Commentary

A SHORT COMMENTARY ON HUMAN-ROBOT INTERACTION

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DESCRIPTION

The state of the art in sensory intelligence for robots will have to progress through several orders of magnitude if we want the robots working in our homes to go beyond vacuum cleaning the floors. If robots are to work effectively in homes and other nonindustrial environments, the way they are instructed to perform their jobs and especially how they will be told to stop will be of critical importance. The people who interact with them may have little or no training in robotics, and so any interface will need to be extremely intuitive. Although speech would be the most natural way for the human to communicate, it is unnatural for the robot. It will probably be a long time before robots interact as naturally as the fictional C3PO, or Data of Star Trek, Next Generation. Even if the current state of robotics does not meet the criteria for these robots in science fiction, robot media characters can evoke sympathy for the audience and motivate them to accept real robots in the future. If people can meet social robots under the right conditions, the acceptance of social robots may increase. Studies have shown that by interacting with a robot by seeing, touching, or imagining it interacting with it, the negatives it holds before interacting with it. You can reduce your emotions.

Speech recognition

Interpreting the continuous flow of sound from a person in real time is a difficult task for a computer, mainly due to the large variability of the voice. The same words spoken by the ame person may sound different depending on the sound of the area, the volume, the previous word, whether the speaker has a cold, and so on. It becomes even more difficult if the speaker's accent is different.

Robotic voice

There are other hurdles to allowing robots to use their voices to interact with people. For social reasons, synthetic speech has proven to be unsuitable as a medium of communication, so it is necessary to develop the emotional element of robot speech in a variety of ways. One of the benefits of diaphone branching is the emotions that the robot can project. It can be carried on audio tape or phonemes pre-programmed to audio media.

Facial expression

Facial expressions can provide quick feedback on the progress of dialogue between two humans, and perhaps immediately for humans and robots. The robot's face was constructed by Hanson Robotics using an elastic polymer called flavour. This allows for a large number of facial expressions due to the rubber surface coating and the elasticity of the embedded underground motor (servo). The coating and servo are made on a metal skull. Robots need to know how to approach people based on facial expressions and body language.

Social intelligence

The Socially Intelligent Machines Lab at Georgia Institute of Technology is exploring new concepts in guided educational interactions with robots. The purpose of the project is a social robot that learns tasks and goals from human demonstrations without prior knowledge of higher level concepts. These new concepts are based on continuous low-level sensor data from unsupervised learning, and the purpose of the task is learned using the Bayesian approach.