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Robots taught to cower from grumpy humans

By Katie Scott | 30 March 2009 | Categories: Technology

The Broken Heart Robot designed by Craig Anthony Perkins, founder and creative director of GENSHI:TOY

Picture the scene – you come home from work in the filthiest of tempers after a stressful day, and as you open the door, you trip over your friendly household robot, Roomba, who is dutifully going about his housework. Might yo be tempted to aim a kick squarely at the unsuspecting robot?

Researchers at the University of Calgary say they have come up with a way of averting the problem by teaching domestic robots to avoid their owners when stress levels are high.

They used a gaming headset made by OCZ which claims that it can read bioelectric signals in the brain and conver them into computer commands to "send signals" to the iRobot Roomba, a cleaning robot that has been scooting around floors since 2002.

Paul Saulnier, one of the researchers, said that at first the robot was controlled by somebody consciously changing bioelectrical signals he or she sent out. The robot would change its speed with the clenching of a jaw or the tensing an eyebrow, demonstrating that a link between the robot and the physical signs of stress was possible.

The next step was to create software that could read muscle tension, interpret it in terms of stress levels, and contro Roomba accordingly. "When a person shows high stress (Levels 3 and 4), the robot enters its cleaning mode but moves away from the user so as not annoy them," the team explains in its paper. "When a person is relaxed (Level 1 the robot (if cleaning) approaches the person and then stops, simulating a pet sitting next to its owner. If the readin is in between these two levels, the robot continues operating in its current mode until the stress reading reaches a threshold."

Saulnier says that the team is now looking at using more complex neural impulse readers. "The OCZ device was widely commercial and cheap but there is another one coming out this year, which has more nodes and so there ar

more types of input possible with it," he explains.

There is also the possibility of using more complex robots. The researcher says that humanoid robots could be programmed to recognise stress and talk to their owners to comfort them instead of hiding under the bed like Roomba.

Online editing by Holden Frith

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