

# **MOM! Can I not bring the lunch box to school?**

Collective Memoirs of the Asian Second Generation in The U.S. after 1965

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# Abstract

This research illuminates the experiences of second-generation Asian immigrants in the U.S., a rapidly growing demographic predicted to become the largest immigrant group by 2065. Despite sharing an Asian heritage, these individuals navigate between two contrasting cultures - the East and the West - shaping their self-identity and societal integration. The study aims to narrate their stories, elucidating their struggles with integration into American society, and their journey of identity formation that straddles their own and their parents' cultural norms. Methodology includes primary interviews, secondary memoir collections, interview transcripts, film clips, social media, and reviews to create a database of memories. Data will be categorized through machine learning techniques for labeling and classification, and emotion recognition technology in tandem with generative AI. This approach allows for the identification of key themes and words that connect various fragments of their memories. The ultimate objective is to provide visibility to their experiences and foster greater understanding among this marginal population.

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## The Emigrants

"If you came back, you wanted to leave again.  
If you went away, you wanted to come back.  
Wherever you were, you could hear the call of the homeland, like the note of a herdsman's horn.  
Far away in the hills,  
You had one home out there and one over here,  
And yet, you were an alien in both places.  
Your true abiding place was the vision of something very far off  
And your soul was like the waves, always restless, forever in motion,  
Never at home."  
"Only those who risk going too far can possibly find out how far they can go."

T.S. Eliot

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## Introduction

The objective of this paper is to present an in-depth exploration of the experiences of second-generation Asian immigrants in the United States, a rapidly growing demographic group. Despite their increasing numbers, these individuals have received relatively little attention in the research literature, and the complexities of their experiences are underrepresented. This paper aims to fill this gap by documenting their stories and experiences, offering a nuanced understanding of their unique perspectives, and contributing to a more inclusive discourse on immigration and societal integration in America.

# **Background and Personal Motivation**

## **Who are Asian Second Generation?**

The United States has witnessed a significant transformation of its immigrant population since the 1960s. As per the 2018 data, the country hosted a record 44.8 million immigrants, constituting 13.7% of the total population. This increment in the immigrant population has been characterized by a marked shift in the regions of origin. The Immigration and Naturalization Act of 1965 has fundamentally altered the demographics of the immigrant community in the United States. Notably, the annual influx of Asian immigrants has outpaced that of Hispanic immigrants since 2010 (Noe-Bustamante, 2020).

The term "second-generation Americans" refers to individuals born in the United States to at least one immigrant parent (Taylor, 2013). These individuals generally perceive their standard of living to surpass that of their parents at the same stage of life. This evolution of immigration patterns in the U.S. presents a complex landscape with profound implications for social dynamics, policy making, and future research.

## **Why are they important?**

Despite being a rapidly growing demographic group predicted to overtake Hispanic Americans as the largest ethnic group in the United States by 2065 (Noe-Bustamante, 2020), Asian Americans, particularly those of the second generation, receive relatively little attention. These individuals often face numerous challenges in their developmental experiences, such as assimilation, acculturation, and identity crises, which are particularly prominent among Asian Americans (Tian, 2023).

Moreover, it is essential to note that Asian adults born and raised in the U.S. are more likely to encounter discriminatory incidents than those who immigrated as adults. Approximately nine out of ten Asian Americans have reportedly experienced at least one of the 17 identified discrimination incidents. The most common incidents include strangers mispronouncing their names and presuming they excel at mathematics and science.

Given the increasing population of second-generation Asian Americans and the wealth of

untold stories within this community, it is imperative for researchers and policy-makers to pay more attention to their experiences and challenges. The insights gained from such focus could significantly contribute to a more inclusive and equitable society (Noe-Bustamante, 2020; Tian, 2023).

## **Personal Connections**

In 2023, I commenced my studies in New York, a city renowned for its pursuit of excellence and its diverse populace. During my time in this vibrant city, I was privileged to encounter numerous second-generation Asian Americans, including those from Taiwan, China, Thailand, Japan, the Philippines, and India. Through our interactions, we often discussed their childhood experiences, touching on language acquisition, identity formation, and familial relationships, among other topics.

