

## Project Harmony

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### Problem & Solution Overview

Every time we have a social interaction, we observe a prime rule of social etiquette: be considerate of others. Unfortunately, when someone is inconsiderate or ignorant of another's emotions, people can become uncomfortable, upset, hurt, or worse. We envision an application that can help customers be more aware of the emotions of other people. We intend that our application be deployed on a wearable computing device similar to Google Glass. With such a device, our application can observe and analyze the emotions of people nearby and discretely display the results (e.g whether the person is 'friendly', 'distracted', 'annoyed', etc). Armed with this information, the customer can be more considerate when socializing with the people around them.

### Task Analysis Questions

#### *1. Who is going to use the system?*

Our research indicated that our strongest group of customers will be those who want to improve their social skills and ability to read other people. The Boeing Engineer felt that she had room to improve her social performance. The international students all wanted help with recognizing unfamiliar mannerisms, reducing the frequency of being embarrassed or rejected by locals, and identifying approachable people to talk to. Another prime group of customers are those who are nervous in public places and at social events. The Awkward Transplant pointed out that a common difficulty for many people was meeting new people at events.

#### *2. What tasks do they now perform?*

All of our interviewees agreed that trying to read someone's body language or facial expressions is something they do daily. Some of the tasks that they mentioned include trying to determine how another individual feels about them or reading an individual's mood based on their body language. Some of the international students we talked to were worried about unintentionally surprising or annoying others.

#### *3. What tasks are desired?*

Our interviewees wanted to concentrate on improving their performances at the tasks mentioned in the previous question. The Boeing Engineer believed she was could determine others' moods and thought processes more easily than others. However, she also felt that people surprise her from time to time and she wants to be able to better determine the moods and intentions of others. The Boeing Engineer and the Awkward Transplant indicated that they currently have trouble making notes of social interactions. They wanted to improve their social skills. All of the international students wanted to be able to improve their performance in social situations. They'd like to know what they've done wrong during interactions and why they received any negative response from others.

#### *4. How are the tasks learned?*

Everyone we interviewed agreed that social skills are learned only through experience or feedback. Some of our subjects believe that every time they made a mistake in a social interaction, they had a chance to learn from that mistake and adapt based on their experiences. As the Awkward Transplant put it, identifying their mistakes and reflecting on them gave them a chance to improve their social skills.

#### *5. Where are the tasks performed?*

Our interviewees all agreed that social situations come up everywhere. Anywhere they could conceivably socialize with other people, they would also attempt to read people. Some examples they mentioned were the outdoors, work buildings, public transportation, and social functions. There is almost always a social interaction going on when other people are around. The Awkward Transplant also said that he often reflects on his social interactions when he is alone.

#### *6. What's the relationship between customer and data?*

Our interviewees have no definitive source of information regarding the emotions of the people around them. The Faithful Father felt that reading people is a skill that not everyone is adept at; for those lacking in this skill, the emotions of other people often remains a mystery. The international students and Awkward Transplant all had trouble quantifying their accuracy in reading emotions. They mentioned trying to pay close attention to their performance in front of other people, or comparing notes with others as to whether they read someone right.

#### *7. What other tools does the customer have?*

Because no similar software exists today, people have to learn how to read emotional signals from empirical evidence. The Boeing Engineer revealed that she often reflected on her feelings after an interaction, using her reactions to learn from the experience. She also learned through observing social interactions between other people, either directly or indirectly.

#### *8. How do users communicate with each other?*

A few of our interviewees indicated that talking about the emotions of other people wasn't necessarily a common occurrence. The Faithful Father pointed out that sometimes he needed to confront someone directly about their attitudes to clear up any lingering confusion. Otherwise, one can always confer with other people to discuss the conduct of a third person.

#### *9. How often are the tasks performed?*

Social interactions take place every day. Everyone agreed that virtually every social situation involved reading other people to 'calibrate' their own responses accordingly. Of course, it depends on the person; someone who secludes themselves or never leaves the house, answers the phone, or talks to others will not have as many social encounters as someone who does.

#### *10. What are the time constraints on the tasks?*

Reading people's emotions while talking to them has to be done quickly, or the conversation becomes filled with awkward gaps, which can make people uncomfortable. The exact amount of time available for analysis can vary between situations and people, but it is usually only a few seconds after the person stops speaking. Reflecting on past events, on the other hand, has no time

constraints: people are free to spend as much time as they want to analyze prior social interactions.

