

SenseGlass: Using Google Glass to Sense Daily Emotions

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Emotions

Affect-based user interfaces can enable more natural and human-like interactions. However, emotion sensing in natural settings is very challenging.

Goal: Explore the benefits of Google Glass to better sense, recognize and adapt to real-life emotions.

Laboratory

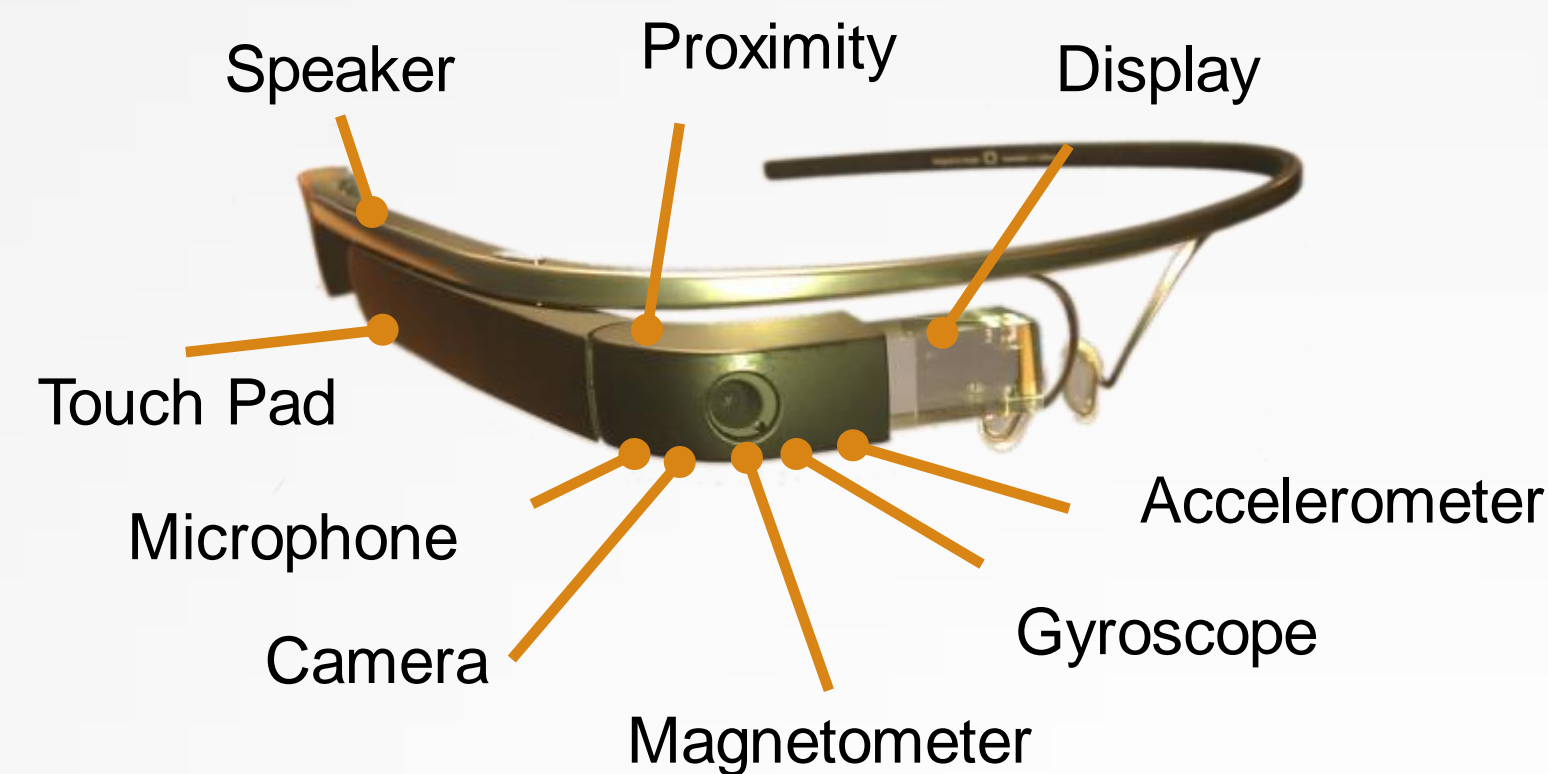
- Widely studied
- Controlled
- Easier to infer functional relations
- Unfamiliar environment
- Instrumentation
- Being observed
- "Fake" emotions

