Engram, an application of recording and throwing back memories with your parents

Tong Wu
tw8557@rit.edu

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Engram, an application of recording and throwing back memories with your parents

by

Tong Wu

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Fine Arts in Visual Communication Design

School of Design

College of Art and Design

Rochester Institute of Technology

Rochester, NY

December 1, 2020
Committee Approval:

Adam Smith  
Chief Advisor  
Associate Professor  
Director of Visual Communication Design program  
School of Design, College of Art and Design

Jason Arena  
Associate Advisor  
Associate Professor  
School of Design, College of Art and Design
Abstract

Adults can recall memories from the age of three. Our brains help us sort out important things for long-term memory and more trivial things for short-term memory. We pull up these pieces of memory when we need them. We can remember a lot, but we also keep forgetting, forgetting details.

Therefore, humans have always had the habit of recording. Today we record our lives by posting in social media, taking photos, and so on. In most of the more modern methods, we record our life initiatively, which means we need to do something to record a piece of memory. So, we mostly only record the unique things and easily ignore the tiny things like a common dinner or a usual TV night. But those little things are actually big parts of our life experience, especially when they relate to memories about our parents.

As we grow up, we no longer have enough time to spend with our parents. Our interactions with them are often routine and go unrecorded. For example, we might just sit in a room with them and talk. This usually does not make it in our life recordings, and many other routine meetings do not. The result is that our recordings do not include much about our parents, who are some of the most important people to us.

Engram is an app that is designed to solve this problem of only having records of unique situations but not the tiny moments. With user permission, Engram can mark details about every second of an interaction, such as the weather during that time or the distance between users and their parents, without any proactive operation. When users go through their past recordings, the small memory hints that were recorded by the software can help them recall memories.

Keywords Memory; Parents; Phone App; UX Design

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Introduction

The movie Coco said, “The death is not existed. We only die when others forget us.” 

There are many people in our memories; our teachers, our classmates, our friends, our family members or just some people we have met randomly. Among all these memories, parents hold a very special and important place.

However, the problem is people usually only record the unique or important things but ignore the tiny things. For the most part, the things that we experience with our parents are ordinary, or even mundane. Therefore, meetings with parents are easy to forget to write down or record specifically. For example, we have dinner every day. But we are more likely to take photos of a special dinner like a holiday dinner. Holiday dinners are special don’t happen every day. No matter how you record these memory fragments, in a journal, or a photo album, an active user operation is required which takes time and effort. It is hard for us to take a recording for every second in our life. This is why we choose to record more of the things that are most important. So, we are missing a lot of memories with our parents.

Engram is an app to record every single detail that happens between users and their parents. This paper talks about how I approached the final design of Engram, how Engram helps users to record and throw back both important and trivial memory, why Engram is different from other relevant products, and who Engram is designed for.

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2 *Coco*(Walt Disney studios home entertainment, 2017).
Context

There is a game which uses a grid and squares. Given the average life span of 75 years, we have about 900 months of our lives. We could draw 900 squares. The colored grids represent the months we already passed.  

- We can assume our parents are 50 years old. They have about 300 months left.

![Figure 1 Grid Game - Parents life, Image by the Author](image1)

- If we can meet our parents every day, the red grids are the time that we can accompany them. We can stay with them for the remaining 300 months.

![Figure 2 Grid Game - Everyday, Image by the Author](image2)

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• If we can meet our parents twice a month, the time that we can stay with them is 20 months.

![Figure 3 Grid Game - Twice a month, Image by the Author](image)

• If we can meet our parents once a year, the time that we can stay with them is only 1 month.

![Figure 4 Grid Game - Once a year, Image by the Author](image)

As we grow up, we will leave home for various reasons, go to other cities, and even go to other countries. In this case, we don't have much time to spend with our parents. That's why it's so important to keep track of our memories with our parents.
Evolution

• Methodology

This design followed the User Centered Design method, which is a method that focus on putting users at the center of product design and development. 4 Generally, user centered design includes 4 phases, understand context of use, specify user requirements, define solutions and evaluation. 5

• Design Goals (Problem Statement)

The goal of this design project is to create a product to solve the following problem: People don’t have enough memory records with their parents because people often record the unique things and ignore the tiny things.

• Solution: Memory Hints

The main method of Engram is to mark memory hints that can be detected by cellphones automatically. These hints can be distance, time, date, weather, location, and so on. Naturally, humans recall a full piece of memory by recalling some fragments first. 6 Memory hints could simulate users recalling the full memory. For example, users see an interaction history shows last Friday night at home from 6 pm to 7 pm with their parents. They would know that that was the time they had dinner with their parents.

Engram can record memory hints automatically, which means users have less responsibility to do so. They just need to give Engram permission to detect their situation.

• Troubleshooting: Privacy Issue

There are privacy concerns related to this design. Engram is an app that needs to track users’ location, which can make users concern about their privacy and safety when they use Engram. To address this problem, private locations

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like a user’s home are not exactly accurate in the app. Users can mark a range as their home place, which doesn’t need to be their precise location. When users are geospatially in this range, the GPS system would mark this range as home, and stop tracking their location until they leave this range. Besides, the Engram app only connects with users’ parents, which means only your parents can see your status.

