

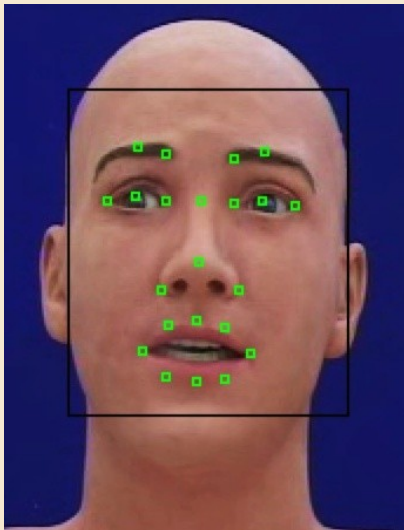
Designing Robots for People

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As robots enter domestic environments in greater numbers it is important that people are able to interact with them in a natural way to increase their acceptance and use. One critical aspect of natural interaction is how emotions are conveyed and understood by a robot.



Jules, a humanoid robot, shows surprise.

Research challenges

Human expression is difficult to classify accurately due to differences across individuals and cultures. It is difficult to portray expressions convincingly on a robotic platform. There is an “Uncanny Valley” where synthetic expressions are neither clearly artificial nor adequately realistic, which can lead to problems with societal acceptance.



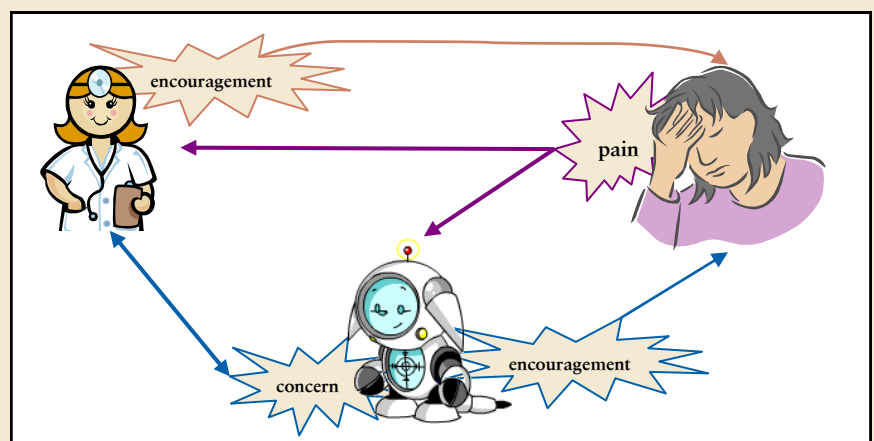
Human expressions are complex and difficult for machines to interpret.

Possible scenario

A healthcare professional caring for a patient in the home might have a robotic assistant. The robot can help to interpret and convey affective signals. (See figure below)

Approach

While there are many ways for a robot to express its affect, such as speech, gait, or gesture, our research focuses on facial expression. We are currently studying human facial expressions to serve as inspiration for robot expression generation.



Affective signalling between a healthcare professional, robotic assistant, and patient that might be conveyed in a home healthcare scenario.



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