### *11. What happens when things go wrong?*

Reading someone's emotions incorrectly can cause all kinds of miscommunications to occur. One person might accidentally offend another, damaging relationships between acquaintances and invoking hostility from strangers. People can also just misunderstand what others are trying to say, ending up with the wrong information, which can potentially be dangerous.

For an individual, realizing their mistake can be frustrating, disappointing, and upsetting. Over time, repeated failure can damage self-confidence and cause people to avoid social interactions entirely.

## **Revised Tasks**

### *1. Find the most approachable person from a group of people*

*Simple, high importance, high frequency*

We decided to broaden the scope of this task. Before, our task was simply finding a safe seat on the bus. Through our Task Analysis, we were able to distill that into a more fundamental form: determining who is friendly and who is not. As we found in our contextual inquiry, some people worry about meeting new people because of the fear of rejection. This is especially relevant at social functions when surrounded by strangers. Many international students voiced their anxiety about trying to find a friendly person when asking for help. Therefore, this task is to identify the least threatening, most approachable, most friendly person that they could approach.

### *2. Identify general feelings of another to oneself*

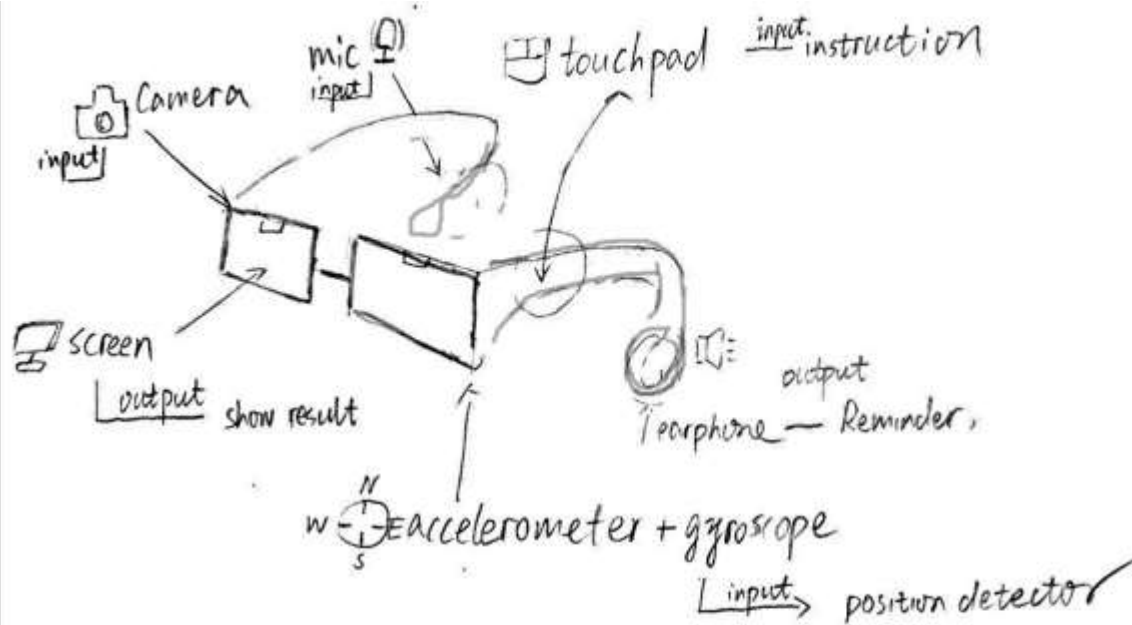
*Moderate, high importance, high frequency*

Our Task Analysis reaffirmed our reasoning that reading other people is an everyday task. This task moves beyond a simple measurement of friendliness. A number of our customers specifically described how difficult it was to determine someone else's feelings, especially for those who don't have very developed social skills to begin with. This task is to determine another individual's mood or what the individual's attitude is towards the customer.