• Mindmap

There are 2 keywords of this design: memory and family. I started to have an early rough idea by drawing a mind map. Through this, I figured that memory is composed by “what”, “when”, “who”, “where” and “why”. These elements are the memory hints that Engram records. We can use technology to record “when”, “who” and “where”. Engram also enables users to add “what” and “why” manually to compose a complete memory.

![Figure 5 Mind Map, Image by the Author](image)

• User Survey

I sent out an online survey questionnaire and collected 38 responses. There are 10 questions in this questionnaire to ask interviewee's basic information, their memory recording methods and habits, and their thoughts of recording
memories of their parents. Questions 1, 5, 7, 8 are single selection questions, and the rest are multiple selection questions. Following is the detailed analysis of this questionnaire:

1. **What is your age?**
78.68% interviewees are 18-24 years old. 18.42% interviewees are 25-34 years old. 5.26% interviewees are under 18 years old. 2.63% interviewees are 35-44 years old.

2. **How do you record your life?**
78.95% of interviewees post their life in social media. 71.05% of interviewees take photos and videos or make video logs. 60.53% of interviewees collect meaningful objects like tickets, letters, gifts, etc. 34.21% of interviewees write diaries or notes. 2.63% of interviewees don’t record their life.

3. **What kinds of things do you usually record?**
92.11% of interviewees record special occasions like travel, a special dinner, etc. 88.64% of interviewees record important ceremonies like birthdays, commencements, weddings, etc. 71.05% of interviewees record fun or unique things. 57.89% of interviewees record memories like the people they met, the places they have been, etc. 44.74% of interviewees record detailed thoughts about important occurrences.

4. **Which people are most likely to be in your recording?**
The top 3 people interviewees like to record are friends, themselves, and parents.

5. **Do you like to reflect on your previous life recordings? If so, how often?**
39.74% of interviewees reflect a few times a month. 36.84% of interviewees reflect a few times a year. 13.16% of interviewees don’t reflect on previous memory recordings. 10.53% of interviewees reflect a few times a week.

6. **Which kinds of things are you most likely to forget?**
52.63% of interviewees chose “Names”, like people’s names, city names, store names, etc. 47.37% of interviewees chose “Event or ceremony times and dates”. 28.95% of interviewees chose “Appearance”, like someone’s face, an object’s appearance, etc. 26.32% of interviewees chose “School, work or personal life missions.”

7. **How often can you see your parents?**
52.63% of interviewees can see their parents almost every day. 42.11% of interviewees can see their parents a few times a year. 5.26% of interviewees can see their parents a few times a month.

8. **Do you wish you had more time to see your parents?**
88.64% of interviewees chose yes.

9. **What do you usually do with your parents?**
The top 3 things interviewees do with their parents are: eating together, making voice or video calls, and watching TV or movies.

10. **If you don't have many recordings which include your parents, what's the reason?**

39.74% of interviewees think it’s because they don’t have enough time to see their parents. 28.95% of interviewees think it’s because the things they’ve experienced together are not special. 21.05% of interviewees said that they don’t like to record their parents.

From this survey, we can see that users have a need to record their lives, and to some extent they lack memories related to their parents. The reasons for this phenomenon include that users cannot meet their parents often. Even if they can, the things they experience together are not special enough.

• **Target Users’ Persona**

Through the previous user survey, the target users of this project will be:

- Young generation people, from ages 18-35
- Those who like to record their life with their parents
- Those who lack some methods to record common details of things
- Those who are willing to create more memories with their parents
And the target users can be divided into 2 groups based on their situation with their parents:

- People who can't spend much time with their parents

**Zoe**

*Age: 24*

*Status: Student*

*Current Location: Rochester, NY, USA*

*Home Location: Shanghai, China*

*Archetype: People who can't spend much time with their parents*

**Bio**

Zoe is an international student in America. She usually goes back home to see her parents every year for 1-2 months. For the rest of the year, she communicates with her parents through video or voice calls. She loves recording her life by taking photos and videos. But she wishes that she had a way to record her interactions with her parents, even when those interactions are through media.

**Figure 6 Persona - Zoe, Image by the Author**

- People who can stay with their parents often

**Amanda**

*Age: 22*

*Status: Student*

*Current Location: Rochester, NY, USA*

*Home Location: Rochester, NY, USA*

*Archetype: People who can stay with their parents often*

**Bio**

Amanda went to a university in her home city. She lives in her parents' house, and has dinner with her parents almost every day. After dinner, they usually watch TV together and talk. Sometimes on weekends Amanda hangs out with her friends. She and her friends like to go to exhibitions and cafes and also enjoy taking photos.

**Figure 7 Persona - Amanda, Image by the Author**
• Competitive Analysis

I chose 3 existing relevant apps to analyze their strengths and weaknesses to make my design unique in the market. These apps are: Zenly, Timehop and Reflectly. They are all apps about memory recordings. After comparing with these 3 apps, analysis showed that Engram is different from the existing apps in the market, with its particularity, but at the same time, it has a certain correlation with the existing successful apps to meet the needs of users and solve the corresponding problems.

