

# React Harmony

$\forall (\omega^+ / \omega^-) (\geq \square \leq)$

# David Mailhot

Major: Computer Science

Interests: Adventuring, living  
life, being a real person



# Jennifer Apacible

Major: Computer Science

Interests: Photography, cooking,  
running



# Eve (Yi Zhao)

Major: Electrical Engineering

Interests: Ubiquitous computing  
and RFID



# Eric Oltean

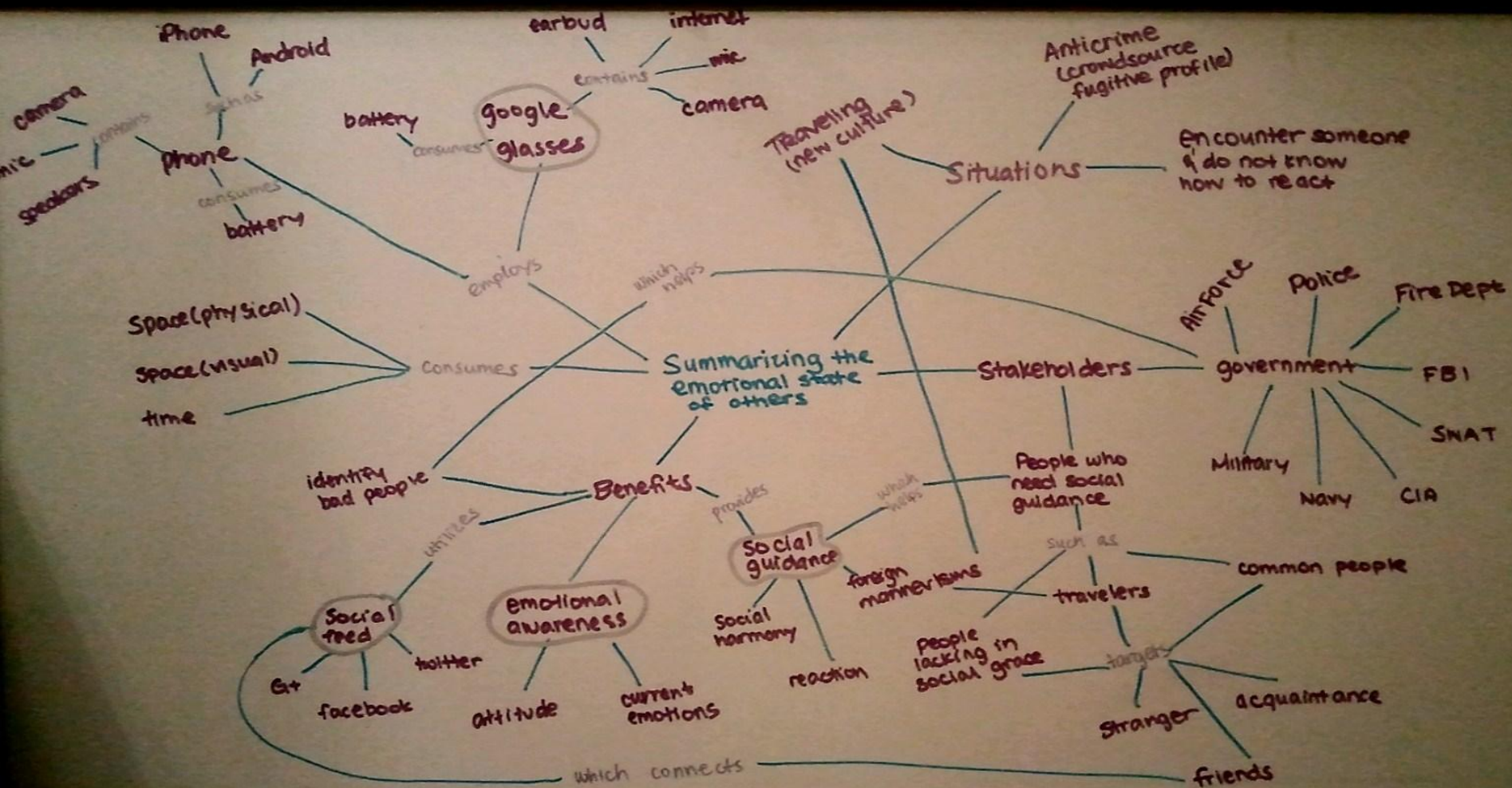
Major: Informatics

Interests: Backpacking, rafting,  
downhill skiing





# Concept Map



# Top 4 Problems

Problem	Substantial	Feasible	Interested
Emotional Awareness	Y	?	Y
Google Glasses	Y	?	Y
Social Guidance	Y	N/?	Y
Social Feed	Y	Y	Y

