Detecting Emotion from The Acceleration of Hand Movements

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Master Thesis Summary

This thesis addresses the problem of recognizing human emotions from body/hand movements.

The field of human - computer and human - robot interaction has greatly expanded during the past two decades. Traditionally research of human - robot interaction includes methods for perceiving humans, methods for motion planning and cognitive models that have applications in the fields of entertainment, education, field robotics, home and companion robotics, hospitality, rehabilitation and elder care.

Ways to enhance the social activities of autistic children have long been a main topic of research in the area of psychology and medicine and in the past few years human - robot interaction has been introduced as a possible means for autism related problems.

Surprisingly, there has been little research on combining machine learning and psychology in this field of research, mainly due to the lack of off-the-shelf learning techniques that can be applied to emotions data, but also due to the various ways in which emotions data can be constructed.

This thesis proposes (1) a novel method to define specific features or patterns that portray a certain type of emotion (out of 5 emotions in total), (2) a method to recognize such features/emotions using wavelets, and (3) to visualize types of emotions based on their similarity.