Introducing Japan's new singing robot (w/ Video)

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(PhysOrg.com) -- A new humanoid robot, the HRP-4, has been unveiled at the CEATEC Japan 2010 trade show. The robot, nicknammed "diva-bot," has learned to sing by mimicking a human singer, enabling it to sound natural and to sing with more expression than any previous robot.

A research team from the media interaction group at the National Institute of Advanced Industrial Science and Technology (AIST) in Tokyo, Japan, and led by Masataka Goto, used a new technology called VocalListener to observe a real singer in action and synthesize the appropriate notes of the song with the help of Yamaha's existing voice synthesizing software, Vocaloid.

The humanoid robot's facial expressions were generated with a second new technology, called Vocawatcher, which analyzes video of a singer to mimic the expressions.

A human singer singing a typical Japanese pop song was used as a model, with her body and facial movements being mapped onto the robot so it would move in a realistic manner. The technology is even able to model the singer's breathing movements and synthesize the sounds of breathing.

Masataka Goto, who is a music technology research scientist and music software developer, as well as leader of the media interaction group at AIST, said if robots are to become widespread in society they need to first become widespread in entertainment fields so that their use will gain acceptance.

Japanese researchers have been working on many kinds of humanoid robots, including a smiling robot, and robots that could replace humans in repetitive manual labor tasks.

The Comprehensive IT and Electronics Comprehensive Exhibition (CEATEC) is an annual trade show held in Tokyo for consumer electronics and technology.

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