This backdrop facilitated my encounter with the series 'Past Lives' during a 2024 flight back to the United States after the winter break. The series' metaphors about second-generation immigrants, who are perpetually seen as foreigners, deeply moved me. In both the lands of their birth and their parents' origin, they are seen as outsiders. This sentiment was echoed in 'Stay True: A Memoir,' a memoir penned by Taiwanese American Hsu Hua. Hsu skillfully uses a combination of both traumatic and beautiful memories from his upbringing to construct a sense of self. These memories are evoked through objects and people from his past, sketching a vivid picture of his emotions and growing pains.

Second-generation Asian immigrants, it appears, may have to exert greater effort in defining themselves. Consequently, I have resolved to delineate their narratives through this research and its associated data visualization project. This endeavor will enable a more profound understanding of their experiences, challenges, and unique perspectives.

## Problem Awareness

- Second-generation Asian Americans have distinct shared and collective memories influenced by their unique cultural backgrounds.
- The childhood memories of second-generation Asian Americans often include common traumatic experiences that significantly shape their identity.
- Certain literary and artistic works resonate deeply with second-generation Asian Americans, providing unique insights into their experiences and sentiments.
- Bilingual upbringing environments significantly impact the developmental journey of second-generation Asian Americans, influencing their identity formation and cultural understanding.

## Methodology

The methodology of this research is a comprehensive blend of qualitative and quantitative approaches, grounded in a multidisciplinary perspective. This research employs a 40% qualitative method, which includes a literature review to contextualize the background, methods, and techniques relevant to the study. It also incorporates in-depth interviews and secondary data (including book contents, reviews, interviews, transcripts, and blog posts) to establish a dataset featuring collective memories of second-generation Asian Americans.

The qualitative aspect of the study is complemented by a 30% quantitative approach. This approach includes collecting census data, conducting emotional recognition machine learning testing, and applying generative AI. These methods allow us to analyze large datasets and identify patterns, trends, and correlations that might otherwise be overlooked.

Finally, data visualization constitutes the remaining 30% of the research method. This process involves presenting the qualitative and quantitative data in a visually engaging format, which facilitates a better understanding of the research findings. The output/product features functions that allow the visualization of both quantitative statistics and qualitative data. The qualitative data will be categorized according to emotions, life stages, key items (metaphors), and key concepts retrieved from machine learning and generative AI applications.

The goal of this research is to create a webpage that narrates the stories and memory fragments of second-generation Asian Americans. This will be achieved by using items,

emotions, and keywords as vessels to convey their experiences. The findings presented on this platform aim to provide a deeper understanding of the experiences and challenges faced by second-generation Asian Americans, thereby contributing to a more inclusive and equitable society (Noe-Bustamante, 2020; Tian, 2023).

## Stay True

"There were aspects of their lives that felt familiar. Their parents were busy working as many jobs as they could, and whatever connection they maintained to the past had more to do with household tradition than politics. Words like "genocide" and "trauma" were forbidden."

"To me, Asian American was a messy, arbitrary category, but one that was produced by a collective struggle. It was a category capacious enough for all of our hopes and energies"

Hua Hsu

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# Treatment

## literature Review

### Terminology

This research focuses on the experiences of second-generation Asian Americans, a term used to describe individuals born in the United States to at least one immigrant parent (Taylor, 2013). The clarification of relevant terminology is crucial given the expansive research areas encompassed by immigration, which include diplomacy, politics, and social and anthropological perspectives.

The primary focus of this study is on second-generation Asian Americans, a demographic substantially affected by the Immigration and Naturalization Act of 1965. This Act fundamentally altered the demographics of the immigrant community in the United States (Noe-Bustamante, 2020). Representing the subjects of this study are individuals who have been born and raised within the United States who have undergone their primary stages of education within the country (Lui, 2015).