# Top 4 Problems

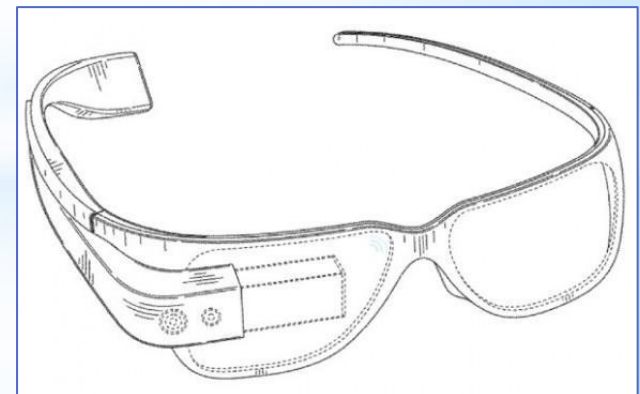
## Emotional Awareness

Users will be more aware of the emotions of people around them.



## Google Glasses

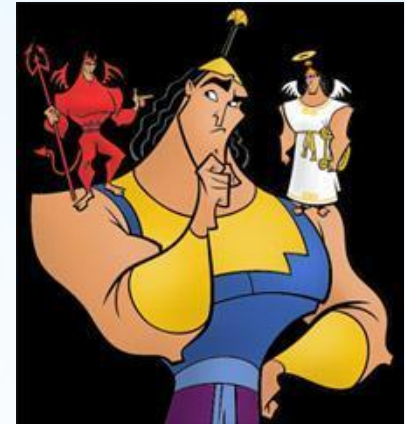
Users will utilize a set of Google Glasses to aid their awareness of the states of people around them. The glasses will also project a display with information for users.



# Top 4 Problems

## Social Guidance

For users who are not confident in their social skills, we provide a "guidance" option for fast, on the go learning and instruction.



## Social Feed

Users can check out the latest scoop about their connections on social networking platforms to quickly find a conversation starter ... or avoid a topic.





# Top Problem: Emotional Awareness



*Conflict*

- \* Help people who are not able to interpret others' feelings to avoid embarrassment and conflict
- \* Solution: Emotion summarization based on voice and visual cues

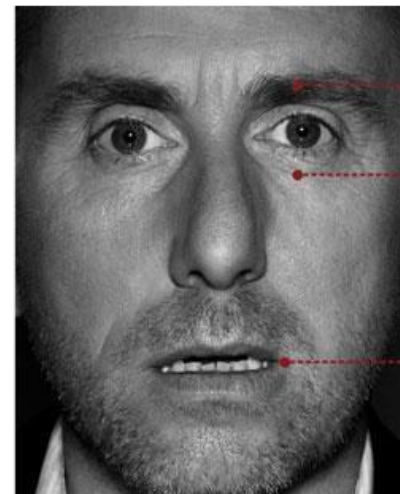


# Top Problem: Reason

\* Even people have trouble interpreting emotions from expressions



\* Must visually analyze emotional status of others



**surprise**

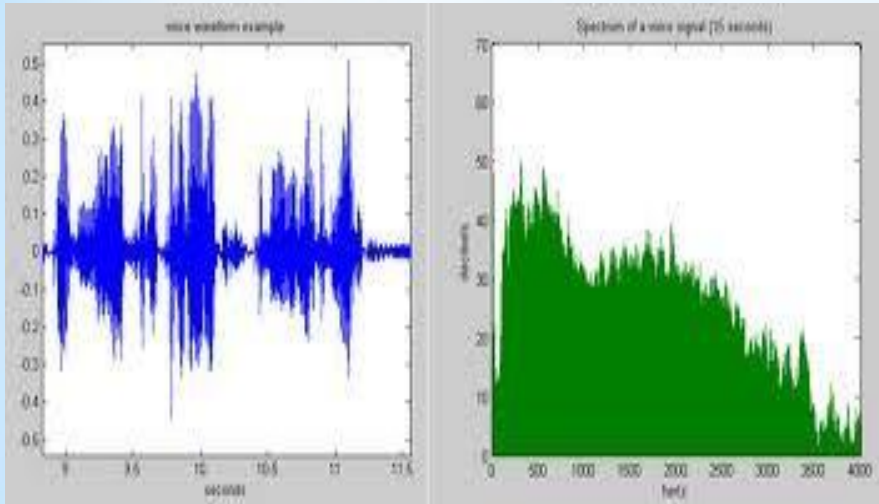
Lasts for only one second:

