GlassMADA
A Memory Assistive Display for Alzheimer's

TCM (Tofu Chow Mein)

218: Mubin Wang, Weichen Liu || 118: Chris Weller, Jason Tan, Xiaoran Peng
Breakdown

1. Introduction
2. Design
3. Implementation & Scenario
4. Testing & Evaluation
5. Team Structure & Closing
Introduction

The Problem And The Vision
Motivation

Alzheimer’s  ◇ No Existing Cure
◇ Current Treatments

New Technology  ◇ Body Camera
◇ Google Glass
◇ Commercial Use
AR and Contextual Awareness

Wearable Camera, QR, and Images with Context
The Goal

1. Retrieval and Review of Lost Information

2. Risks
   a. Satisfaction of Needs
   b. Android/Glass experience
   c. Integration of QR framework
   d. Glass Hardware
Design
Evolution, Architecture, and Rationale
Evolution

Unclear

Cohesive
Architecture

GlassMADA
- Scandit
- LiveCards

RESTful Server
- Flask
- Flask-RESTful
- Heroku

MADA Timeline
- jQuery
- Google Maps API
Rationale And Concern

- Unobtrusive Design
- Passive Interaction
- Ease of Review
Implementation & Scenario

A Day in the Life of GlassMADA
In the morning...

8:00 AM
Wakes up and put on Google Glass

8:45 AM
Having breakfast with family
QR scanning

John Smith
Sister's Husband
During the day...

11:30 AM
Seeing doctors

3:00 PM
Having a cup of coffee with old friends
Home screen & Photo-taking

Tap to Scan QR code
Say ok Glass and Follow

"ok glass"
In the night...

7:30 PM
After dinner, review the photos taken during the day on the website, with family members and care-giver
MADA Timeline

- Graphic display
- Filter on Person, Time, Location
- View location on Google Map
Testing & Evaluation

QR code test, System test
User Evaluation
QR Scanning Test

- 80 minutes continuously QR Scanning
- Noticeable temperature rising in 10 minutes
- Working in approximately 1 meter (QR size 10cm * 10cm)
- Works with dark situation and skewed QR
System Test

👍 Robust With glass fully charged, the app didn’t crash during our test.

Offline The app is still working even if wifi and bluetooth is not connected.
GlassMADA is easy to use... Always showing the instructions is helpful...

Operating Google Glass is confusing...
Evaluation

**Goal** Retrieval and Review of Lost Information

**Risks**

- a. Satisfaction of Needs
- b. Android/Glass experience
- c. Integration of QR framework
- d. Glass Hardware
Team Dynamics & Lessons Learned
Team Dynamics

Glass Team
- Mubin Wang
- Xiaoran Peng

WebDev Team
- Jason Tan
- Weichen Liu

Server-side Team
- Chris Weller
Lessons Learned

- Understanding needs is critical
- “Don't put all your eggs in one basket.”
- Technical Knowledge
  - Android/Glass Development
  - Glass Limitations
Future Work

- Integrate Body Camera
- Enhance Contextual Awareness
- Add Facial Recognition
Thanks!

Team 10 || TCM (Tofu Chow Mein)
218: Mubin Wang, Weichen Liu
118: Chris Weller, Jason Tan, Xiaoran Peng