Household robots? Sooner than you think

As tech companies around the world - and in India - develop smarter robots, it is only a matter of time before the big three of housework - vacuuming/cleaning, dishwashing and cooking - are done successfully by robots, thus liberating urban households from dependence on the almighty housemaid.

Japanese auto giant Toyota has announced that it intends to start selling next-generation household robots by 2010 and the South Korean government has said that it aims at having a robot in each home by 2013.

Vacuuming and floor cleaning is already being done successfully by a number of robots. The most popular of these are the world's most widespread household robots - US-based iRobot's Roomba series of robots. More than three million of these have been sold so far and the Roomba has truly heralded the era of household robots.

Roomba moves around the house without any human help or supervision, avoids obstacles and vacuums the floor. It can also recharge itself by reaching the power outlet and plugging itself in.

Recent robot models launched by iRobot can wash and scrub floor and are smart enough to avoid carpets. These can also pick up and collect objects lying around on the floor.

Gridbots, an Ahmedabad-based Indian robotics company, has also announced plans for launching an autonomous house cleaning and surveillance robot in India next year.

'We plan to launch autoGRID, an autonomous cleaning robot, in early 2009,' Gridbots founder and CTO Pulkit Gaur told IANS.

A majority of house chores involve the kitchen. Readybot, a club of engineers in Silicon Valley, has developed a kitchen-cleaning robot that can recognise and handle kitchenware, carry out several mundane kitchen-cleaning tasks, such as cleaning the counters and even load and operate the dishwasher.

Its developers expect it to be market-ready in as little as two years and do up to 80 percent of everyday kitchen cleaning.

Cooking is perhaps the final frontier that household robots would have to conquer because of the complexity of the tasks involved.

Chinese scientists at Shenzhen-based Fanxing Science and Technology have developed a cooking robot named AIC-AI that is able to do steaming, baking, frying, boiling and sauteing as well as various other special Chinese cooking actions.

It can cook thousands of recipes from Sichuan, Shandong and Canton cuisines. The working prototype of the robot costs $250,000 and is expected to cost significantly less once it enters serial production by next year. Initially it would be sold to restaurants and later to consumers.

Another important category is of lawn-mowing robots. Current autonomous lawn-mowing robots are

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capable of cutting the lawn daily, dumping the cut grass at a fixed location and self-recharging from the power outlet without any supervision.

The coming boom in intelligent household robots has prompted the South Korean government to start work on 'Robot Ethics' - a set of guiding principles to outline how people and robots should interact.

A government panel is working on the 'commandments' called Robots Ethics Charter and is due to report back in late 2008. The five-member team includes a science fiction writer and could well mirror famous science-fiction author Isaac Asimov's three laws of robotics.

Researchers are working on the next generation of robots that would be capable of doing all kinds of housework unlike the present ones that specialise in a single job.

The next-generation robots planned by Toyota would also help people receive visitors, raise children, do chores and provide nursing care for sick and elderly patients.

The future robots could also be taught new skills and would be able to adapt to every user's unique needs.

In May 2008, Swiss researchers taught Japanese company Fujitsu's humanoid robot HOAP-3 to help make ham-and-cheese omelette. Through direct human guidance, it was taught to whip eggs, cut ham and grate cheese.

David Levy, a British artificial intelligence researcher and author of book Love and Sex With Robots, has said that robots will advance to the point where they can carry on intelligent conversations, respond to human emotions and even display their own emotions.

Going by the current rapid rate of technological advancement, one can reasonably expect that the jerky movements and artificial-sounding voices generally associated with robots would soon become a thing of the past, and future robots would be capable of seamless interaction with humans.

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