Real-Life

- Less constrained
- "Real" emotions
- Longer recordings
- More emotions
- Comfortable monitoring
- Unreliable ground truth
- Unexpected events
- More artifacts

Affect Sensing

Google Glass

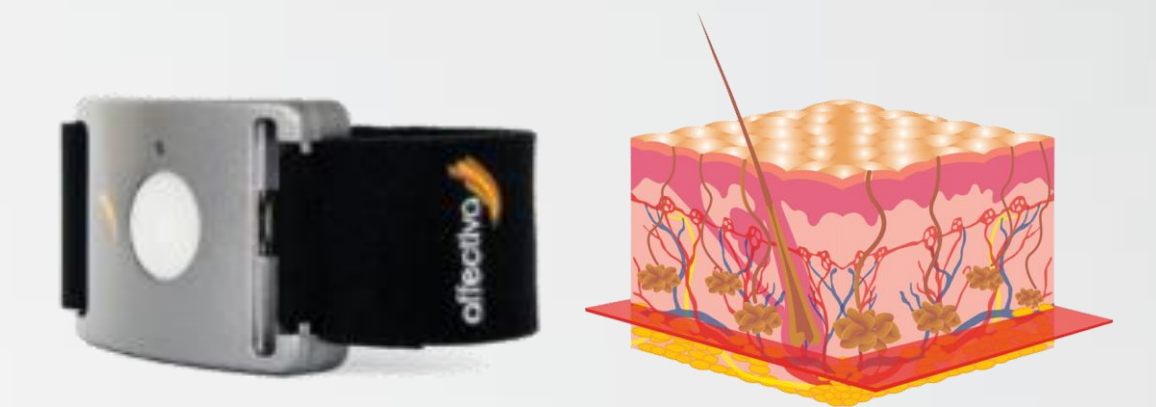


Google Glass has a large array of sensors that can be used to sense affective information.



Motion sensitive sensors can sense motions associated with the beating of the heart and respiration of the wearer.

Affectiva Q™

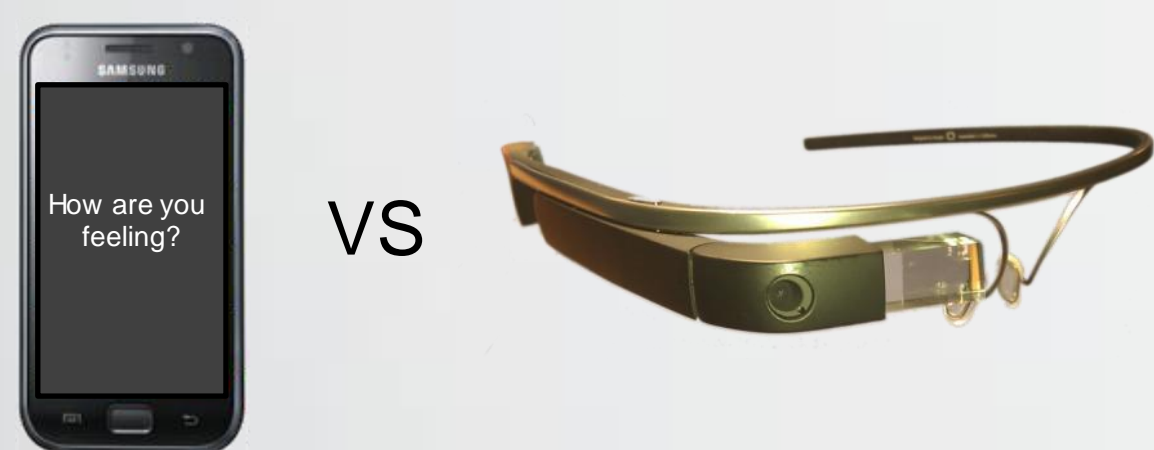


Skin temperature
Electrodermal Activity
Accelerometer

Wearable devices can be used to comfortably measure physiological signals long-term.