① eyebrows raised

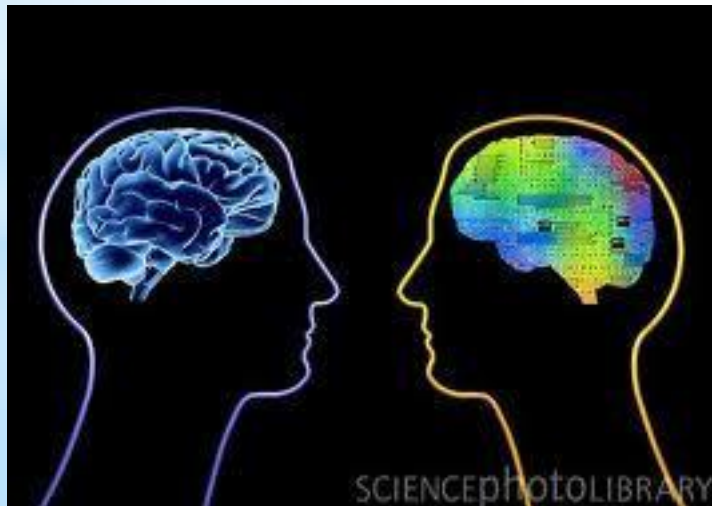
② eyes widened

③ mouth open

# Top Problem: Reason



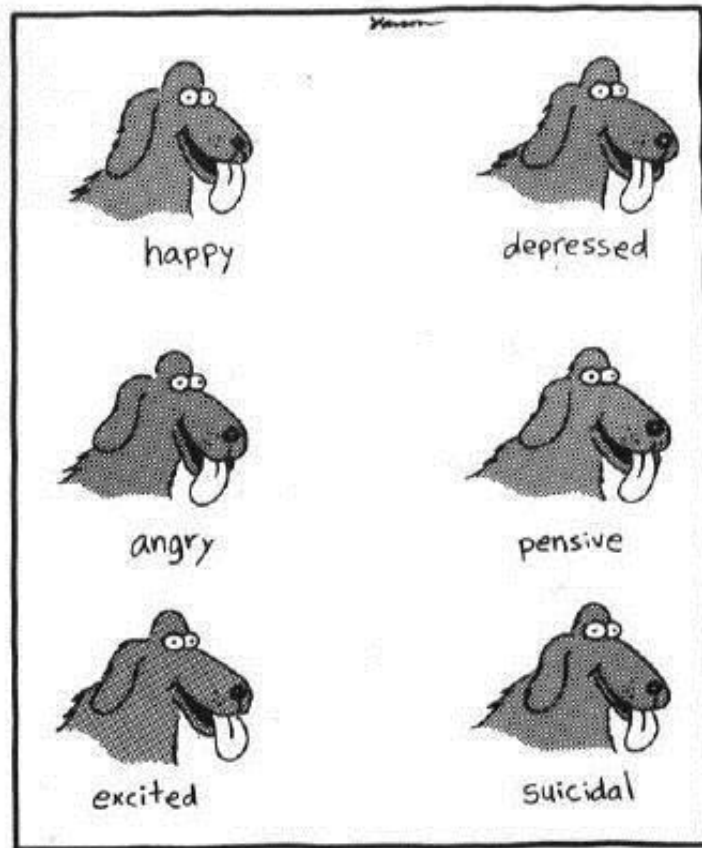
\* Must use voice frequency analysis to determine emotion



\* Must communicate emotion information through the Google Glasses device

# Top Problem: Significance

Recognizing emotions is hard!