![Figure 8 Competitive Analysis - Zenly, Image by the Author](image)

**Figure 8 Competitive Analysis - Zenly, Image by the Author**

![Figure 9 Competitive Analysis - Timehop, Image by the Author](image)

**Figure 9 Competitive Analysis - Timehop, Image by the Author**
• **User Journey Map**

In Engram, there are 3 main phases: record, customize and reflect. Engram records users’ life hints automatically. It also enables users to customize their memory, like adding descriptions to supplement the parts that can’t be detected automatically by Engram. Then, Engram offers a function of reflecting for users to recall their memories. In User Journey Map (figure 11), I described what kind of behaviors users have in each phase.
• **Storyboard**

The storyboard described 2 cases in which users can use Engram.

For the user group who can not spend much time with their parents, Engram mostly records the virtual company time, like their phone call time.

![Storyboard 1](image1.png)

For the user group who can stay with their parents often, Engram mostly records the distance between users and their parents, and their interaction time.

![Storyboard 2](image2.png)
• Information Architecture

Information architecture (figure 14) is the workflow of Engram. It shows what main pages Engram has, what features each page has and how to interact between pages. It clarified the contents of each page, which gives me direction when I do the interface design later.

Figure 14 Information Architecture, Image by the Author
• Early Testing

After previous ideation, I used User Centered Design Canvas7 (figure 15). This canvas confirmed that Engram can solve the problem of this project and meet the needs of users and the market. Firstly, automatic record can solve the problem that it’s hard for people to record every second and those common things in their life. And these are the things that we experience most with our parents. Record of virtual interaction with parents can solve the problem that users can’t meet their parents in person. Reflecting mode can help users to recall memories. Secondly, Engram is different from existing apps. It records memory based on memory hints and offers a throwback function.

![User Centered Design Canvas](https://ucdc.therectangles.com/)

**Figure 15 UCD Canvas, Image by correct source and The Rectangles, therectangles.com and edited by the Author**

Body of Work

• Design guideline

The font of Engram is “SF Compact Rounded”. San Francisco font family was created by Apple. It’s a standard and widely used font type. Since Engram is an emotionally related app, I chose the less serious rounded series.

For color choice, Engram has 2 different color styles with some similarities. In the record phase, it’s a white with pink-blue gradient. This style is easy to read and has clear hierarchy. White parts are the basic information, and gradient parts are the important or selectable information. Because users can carry out many operations in the record phase, there are many functions. However, in the reflect phase, I want to give users an immersive experience. So I am using the black with pink-blue gradient.

The icons are designed to fit the overall style of the app. They have a thin border and two color styles, white or gradient, depending on the background color.

![Figure 16 Design Guideline, Image by the Author](image)

• Final design & Features

Feature 1: Record your “company” and “separation” interactions with your parents automatically

Engram keeps a real-time record of how long you and your parents spent together in the same place, or record a remote phone call, the weather at that time, the time of that day, and everyone’s status when they were separated.

Figure 17 Feature 1, Image by the Author
Feature 2: Company diary shows your interaction with your parents

The company diary is a timeline of users’ real-time record. Users can go through their interaction history at any time.

Figure 18 Feature 2- in person company diary, Image by the Author

Figure 19 Feature 2- virtual company diary, Image by the Author
Feature 3: Immerse in your old memories and see your company data with your parents

The reflect feature shows users the total company time of each month and the locations visited during the year or month. Engram uses different sizes and color dots to represent months straightforwardly. The rule of Engram is if in-person company time $\geq 10,000$ mins or total company time $\geq 20,000$ mins, the month will be marked with a big pink dot. Otherwise, it will be a small blue dot.
Feature 4: Monthly/yearly memory summary take you back to the highlight time

The memory summary uses year/month-end summary to show users some highlights from their past interactions with their parents. It includes total company time, virtual company time, in-person company time, monthly maximum/minimum company time, maximum/minimum distance, the day with the most photo uploads, and the day with the longest thoughts.

![Figure 22 Feature 4, Image by the Author](image-url)
• **User Scenarios with User Flow**

  - Zoe: People who can't spend much time with their parents (*Persona information is in page 8*)

User Scenario 1 (figure 12): Zoe is in America while her parents are in China. They usually connect with each other via phone calls. Zoe wants to share more life with her parents.

*Figure 23 User Flow 1, Image by the Author*
Amanda: People who can stay with their parents often (*Persona information is in page 9)

User Scenario 1 (figure 13): Amanda lives with her parents. She has a lot of time to stay with her parents. But when she checked her photo album, she realized there were not many photos about her parents. She wants to create more memories with her parents.

Figure 24 User Flow 2, Image by the Author

Check more information about this work in https://designed.cad.rit.edu/vcdthesis/project/engram-tong-wu

Evaluation & Discussion

- Usability Testing

Usability testing is a way to test your product with real users before putting it on the market. Participants are usually asked to complete tasks by using a product’s wireframes or using a prototype product while they are being observed by a researcher. The researcher will make notes about the problems that participants meet during the testing. If more than one person encounters similar problems, this means that there are some design issues which need to be solved. ⁹

3 participants were arranged for my usability testing. Here are the results:

The first participant’s task was to go to the “company diary” page from the homepage (real-time map). She finished this task in 1 minute. She was slightly confused in the map page because she didn’t know if she should click the account profile or the “heart” icon to go to the next page, but she quickly figured it out on her own.

