazda sports car; second, he says he lives in awe of his students; and third, he thinks computers are boring.

"That's why I got interested in robotics -- because they are the social face of computing," he says.

HOOKED ON BOTICS

This social aspect drove Mr. Thrun to develop the nursebot. But he is quick to point out that the robo-nurse will not replace human health care practitioners; rather, it will just provide them with a helping hand.

"People, especially at home in Germany, are often horrified when I tell them what I am working on," he says. "But if you can come up with a plan that will provide adequate health care for all our elderly, then I will give up my research immediately."

What the nursebot may do, however, is make the lives of elderly people living at home a little easier.

Mr. Thrun and his team of graduate students have the navigation problem solved. The nursebot can now move around a single-story apartment quickly, safely, and completely independent of human intervention.

Its primary purpose will be to remind its master when it's time to take medications -- a seemingly mediocre task, but one that could potentially save a lot of money: incorrectly taken medication has cost the nation about \$100 billion, total, when you factor in early retirement, accident, and emergency costs, according to Mr. Thrun.

Furthermore, it costs \$90 on average for every nurse visit, and reminding patients to take their medication via telemedicine or video conferencing costs \$45 per session.

So the nursebot may be the solution. But if that were all it could do, it would be a bad investment. "I suppose in that case I would recommend developing an electronic pill case, but I am a robotics professor," says Mr. Thrun.

GOING WITH FLO

Indeed, Flo will carry out a number of important tasks. For example, it will alert relatives or caregivers if its master suffers a fall; its on-board camera and television screen can act as a movable teleconferencing unit; and its two sturdy handles will help seniors move around their apartments. Flo could also check its charge's vital signs and email them to his or her doctor.

What distinguishes it from a type of "intelligent stroller" is that it will also have the rudiments of a personality, will include voice-recognition software, and will be able to retrieve information such as weather or television listings from the Web.

However, Mr. Thrun sees this as only the beginning. Future versions of Flo, he hopes, will be able to open jars and provide arthritis sufferers with a helping hand around the house.

"To get robots to carry out tasks such as opening a box autonomously is quite difficult, but we could provide robot arms that the patient could operate," says Mr. Thrun.

Still, I couldn't help wondering if one day I would be cursing my robo-nurse and regretting the time when I had, by writing about such things, promoted their development. The conversation might go something like this:

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