### Asian American

The pan-ethnic term "Asian American" describes the population of about 22 million people living in the United States who trace their roots to more than 20 countries in East

and Southeast Asia and the Indian subcontinent. The term was popularized by U.S. student activists in the 1960s and was eventually adopted by the U.S. Census Bureau. However, the “Asian” label masks the diverse demographics and wide economic disparities across the largest national origin groups (such as Chinese, Indian, Filipino) and the less populous ones (such as Bhutanese, Hmong and Nepalese) living in America. It also hides the varied circumstances of groups immigrated to the U.S. and how they started their lives there. The population’s diversity often presents challenges. Conventional survey methods typically reflect the voices of larger groups without fully capturing the broad range of views, attitudes, life starting points and perspectives experienced by Asian Americans. They can also limit understanding of the shared experiences across this diverse population(Shah, 2022).

## **Immigrant**

Immigrant refers to people who were not U.S. citizens at birth – in other words, those born outside the U.S., Puerto Rico or other U.S. territories to parents who were not U.S. citizens. The terms “immigrant,” “first generation” and “foreign born” are used interchangeably in this thesis (Shah, 2022).

## **The Third Generation**

It is worth noting that identity issues tend to emerge more prominently between first and second-generation immigrants. Higher generation immigrants are often referred to collectively as third-generation immigrants for classification purposes in demographic research. By definition, the second generation refers to individuals with a foreign-born mother or father, while the third generation refers to individuals with two U.S.-born parents (Camarota, 2022).

## **The 1.5 Generation**

The term "1.5 generation" is used to describe immigrants who arrived in the U.S. as children or adolescents (Dizon et al., 2021). These individuals, unlike their first-generation parents or U.S.-born siblings, have a split identity. They are American in many ways, sometimes mostly, yet not entirely. Although less frequently utilized, this term holds potential for confusion with other demographic labels, thus necessitating careful differentiation (Kim et al., 2003).

## **Third-culture Kids (TCKs)**

Lastly, the term "third-culture kids" (TCKs) warrants discussion. TCKs are raised between two cultures, culminating in a third, merged culture. These individuals share an experience that binds them together, transcending ethnicity or nationality. They possess a culture of their own, no longer characterized as outsiders. Various terms are used to describe TCKs, such as "third culture children" (TCKs), "adult third culture children" (A-TCKs), "cross-cultural kids" (CCKs), and "global nomads" (GNs) (Espinetti, 2011). From these definitions, it becomes clear that being a second-generation immigrant often correlates with being a TCK. However, not all TCKs are second-generation immigrants. In essence, while they possess cross-cultural characteristics, public perception often associates them with the children of diplomats or military personnel, who grow up overseas and experience cultural shock upon returning to their home country (usually the U.S.)(Crossman, 2019). Therefore, this differs slightly from the immigrant culture that this research aims to investigate.

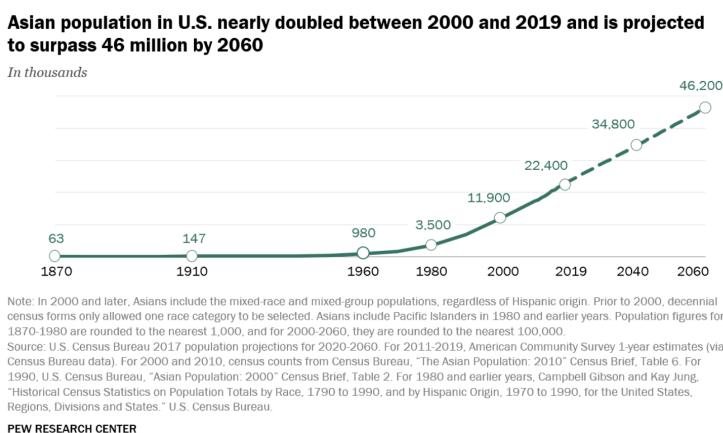
## **Conclusion**

From various immigration-related terms, it can be seen that all kinds of "immigration" will be a transitional state into society. Before becoming a local from a foreigner, society will need some time to accept and find their own position. Through such combing, we can also slightly understand that for these immigrants, their growth process reflects their need to integrate into a society with its core group over several generations because of their intention and behavior of moving, differential assimilation, and root-seeking. This is precisely the state in the process of social change that this study wants to capture.