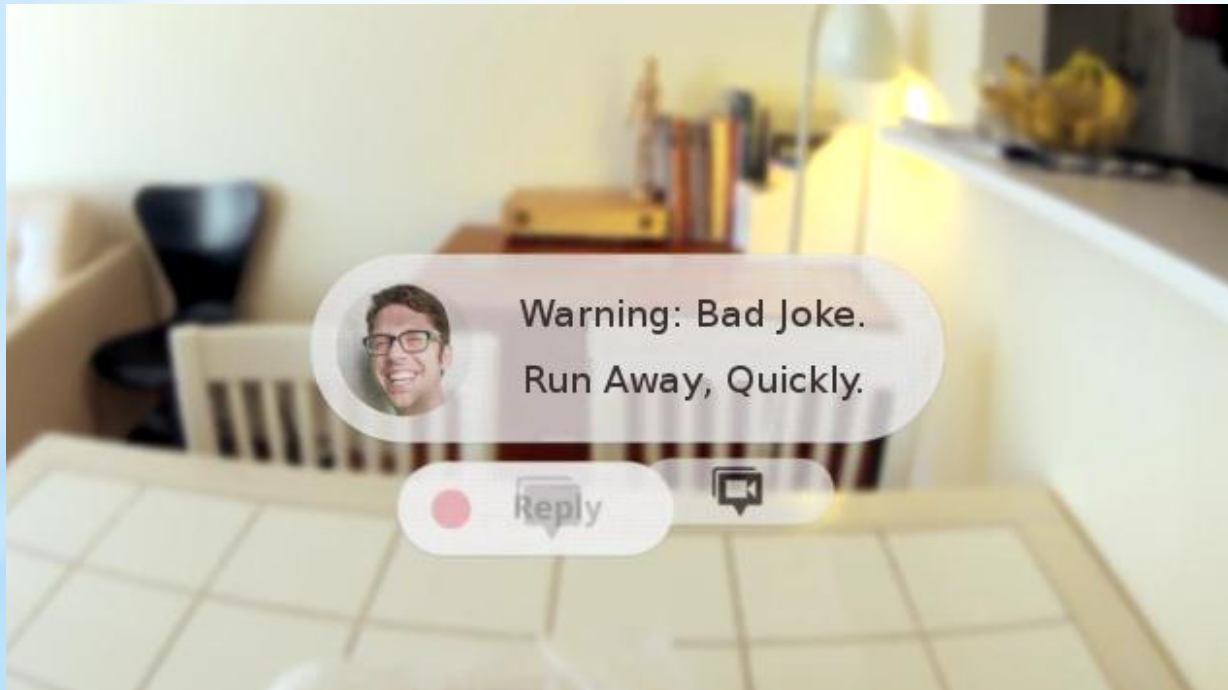
How to recognize the moods of an Irish setter



MEMEANIMALS.COM

# Top Problem: Significance

Emotional awareness can lead to positive social energy.





# Top Problem: Stakeholders

People who need more emotional awareness.



People who would wear Google Glasses.



# Top Problem: Stakeholders

People targeted to be emotionally analyzed.



# Top Problem: Analysis - Precedents

- \* Need to determine individuals' emotions from their facial expressions
- \* Need to determine the meaning of an individual's body language
- \* Need to understand an individual's tone of voice