The second participant needed to go to the “reflect” page from the homepage to try the time reflecting and location reflecting. He used about 3 minutes to finish this task. He clicked other user’s profile photos at first and went to “company page” wrongly. He then tried a second time and clicked the correct button to find the “reflect” page. Next, he took a while to find out how to switch time reflecting mode to location reflecting mode.

The third participant was asked to find the distance between Amanda and her dad and what her dad was doing while they were having a phone call. She started this task in the homepage and finished it in one minute.

Through usability testing, I knew that I need to make some abstract buttons easier to understand in the future refinement like the “reflecting” button, “memory summary” button, “current status” button, or the “time/location” button in “reflecting” page.

• Future Iterations and Associated Impacts

Engram can have more possibilities. Right now, it focuses on the memory between users and their parents. Parents are a good subject to be at the beginning stage and to test the market. In the future if the method of Engram proves to be successful, Engram could also be used between users and their other family members like kids, romantic partners, and so on. It could also be used with users’ friends, and even their pets.

Also, the motion graphics and interactive way of reflecting can be improved in the future. Currently, it only uses simple animation effects to switch between pages like scrolling, clicking, and zooming in and out. The reflecting phase is a relatively independent part of the entire app. It has black with gradient design style which is different from the bright style of recording phase. This antithetical style allows users to plunge from the bright real world into their memories. So, it could be more complicated and include fantasy motion effects.
• Research Review

For this project, I approached the final solution with the following research steps:

1. Investigated users with questionnaires

User surveys before ideation helped me clarify my user groups and understand users’ thoughts about the problem and their painpoints.

2. Clarified user groups with user persona, user journey map, and storyboard

Personas are fictional characters, which I created based upon research in order to represent the different user types.\(^\text{10}\)

My research helped me think from users’ perspectives, and know what the different needs of different users are.

Next, I created a user journey map to think about what kinds of functions I could have in my final app and how users would interact with them. Lastly, I drew storyboards with different characters to simulate their specific scenarios.

3. Investigated markets with competitive analysis

Competitive analysis helped me get into the market. It helped me learn from the experience of similar products to further understand the needs of users. At the same time, I tried to make up the gap in the existing market, and design a unique product.

4. Testing and validation

There are 2 testing methods that I used. Before the final design, I used User Centered Design Canvas (figure 15) to test if my ideation process was logical, and if the idea could solve the problem. After my final design, I conducted usability testing with 3 people to test if my design was user friendly.

Conclusion

Nowadays, due to the development of science and technology, people are busy with their work and lack attention to emotion. Young people who leave home spend very little time with their parents, often spending only a few days together each year during the holidays. Sometimes, even though they are always around our parents, it is easy to neglect the communication with parents and pay more attention to other things. Aiming at this social phenomenon,

this project provides people with a new way to get along with their parents by recording memories. No matter if they can stay with them or not, they can always connect with their parents and pay attention to them.

We break down all of our memories. All the big or small things contain some given memory elements, such as place, time, weather, etc. The product introduced in this paper is to mark the small details of people's life experience by recording these subtle elements. This type of recording can be done without user involvement and can be recalled later. It is a new type of electronic diary.

In this design, I followed the most important methodology. I used User Centered Design in user experience design to promote the whole design process, from the problem elaboration in the early stage, investigation and research, interface and prototype design in the middle stage, and then usability testing in the last stage. This meets the requirements of a complete and professional design. However, at the same time, this project still has a large space for development. It needs to be updated and iterated into more of a commercial product through additional market testing and research in the future.
References


Prompt
The movie Coco said, “The death is not existed. We only die when others forget us.”

Problem
People don’t have enough memory records with their parents because people often record the unique things and ignore the tiny things.

Solution
Engram is an app to record every single detail that happens between users and their parents.
Visual Communication Design MFA
Communication Interaction Motion & 3D Design Studies
Virtual Company Status, even if you are far from your parents

Virtual mode records the time and duration of phone calls between connected users and also the their status such as location they’re in, and the weather at that time.

<table>
<thead>
<tr>
<th>Project</th>
<th>Keywords</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Thesis: APP Design</td>
<td>Memory, Parents</td>
<td>Jan 2020 - Dec 2020</td>
</tr>
</tbody>
</table>

The movie Coco said, “The death is not existed. We only die when others forget us.”

Problem

People don’t have enough memory records with their parents because people often record the unique things and ignore the tiny things.

Solution

Engram is an app to record every single detail that happens between users and their parents.

Real-time map, marks your life with your parents
Company diary, your interaction with your parents

The company diary is a timeline of users' real-time records. Users can go through their company history at any time.
Virtual Company Status, even if you are far from your parents

Virtual mode records the time and duration of phone calls between connected users and also the their status such as location they're in, and the weather at that time.