In a nutshell, I hope to capture the various memories of second-generation Asian Americans in the process of growth through this research and visualization work. Through these memories, not only reflect their methods of integrating into society, but also hope to capture their common childhood memories and emotions. In the next section, through various research reports and data, their images in population data and think tank research will be depicted first.

# About Second-generation Asian Americans

## Populations

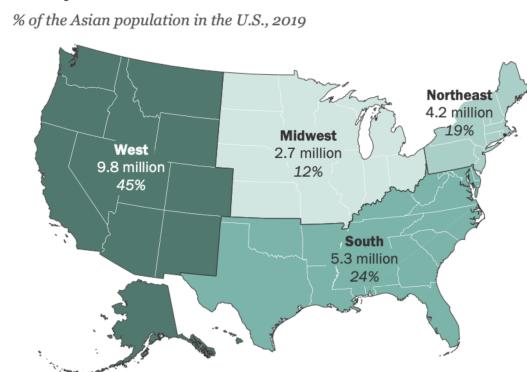


(Budiman & Ruiz, 2021).

The transformation of the immigrant population in the United States has been significant since the 1960s. As per the 2018 data, the country hosted a record 44.8 million immigrants, constituting 13.7% of the total population (Noe-Bustamante, 2020). Of these, approximately 22 million were Asian immigrants

The demographic landscape of the United States is projected to continue its shift. According to Budiman and Ruiz (2021), the Asian population in the U.S. is predicted to reach 46 million by 2060. This represents a remarkable demographic shift within a century, positioning Asian Americans as the largest immigrant group. However, it is essential to recognize that the Asian American population is not homogeneous. Each Asian subgroup has a distinct culture, language, and historical context.

### Nearly half of all Asian Americans live in the West



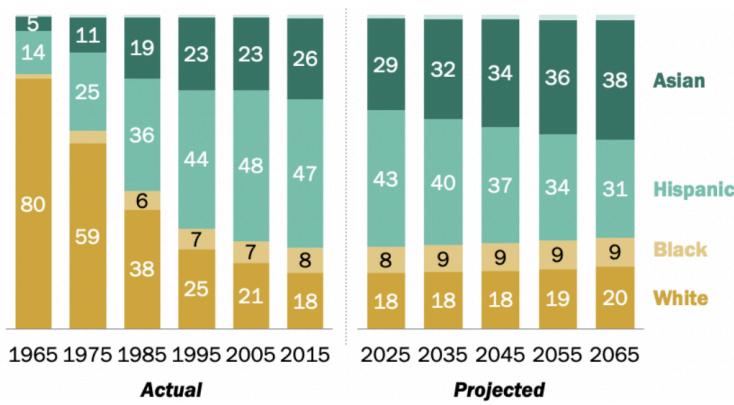
Indeed, the Asian American population is incredibly diverse, with roots tracing back to over 20 countries in East and Southeast Asia and the Indian subcontinent. Chinese Americans comprise the largest Asian origin group in the U.S., constituting 24% of the Asian population. Indian Americans and Filipinos follow, accounting for 21% and 19% of the total, respectively (Budiman & Ruiz, 2021).

This influx of Asian immigrants has significantly altered the demographics of the immigrant community in the United States, a transformation largely attributed to the Immigration and Naturalization Act of 1965. Notably, the annual influx of Asian immigrants has outpaced that of Hispanic immigrants since 2010 (Noe-Bustamante, 2020).

As of 2012, second-generation Asian Americans accounted for approximately 12% of all second-generation immigrants, equating to at least 3 - 5 million individuals. However, given the population's growth rate, the current figure is likely significantly higher (Zhou & Xiong, 2005, Taylor, 2013).

