UX of Photo Memory Feature

Keerthana Govindarazan* (Ideation, Study design, Data collection, Analysis)

Kumari Davis* (Study design, Data collection, Analysis)
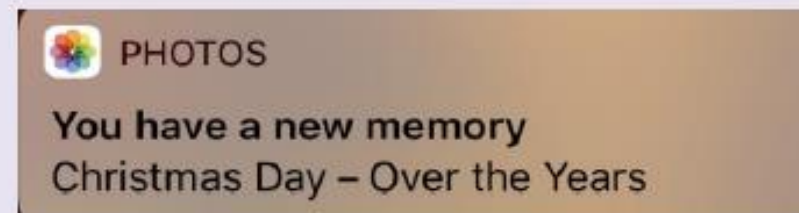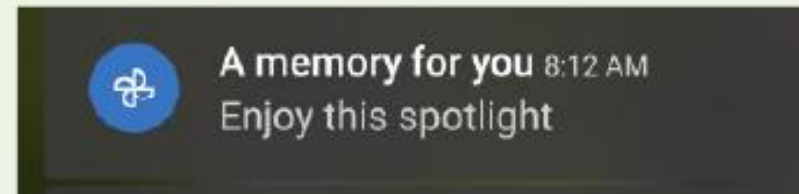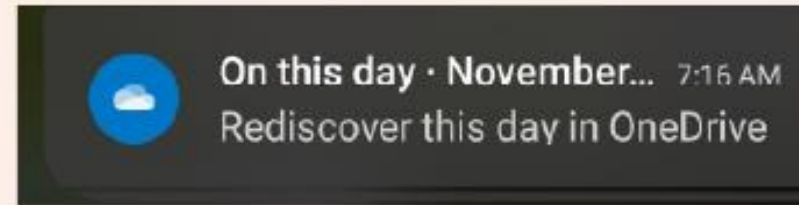
Soumika Mukerjee* (Data collection, Analysis)

*PhD Student, Penn State, USA

You have a new memory!

Problem: Algorithms tell us when to remember the past and what to remember!

How are users experiencing these memory recalls?

Goal: Identify design opportunities for more supportive memory experiences.

On this day · November... 7:16 AM
Rediscover this day in OneDrive

A memory for you 8:12 AM
Enjoy this spotlight

PHOTOS
You have a new memory
Christmas Day – Over the Years

Image generated with GPT-5.1

Research Questions

1. Why do people **engage** with these photo-memory notifications?

2. What **gratifications** do they experience?

3. How do these memories influence **behavior** (photo taking, sharing, planning social events etc.)?

4. How does these memories affect users' psychological **well-being**?

Mixed-Method Study

1. **7 in-depth interviews** (female 6, mean age = 28.66 yrs) → snowball Sampling

2. **Thematic Analysis** → Identified user experience/gratifications and common uses cases

3. **82-participant surve**y (female = 40, mean age = 35.5 yrs) → validated patterns & behavioral outcomes

4. **Multiple Linear Regression analysis** → identified predictors of engagement.

Thematic Analysis
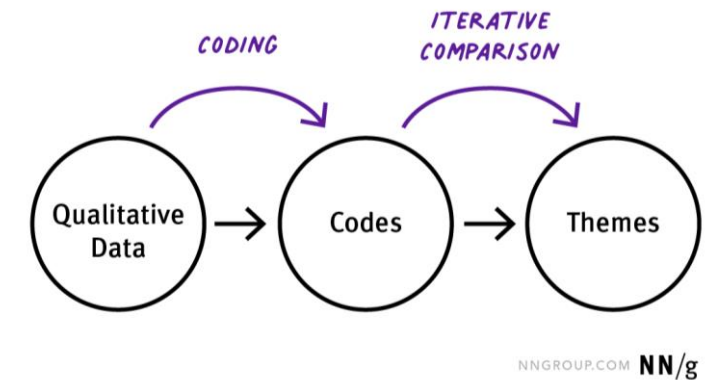
Survey design

Participant Recruitment

Statistical Analysis

Interview Study - Results

Gratifications

Nostalgia
Convenience in organizing 10k photos
Social Interaction gratifications
Entertainment benefits
Escapism
Reflection on the past

Behavioral and Psychological Outcomes

Intention to capture more photos
Intention to share unshared photos
Make plans with friends and family
Self-acceptance

Survey Results

Engagement with this photo memory feature is predicted by the gratifications of social interaction and entertainment.

Social interaction is the responsible for downstream behavioral outcomes.