Separation Status, share everyone's updated status

When you and your parents are not doing anything together, Engram can still track everyone and give updates in the app. You can view what other users are doing and have online interactions with them, like posting an emoji to tell them your feelings.

Individual diary

1. In the personal diary page, there is a real-time map to update users' status
2. Button: click this button to view your company diary with this user
3. Time selection
4. Diary shows the interaction by timeline
5. Icon: show users' status at that time

In-app menu options: share, export, settings, help, and more.
My diary, view and manage your own timeline

If you don't want others to see your status, you can choose stealth mode. Also you can view a timeline that Engram creates for you and choose if you want to show it to users publicly.

Reflect mode, immerse in your old memory

The reflect feature shows users the total time spent with company of each month and the locations visited during the year or month.
Memory summary, taking you back to highlight memories

The memory summary uses year/month-end summary mode to show users some intersection highlights with their parents from the past.

Who uses Engram?

- People who can't spend much time with their parents

- People who can stay with their parents often

Style Guideline
Design Process

Science Background

On the scientific level, Engram conforms to the mechanism of the human brain to store memories and helps users deepen their memories. In terms of the market, Engram is different from the existing apps in the market, with its particularity, but at the same time, it has a certain correlation with the existing successful apps to meet the needs of users and solve the corresponding problems.

• Memory Creation
Our brain sends signals in a particular pattern associated with the event we're experiencing and creates connections between our neurons, called synapses.

Reference: https://www.fastcompany.com/5036339/6-science-backed-methods-to-improve-your-memory

• Memory Consolidation
We begin to store memories when we are 3 years old. The human brain is said to have the memory capacity of 150 billion computers [80 gigabytes of storage on average]. Our brains help us sort out important things for long-term memory and more trivial things for short-term memory.

If we didn't do anything further, that memory would fall right out of our heads again. Consolidation is the process of committing it to long-term memory so we can recall it later.

Reference: https://www.fastcompany.com/5036339/6-science-backed-methods-to-improve-your-memory

• Memory Recall
Researchers at the Centre for Human Brain Health at the university of Birmingham have reconstructed the memory retrieval process using brain-decoding technology. It turns out that when we recall something from the past, the brain reconstructs the experience in reverse order, recovering the “gist” first -- and then recalling more specific details, which is contrast to how the brain processes images for the first time. We can find a point to stimulate memory and then recall the whole thing.

Reference: https://www.fastcompany.com/5036339/6-science-backed-methods-to-improve-your-memory
User Survey

Through user surveys, the target users of Engram will be:
- Young generation people, mostly from ages 18-35
- People who like to record their life with their parents
- People who lack methods of recording the common details in their life
- People who are willing to create more memories with their parents

What's your age?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
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<tbody>
<tr>
<td>Under 10</td>
<td>3.25%</td>
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<tr>
<td>10-14</td>
<td>49.09%</td>
</tr>
<tr>
<td>15-19</td>
<td>36.96%</td>
</tr>
<tr>
<td>20-24</td>
<td>5.66%</td>
</tr>
<tr>
<td>25-29</td>
<td>3.25%</td>
</tr>
<tr>
<td>30-34</td>
<td>0.00%</td>
</tr>
<tr>
<td>35-39</td>
<td>0.00%</td>
</tr>
<tr>
<td>40+</td>
<td>5.66%</td>
</tr>
</tbody>
</table>

How do you record your life?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photos</td>
<td>79.05%</td>
</tr>
<tr>
<td>Video clips</td>
<td>9.75%</td>
</tr>
<tr>
<td>Social media</td>
<td>1.75%</td>
</tr>
<tr>
<td>Written stories</td>
<td>6.75%</td>
</tr>
<tr>
<td>Other</td>
<td>2.75%</td>
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</tbody>
</table>

What kind of things do you usually record?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special memories</td>
<td>69.34%</td>
</tr>
<tr>
<td>Important events</td>
<td>37.39%</td>
</tr>
<tr>
<td>Places</td>
<td>37.39%</td>
</tr>
<tr>
<td>People you love</td>
<td>37.39%</td>
</tr>
<tr>
<td>Events</td>
<td>37.39%</td>
</tr>
<tr>
<td>Other</td>
<td>10.00%</td>
</tr>
</tbody>
</table>

Which people are most likely to be in your recording? Please sort.

<table>
<thead>
<tr>
<th>People</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends</td>
<td>69.34%</td>
</tr>
<tr>
<td>Family</td>
<td>37.39%</td>
</tr>
<tr>
<td>Others</td>
<td>37.39%</td>
</tr>
</tbody>
</table>

Do you like to reflect on your previous life recordings? If so, how often?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every time</td>
<td>59.18%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>19.92%</td>
</tr>
<tr>
<td>Never</td>
<td>21.15%</td>
</tr>
</tbody>
</table>

Which kinds of things are you most likely to forget?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names, places, events, etc.</td>
<td>59.18%</td>
</tr>
<tr>
<td>Faces, the person's face, facial appearance, etc.</td>
<td>37.39%</td>
</tr>
<tr>
<td>Numbers, dates, times, etc.</td>
<td>37.39%</td>
</tr>
<tr>
<td>Other things you think are important</td>
<td>37.39%</td>
</tr>
</tbody>
</table>