Emotion Recognition

Experience Sampling



- Cellphones
 - Unheard notifications
 - Reporting time relatively long
- Google Glass
 - Increased awareness of notifications
 - Reduced reporting time

Gathering Context

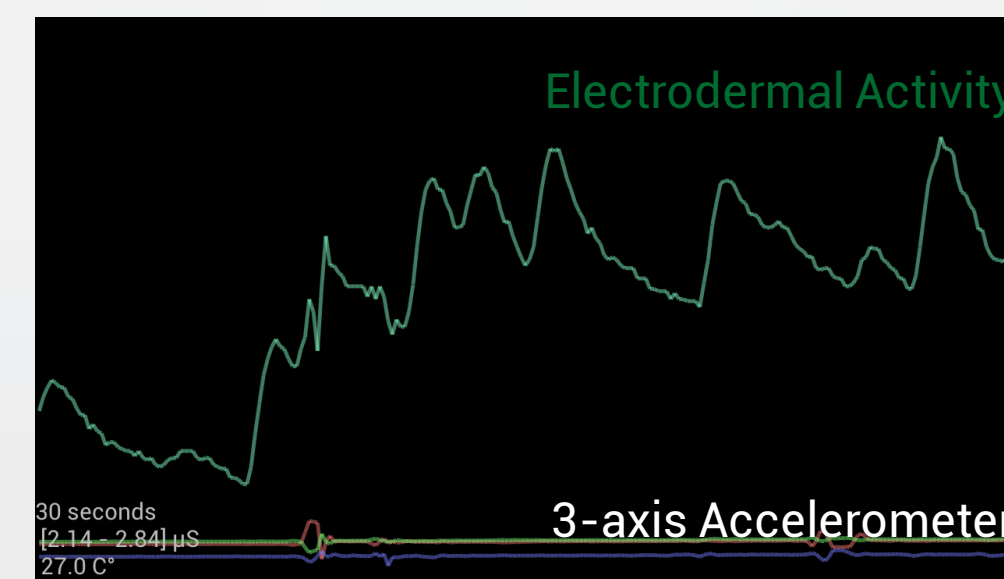
- Cellphone sensors
 - Motion
 - Location
 - Presence of other devices
- Activity Logs
 - Calls and SMS
 - Calendar
 - E-mails
 - Browsing activity
- Head-mounted camera
 - Visual Context
 - Emotions of others