### *3. Teach someone how to react in social situations in real time*

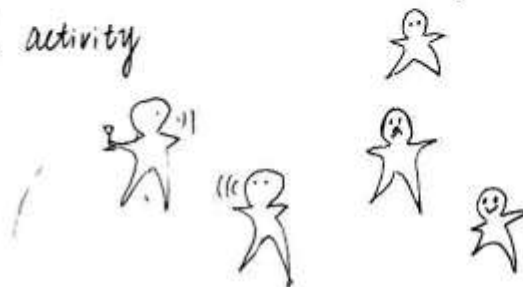
*Complex, high importance, low frequency*

Some of our subjects believe it was very important to catch their mistakes and improve their social skills. All of the international students wanted to improve their performance in social situations. They wanted to know what they've done wrong during interactions and why they received any negative response from others. We came up with two methods that customers could use to improve their skills: 1) receive real-time advice on how to react to social situations as they happen, and 2) let customers record notes of their social interactions so they can later review their performance and see what they did right or wrong. This task helps a customer improve their social performance starting from the moment a social situation begins to unfold in real time.



target customer

In new environment.  
or In social activity



who should I talk with?

people who are less social adept

→ look for help  
or  
→ want to meet friends

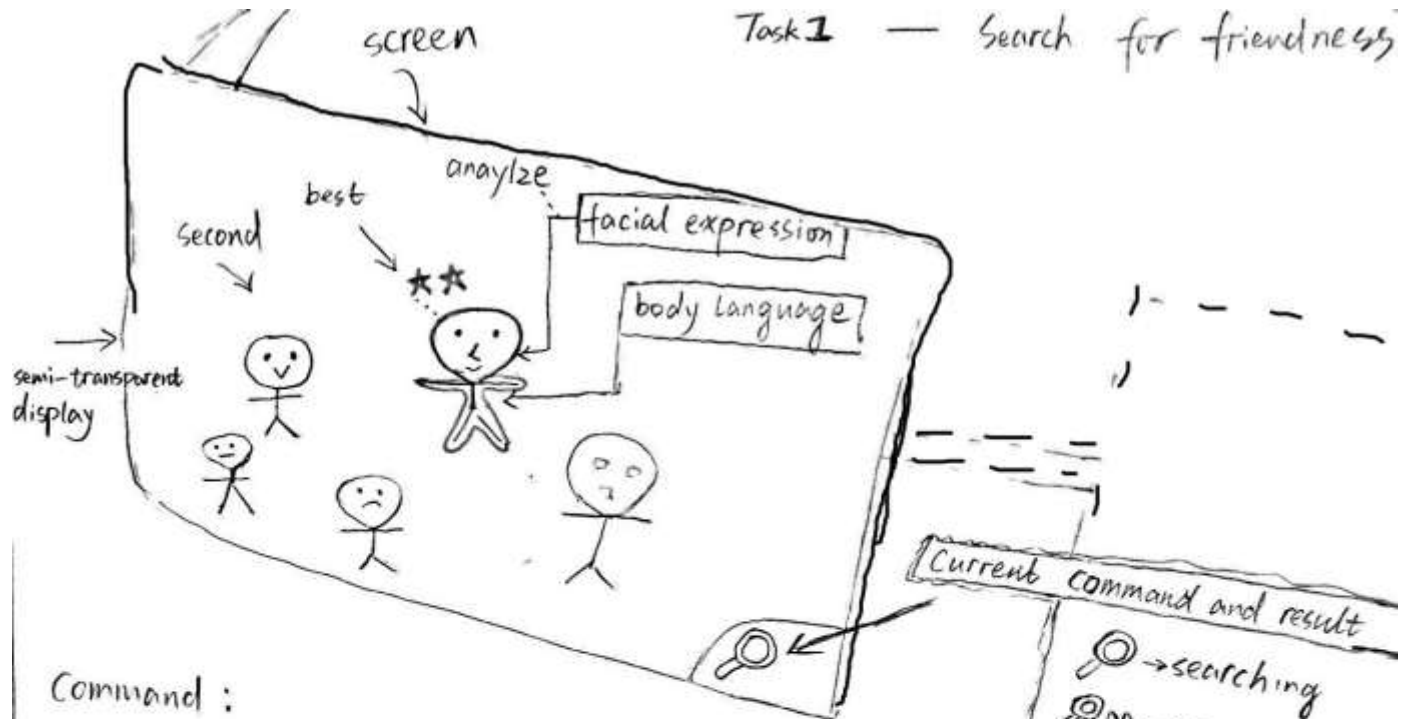
? How to monitor my social performance

? How to remind my impolite manners.