How often can you see your parents?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost every week</td>
<td>29.79%</td>
</tr>
<tr>
<td>Once a week</td>
<td>19.92%</td>
</tr>
<tr>
<td>Twice a month</td>
<td>19.92%</td>
</tr>
</tbody>
</table>

Do you wish you had more time to see your parents?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>59.18%</td>
</tr>
<tr>
<td>No</td>
<td>19.92%</td>
</tr>
<tr>
<td>Slightly</td>
<td>19.92%</td>
</tr>
</tbody>
</table>
**Competitive Analysis**

- Zenly
- Time Hop
- Reflectly

**Intro**

Reflectly is a journaling app that vents your thoughts & feelings to trash your mood & increase happiness. Get daily insight & explore how you feel with your own digital diary. Reflectly is a personal journal and diary driven by artificial intelligence to enable users to deal with negative thoughts, make positivity louder and to teach you about the science of well-being.

**Strengths**

- It's a journal to solve mental problems, which is a very unique but important field. This makes Reflectly different from other journal apps.
- It helps users relax, focus on themselves and release pressure.

**Weaknesses**

- Most users complained about the premium and important field. This makes Reflectly different from other journal apps.
- Users even need to pay for some very fundamental functions.

**User Journey Mapping**

In Engram, there are 3 main phases: record, customize and reflect. Engram records users' life hints automatically. It also enables users to customize their memory, like adding descriptions to supplement the parts that can't be detected automatically by Engram. Then, Engram offers a function of reflecting for users to recall their memories.
Storyboarding

People who can’t spend much time with their parents

People who can stay with their parents often

User-Centered Design Canvas

This canvas confirmed that Engram can solve the problem of this project and meet the needs of users and the market.

Firstly, automatic record can solve the problem that it’s hard for people to record every second and those common things in their life. And these are the things that we experience most with our parents. Record of virtual interaction with parents can solve the problem that users can’t meet their parents in person. Reflecting mode can help users to recall memories.

Secondly, Engram is different from existing apps. It records memory based on memory hints and offers a throwback function.

User Centered Design Canvas by TheRectangles

3. PROBLEM
We often record the unique things but ignore the tiny things that happen every day.

4. NERVES
- want to spend time with their parents but don’t have the chance in reality
- want to reflect memory of their parents who already left (died/departed)

5. TOOLS
- need time to record (take photos, videos) by themselves
- don’t want to post parents in social media
- don’t have many special moments with parents

6. BUSINESS
Engram
A memory recording and throwback app with your parents.

6. COMPETITIVE ADVANTAGES
- focuses on the memories with parents
- records tiny, simple things automatically
- gives users a way to view the past

7. ALTERNATIVES
- write a diary, take photos for everything

8. UNIQUE VALUE PROPOSITION
Engram is an app that shortens your distance with your parents and sparks your memories.

- install cameras at home
- don’t record life

Information Architecture

Information architecture is the workflow of Engram. It shows what main pages Engram has, what features each page has and how to interact between pages.
Conclusion

Nowadays, due to the development of science and technology, people are busy with their work and lack attention to emotion. Aiming at this social phenomenon, this project provides people with a new way to get along with their parents by recording memories.

Also, Engram can have more possibilities. Right now, it focuses on the memory between users and their parents. Parents are a good subject to be at the beginning stage and to test the market. In the future if the method of Engram proves to be successful, Engram could also be used between users and their other family members like kids, romantic partners, and so on. It could also be used with users' friends, and even their pets.
Appendix 2 - Presentation
Engram is an app to record every single detail that happens between users and their parents.
Problem

People don’t have enough memory records with their parents because they often record the unique things and ignore the tiny things.
Problem

People don't have enough memory records with their parents because people often record the unique things and ignore the tiny things.
Problem

People don’t have enough memory records with their parents because people often record the unique things and ignore the tiny things.

Solution

Mark **memory hints** that can be detected by cellphones automatically. These hints can be distance, time, date, weather, location, and so on.

Automatically: when/who/where
Manually: what/why
Engram keeps a real-time record of how long you and your parents spent together in the same place or had a remote phone call, and everyone’s status when they were separated.

Real-time map, marks your life with your parents
Company diary, your interaction with your parents

The company diary is a timeline of users’ real-time records. Users can go through their company history at any time.
Virtual Company Status, even if you are far from your parents

Virtual mode records the time and duration of phone calls between connected users and also their status such as location they're in, and the weather at that time.
Separation Status, share everyone’s updated status

When you and your parents are not doing anything together, Engram can still track everyone and give updates in the app. You can view what other users are doing and have online interactions with them, like posting an emoji to tell them your feelings.
My diary, view and manage your own timeline

If you don’t want other’s to see your status, you can choose stealth mode. Also you can view a timeline that Engram creates for you and choose if you want to show it to users publicly.
Reflect mode, immerse in your old memory

The reflect feature shows users the total time spent with company of each month and the locations visited during the year or month.
Memory summary, taking you back to highlight memories