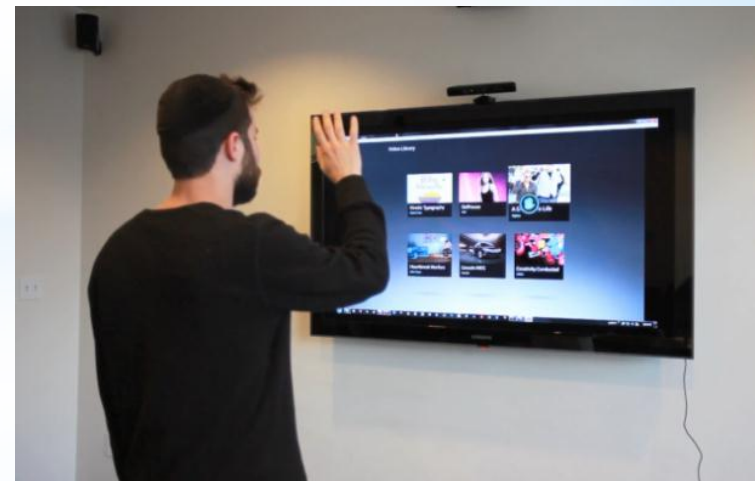


# Top Problem: Analysis – Prior Work

- \* FaceReader
  - \* Analyzes facial expressions



- \* Microsoft Kinect
  - \* Analyzes body movements
  - \* Recognizes language





# Top Problem: Analysis – Prior Work

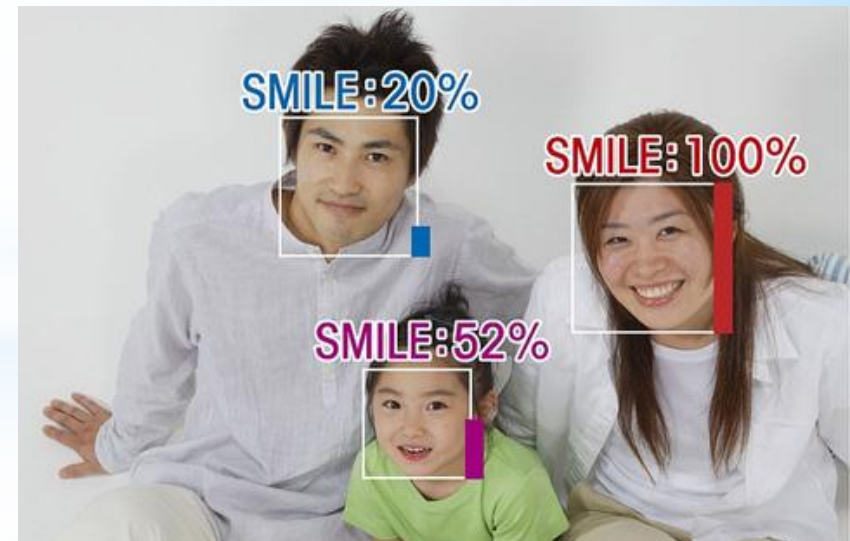
## \*Necomimi

- \* Shows consumer's mood via cat ears based on brainwaves



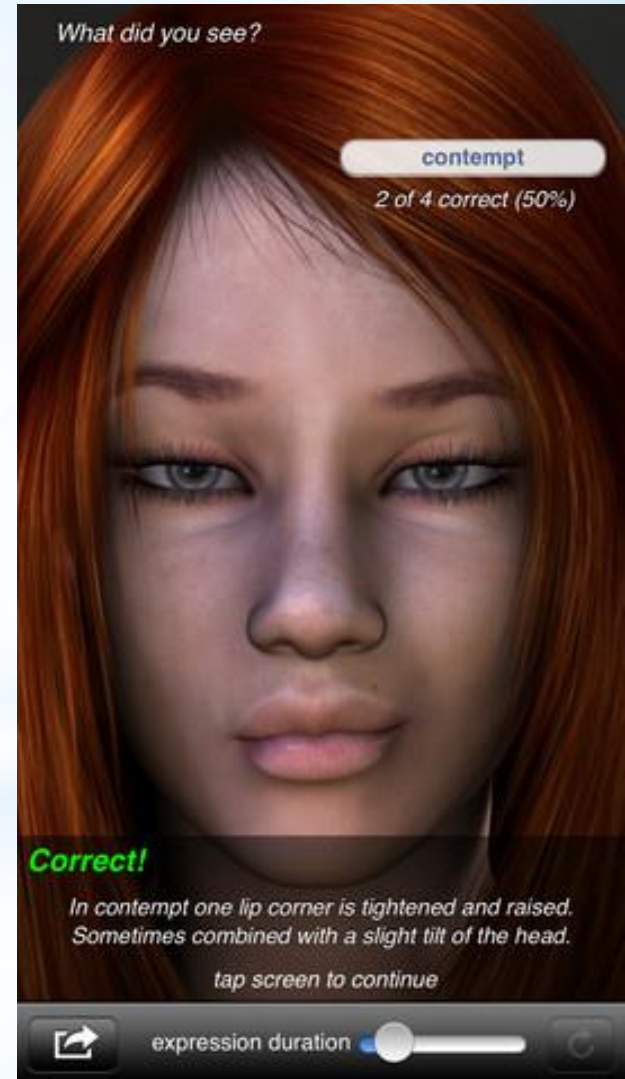
## \*Sony's Smile Shutter

- \* Triggers picture taking when subject is smiling



# Top Problem: Analysis - Competition

- \* Micro-expression trainer - iOS app
  - \* Helps improve facial emotion recognition skills
- \* Modes to 'train'
  - \* Time Attack Mode (time pressure)
  - \* Perfection Mode (accuracy)



# Top Problem: Analysis - Competition

- \* Viewdle (Company)
  - \* Builds face, object, and gesture recognition for mobile devices
  - \* Just acquired by Motorola yesterday!



**Questions?**