Having control over the timing and content of this feature and self-reflection overall leads to user well-being.
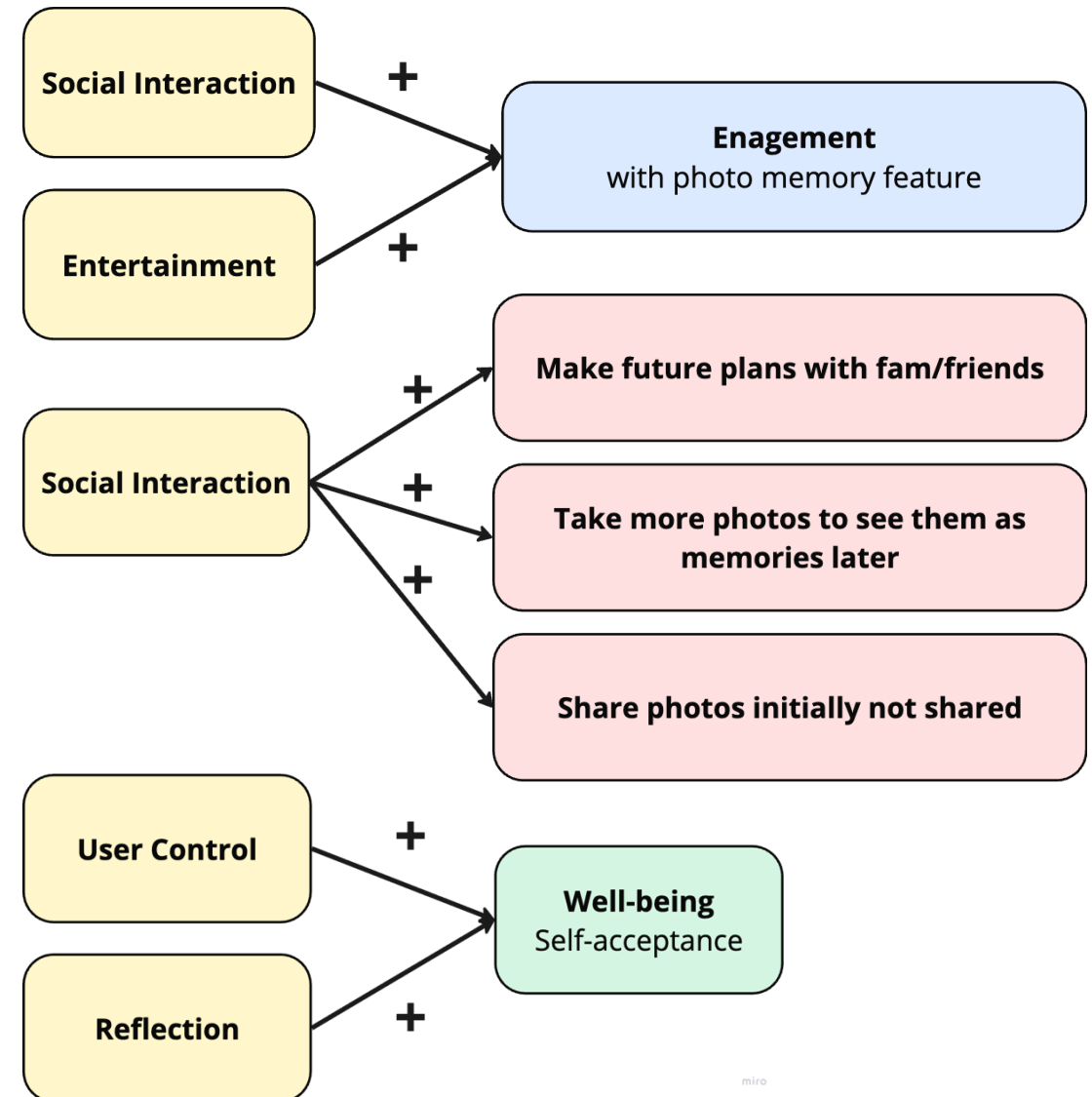
Design Takeaways

Memory features should balance reflection, autonomy, and social connection — supporting both engagement and user well-being.

Design for social connection to drive engagement

1. Surface socially meaningful clusters (people, relationships, shared events)

2. Enable co-memory features where users can invite friends to comment on memories.

3. Make sharing easy and provide new forms of content for entertainment and more social engagement.

Support emotional well-being through control

1. Let users choose when and what resurfaces

2. Provide "not now / hide similar memories / mute themes" options more clearly visible and not hidden away

Interview study

Sample Questions:

1. What 5 words describe what you enjoy about viewing/using photo memories notified by your phone?

2. Are there any specific benefits you receive from receiving memory notifications?

3. What uses of photo memory notifications are most important to you?

4. How do you think your phone's memory notifications influence your behaviors? Behavior we mean photo sharing, photo curating, photo taking)

Thematic Analysis of Participant responses

"I quickly open it. It will be first thing in the morning." P1

"Thematic arrangement of photo by the AI interests me." P6

"Zoom into faces- see changes over time." P4

"I am reminded that life goes fast when I look at the photo memories in the photo memory suggestions." P7

"I have lot of friends from a lot of countries. I sends these photos and talk to them" P2

"Photo memory notifications are a new form of entertainment for me." P2

"I like it when the photo memory suggestions curates a new album that I would not think of doing myself." P3

"Only negative memories make me feel bad for split second." P5

"Casual and non serious photo curation and titles are enjoyable for me" P8

"I don't have control over when I receive the notifications. Sometimes photo memories are pushed at the wrong time. I want control over when I receive my memory notifications." P1

"Sometimes I ignore the notifications. I open the notifications based on my mood." P9

"I am teaching the app to recognize faces and people and force it to create collages for them." P5

**"I share the photo memories to my friends.
I make plans for future with my friends/family to recreate the moments in my photo memories.
I correct how I take photos after looking at my old photos from photo memories.
Some photos seem insta worthy when I look back on it through the photo memory notifications.
I share of the photos I did not share when I took the photo." P2**

"Encourages me to take more photos to see more funny TITLES." P8

Online Survey Study
Sample Measures - Likert type questions

Engagement: I would quickly open the suggested memory.

Social Interaction: Photo memory suggestions allow me to stay in touch with my family/friends.

Entertainment: Algorithmically generated titles of notification entertain me. g) I enjoy the thematic arrangement of the photos.

Reflection: The memory notifications/photo memories make it easy to see how much I have changed.

User Control: I can customize the feature to fit my needs (e.g., disable memories of a specific person.

Behavioral Outcomes: a) The memory suggestions lead me to make plans for the future with my friends/family to recreate past moments. d) I improve how I take photos after looking at my old photos from photo memories. e) I find myself taking more photos because of these memory suggestions. f) I share the photos I did not share when I initially took the photo.

Analysis: Regression analysis controlling for age, gender and general tendency to interact with photos (n = 82).

The End.

Contact: kmg6763@psu.edu
Portfolio: www.govindarazan.com