The memory summary uses year/month-end summary mode to show users some interaction highlights with their parents from the past.
Who uses Engram

- Young generation people, mostly from ages 18-35
- People who like to record their life with their parents
- People who lack methods of recording the common details in their life
- People who are willing to create more memories with their parents
- People who can’t spend much time with their parents
People who can stay with their parents often

Amanda

Age: 22
Status: Student
Current Location: Rochester, NY, USA
Home Location: Rochester, NY, USA
Archetype: People who can stay with their parents often

"I stay with my parents all the time, but I don't have any special things to do with them"

Bio
Amanda went to a university in her home city. She lives in her parents' house, and has dinner with her parents almost everyday. After dinner, they usually watch TV together and talk. Sometimes on weekends Amanda hangs out with her friends. She and her friends like to go to exhibitions and cafes and also enjoy taking photos.

Personality

<table>
<thead>
<tr>
<th>Introvert</th>
<th>Extrovert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive</td>
<td>Active</td>
</tr>
<tr>
<td>Perceptual</td>
<td>Rational</td>
</tr>
<tr>
<td>Cold</td>
<td>Warm</td>
</tr>
</tbody>
</table>

Actions

| Write posts in social media | Stay at home | Host a party/ ceremony | Hang out with friends/parents outside |

Problems
- The things she's been experiencing with her parents have become too regular for her. It’s not the type of thing that she usually records.

Needs
- Find a way to record common small things.
Why Engram works?
Scientific Theory

- **Memory Creation**  
  [https://www.fastcompany.com/3028359/6-science-backed-methods-to-improve-your-memory]

Our brain sends signals in a particular pattern associated with the event we’re experiencing and creates connections between our neurons, called synapses.

- **Memory Consolidation**  
  [https://www.fastcompany.com/3028359/6-science-backed-methods-to-improve-your-memory]

We begin to store memories when we are 3 years old. The human brain is said to have the memory capacity of 150 billion computers (80 gigabytes of storage on average). Our brains help us sort out important things for long-term memory and more trivial things for short-term memory.

If we didn’t do anything further, that memory would fall right out of our heads again. Consolidation is the process of committing it to long-term memory so we can recall it later.

- **Memory Recall**  
  [https://zhidao.baidu.com/question/2208914719452869188.html]

Researchers at the Centre for Human Brain Health at the university of Birmingham have reconstructed the memory retrieval process using brain-decoding technology. It turns out that when we recall something from the past, the brain reconstructs the experience in reverse order, recovering the "gist" first -- and then recalling more specific details, which is contrast to how the brain processes images for the first time. We can find a point to stimulate memory and then recall the whole thing.
Competitive Analysis

Intro
Zenly is a map that lets you know what your friends and family are up to. Millions of people around the world have shown that Zenly brings you to spend more time with the people who matter most and moves you a little closer to them even when you can't.

Strengths
- Allows users be closer to their friends through technology.
- Record life details like the places you've been, your phone battery

Weaknesses
- No throwback function, focus on real-time
- Users concern about privacy issues
Competitive Analysis

Intro
Timehop is a photo memories app. What makes it special is that it not only displays photos from years ago, but it also shows the contrast between the past and the present. Every day, tap through your old photos, videos, & posts from your phone, Facebook, Instagram, Twitter, and Swarm.

Strengths
- The throwback photos helps users recall the past and reminds them of what happened in the past.
- It connects with users’ social media and photo app, which includes the most memory of contemporary people.

Weaknesses
- Ads and system problems
- Lack of initiative, difficult to customize
Competitive Analysis

Intro
Reflectly is a journaling app that helps you track your thoughts & feelings to improve mood & increase happiness. Get daily insights & explore how you feel with your own mental diary. Reflectly is a personal journal and diary driven by artificial intelligence to help users deal with negative thoughts, make positivity louder, and teach you about the science of well-being.

Strengths
- It's a journal to solve mental problems, which is a very unique but important field. This makes Reflectly different from other journal apps.
- It helps users relax, focus on themselves, and release pressure.

Weaknesses
- Most users complained about the premium and ads. You even need to pay for some very fundamental functions.
## Early Testing

### User Centered Design Canvas

<table>
<thead>
<tr>
<th>3. PROBLEMS</th>
<th>4. MOTIVES</th>
<th>1. BUSINESS</th>
<th>5. FEARs</th>
<th>2. USERS</th>
<th>6. SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- We often record the unique things but ignore the tiny things that happen every day.</td>
<td>- want to spend time with their parents but don’t have the chance in reality</td>
<td>- Engram A memory recording and throwback app with your parents.</td>
<td>- need timeto record (take photos..) by themselves</td>
<td>- People who can stay with their parents often</td>
<td>- record routine things automatically</td>
</tr>
<tr>
<td>- The things we experience with our parents are mostly common and tiny things.</td>
<td>- want to reflect memory of their parents who already left (died/departed)</td>
<td></td>
<td>- don’t want to post parents in social media</td>
<td>- People who cannot spend much time with their parents</td>
<td>- make a throwback summary</td>
</tr>
<tr>
<td>- It’s hard to record memories with parents.</td>
<td></td>
<td></td>
<td>- don’t have many special moments with parents</td>
<td></td>
<td>- customize simple memories to make them special</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. COMPETITIVE ADVANTAGES</td>
<td></td>
<td>7. ALTERNATIVES</td>
<td>- connect to social media to record special memories</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- focuses on the memories with parents</td>
<td></td>
<td></td>
<td>- ask for permission for each activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- records tiny, simple things automatically</td>
<td></td>
<td></td>
<td>- only connect with the closest person</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- give users a way to view the past</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. UNIQUE VALUE PROPOSITION</td>
<td>9. UNIQUE VALUE PROPOSITION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Engram is an app that shortens your distance with your parents and sparks your memories.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