Visualizing and Adapting to Emotions

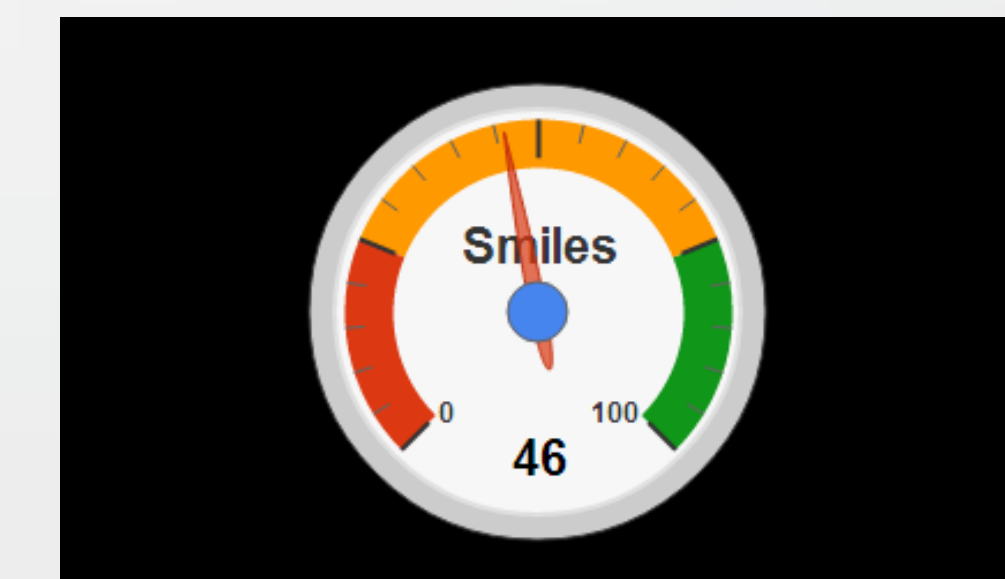
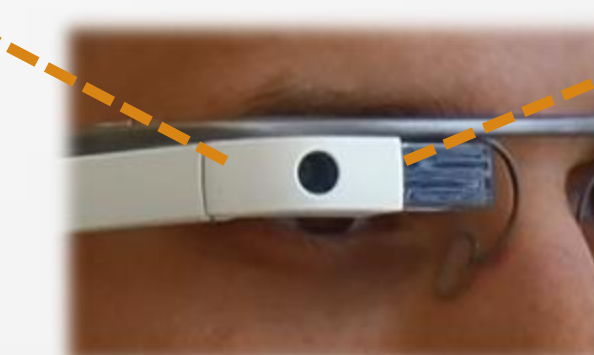
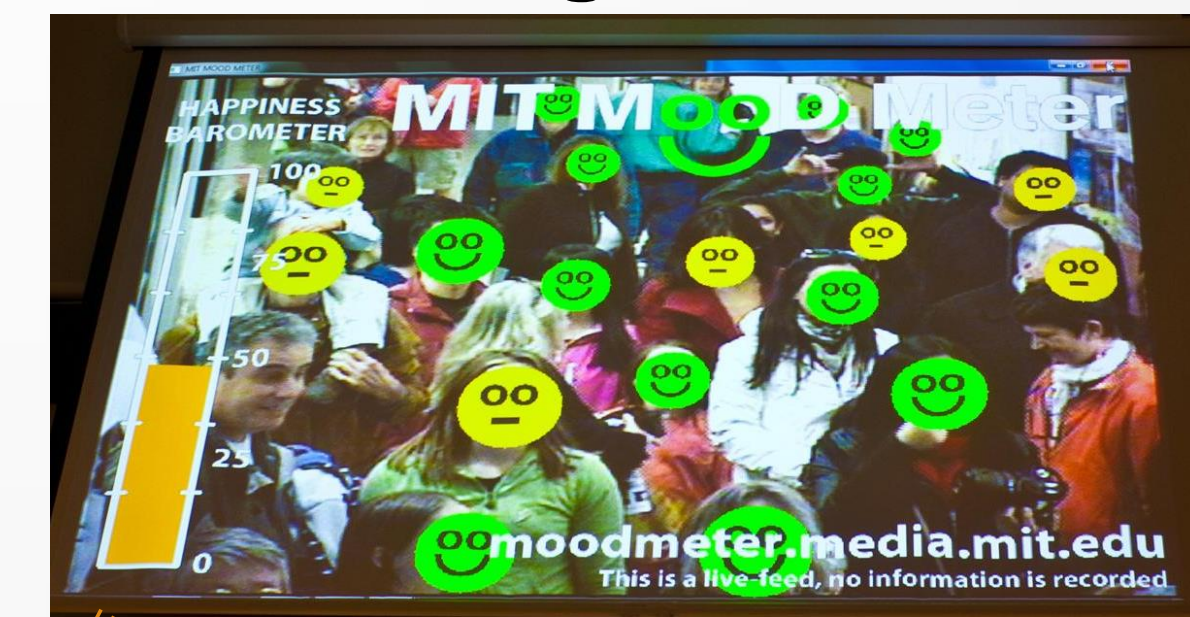
Real-time Visualization



Glass Visualizations



Increasing Awareness



Just-in-time Interventions