? How to reduce nervousness



# Task 1 — Search for friendness



Command :

🗨️ : voice control — "Search for friendness"

🔍 : analyze camera data

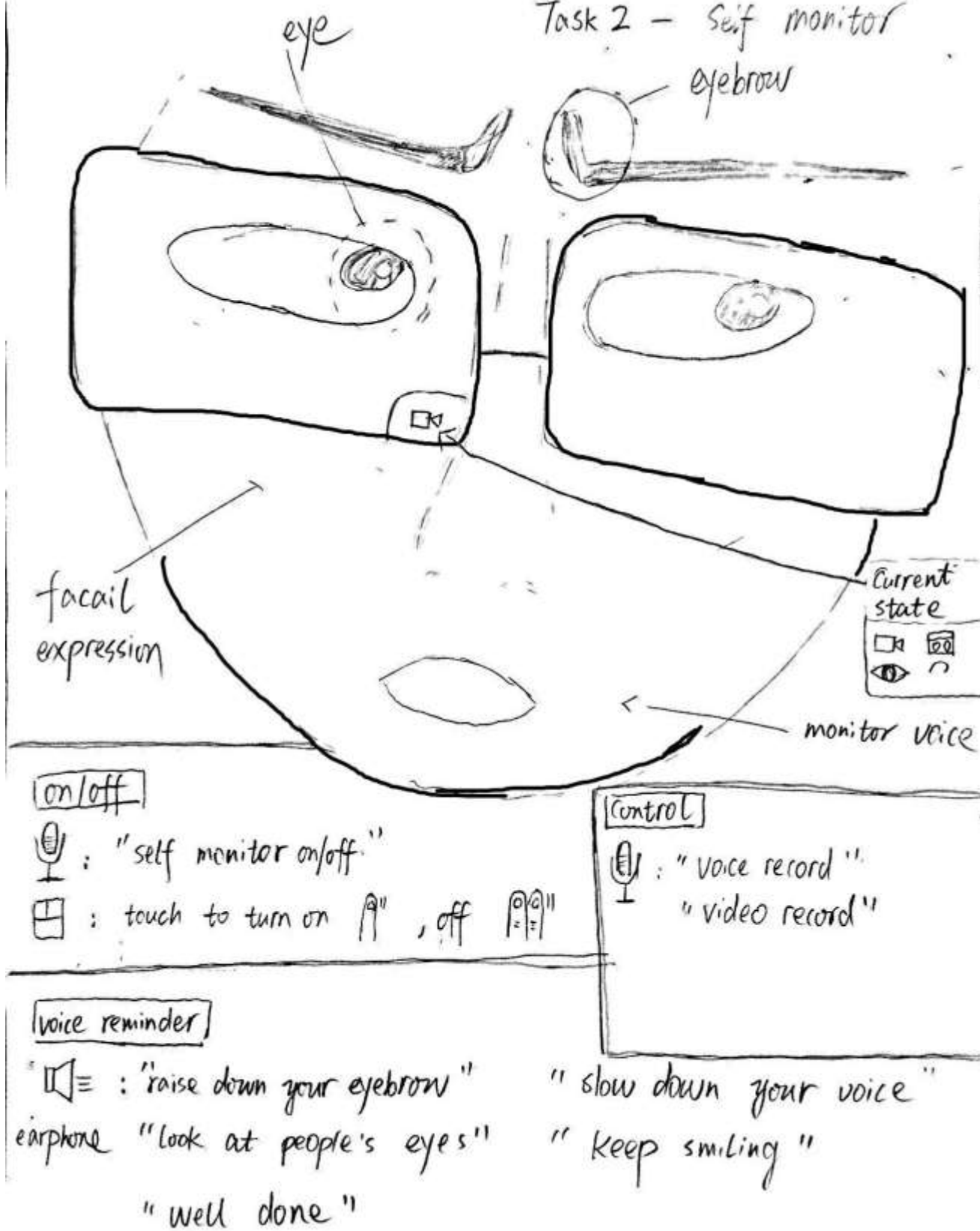
👤 : highlight + tracking most friendly people

option : 🗨️ Voice control — "next", highlight + tracking second friendlies people

— "exit friendness", quit searching

— "clear searching"

## Task 2 - Self monitor



### Task 3 - self monitor history