User Centered Design Canvas is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License — you can use it in any way you like as long as you give credit to The Rectangles by mentioning the author or linking to therectangles.com.
How to use Engram?
User Journey Map

**Phase: Record**
1. Record company time when connected users' location are in a specific range.
2. Record each users' normal status, like:
   - Students: record class name, time, location
   - Worker: record company name, role, commuting time
3. Record environment status: city, weather, holiday, big event
4. Record communications that detected from other app: phone call, video call, messages
5. Record each connected users' location with permission and share to others

**Phase: Customize**
6. Add description, thoughts, moods for existed recording.
7. Post own records (photos/videos/texts)

**Phase: Reflect**
8. View Weekly/Monthly/Yearly reflect summary that shows key memory with your connected people
9. Share your report to your social media or save it
Storyboard

- People who can't spend much time with their parents

Persona: Zoe

Zoe synced her class schedule with Engram. So Engram records her status when she's in class.

At the same time, her parents are sleeping in another country. Engram marked this too.

When Zoe has a video call with her parents, Engram records the time and duration of the call in minutes.
Storyboard

- People who can stay with their parents often

**Scenario 1**

Amanda is watching TV with her parents tonight.

Engram detects their phones in the same location, their home.

Engram marks this activity with a date, time, and location.

**Scenario 2**

Amanda and her parents are working in different places.

Engram marks their frequent locations in the app. Whenever they are at work the app will recognize that and set their statuses to "working".

In the diary page they can make notes to describe their day, such as their mood and thoughts.
Design Process
Mind Map

Memory
- photos (old)
- photo wall
- story (memory)

Family
- parents/kids
- grow-up
- photo/video diary

STAY TOGETHER:
- what/when/where/who/why/
duration
- not or stay together
- company
- "game" (remaining grid)
- text message or video call
- overseas student — long distance

Not:
- what/when/where/who/why/
duration

Mexican holiday "Day of the Dead" or "CoCo (remember me)"

Suggestion: Photo Wall
"CoCo" "game" (remaining grid)

Solution: what when where who why
How: device (watch / card/chip) + app (for mobile edit)
Information Architecture

- Map (location/weather)
- Connect users' profiles
  (status: working/takes shopping)
- Company status
  (distance/time duration/current time)
- Together or not (different UI style)
- Drawer: company diary, setting, my diary
- Interaction: mood/text

Profile Photo

- Profile photo
  - Diary card
  - Current status (real-time map)
  - Photo library

Page: My Diary

- Profile: My Diary
  - Filter: relation (has)
  - Diary card
  - Company card with me
  - Current status (real-time map)
  - Photo library

Page: Other's diary

- Profile: Other's diary
  - Filter: person that I want to see my
    interaction with
  - Filter: time (week/month/year)
  - Button: diary model/effecting mode
  - Diary card: where, what, where
  - Export/share need other's agreement
  - Photo library

Page: Company Diary

- Company status quick view
  - Tap: Company status quick view
  - Drawer: Company diary

- Button: check company diary

Page: Connecting Map

- Drawer: Company diary
  - Button: check company diary

- Drawer: My diary
  - Button: go to his/her diary

- Color: Company or alone
  - Drawer: Company diary
  - Button: Stealth mode

- Button: Reflect Mode

- Profile: Reflect Mode
  - Filter: person that I want to see my
    interaction with
  - Filter: time (week/month/year)
  - Button: diary model/effecting mode
  - Diary card: where, what, where
  - Export/share need other's agreement
  - Photo library

Page: Reflecting

- Button: Real-time Recording

- Button: Engram Wrapped

- Button: Time
  - Memory Calendar
  - Instruction of data visualization
  - Animation
  - Scroll to change month:
    Click to change month/day:

- Button: Exit Wrapped

- Button: Export/Share

- Wrapped
Style Guideline

01 The Palette

02 Fonts

03 Icons
Iteration

Rough Sketch

- People connection (e.g., Create a family page)
- Experience Map
- Record details (who/where/when)
- Record note (editable: diary/images/videos)

35:23

Current data
Connected People

Tony Wu
2019-20 Thesis
Visual Communication Design

2020-21 Thesis Project
Conclusion

Problem
People don’t have enough memory records with their parents because people often record the unique things and ignore the tiny things.

Solution
Engram is an app to record every single detail that happens between users and their parents.

Find more of my work here
https://designed.cad.rit.edu/vcdthesis/project/engram-tong-wu
References


Thanks for watching!