### **Asians projected to become the largest immigrant group in the U.S., surpassing Hispanics**

*% of immigrant population*



Note: White, Black and Asian populations include those who report being only one race and are not Hispanic. Asians include Pacific Islanders. Hispanics are of any race. Other races shown but not labeled.

Source: Pew Research Center estimates for 1965-2015 based on adjusted census data; Pew Research Center projections for 2025-2065.

## **The Growth Dilemma of Asian Americans**

### **Assimilation & Acculturation Issue**

In the field of cross-cultural psychology, a crucial connection has been identified between cultural context and individual behavioral development (Berry, 1997). This connection is particularly significant when examining the experiences of second-generation Asian immigrants in the United States, where they must often navigate the contrast between the collectivism inherent in their traditional Asian heritage and the individualism prevalent in mainstream American culture (Lui, 2015).

Berry (1997) posits that the long-term psychological consequences of this acculturation process can vary greatly and are dependent on social and personal variables. Moreover, Berry argues that acculturation and adaptation can be studied within a conceptual framework, which can inform public policy and program decisions. This perspective emphasizes the importance of considering the costs and benefits of adopting a pluralist and integrationist orientation towards immigration and acculturation.

Lui (2015) further explores the challenges faced by immigrant Asian and Latino groups in their family relationships, which are often influenced by the stark contrast between their traditional collectivist heritage and the individualist mainstream American culture. Lui identifies a concept known as 'Acculturation Mismatch' (AM), which correlates with intergenerational cultural conflict (ICC), particularly prevalent among second-generation Asian immigrants. Lui's study found that ICC correlates with negative outcomes in offspring's mental health and educational achievements. This relationship, however, was found to be stronger among young adult groups within immigrant families compared to adolescent groups.

Additionally, Lui (2015) found that AM is more closely related to ICC among women and second-generation immigrant offspring and is more problematic among low-risk offspring living in less ethnically diverse regions. This research, while significant in its findings, does present limitations, such as a lack of studies on educational outcomes and relative underrepresentation of Latino/a samples compared to Asian American samples. These limitations highlight the need for future research in these areas and have implications for intervention strategies (Lui, 2015).

In conclusion, understanding the experiences of second-generation Asian immigrants requires a nuanced approach that accounts for the cultural, social, and personal variables that influence their assimilation and acculturation process. Future research in this area

could greatly contribute to the development of more inclusive and effective policies and programs designed to support this growing demographic group.

## **Discrimination**

According to Tian (2023), Asian Americans who were born and raised in the U.S. are more susceptible to discrimination incidents than those who immigrated as adults. The study reveals that approximately 90% of Asian Americans have personally encountered at least one of the 17 surveyed discrimination incidents. Two of the most prevalent incidents comprise strangers mispronouncing their names and assuming they excel in math and science.

Moreover, the study discloses that about half of Asian adults have experienced four or more discrimination incidents. Notably, 58% of Asian adults have endured racial discrimination or unfair treatment based on their race or ethnicity. The situation appears more severe for second-generation Asian adults, with 37% having been told to go back to their home country, compared to 26% of first-generation Asian adults.

The notion of panethnicity among Asian Americans was initially conceptualized to unify ethnic groups and represent their sociopolitical interests. However, contemporary scholars have raised skepticism about whether panethnicity accurately reflects the diverse experiences and identities of different ethnic groups.

In mainstream culture, the term "Asian American" has increasingly become synonymous with affluent East Asian Americans, thereby eclipsing the realities of working-class, South, and Southeast Asian Americans (SEAAAs). Yamashita (2022) underscores the unique historical relationships with the United States that differentially impact the racial identities and attachments to panethnicity of these ethnic groups.

Through a series of interviews with Southeast Asian refugees and service providers in North Carolina, Yamashita (2022) explores a term coined as "quiet neglect." This term describes the U.S.'s institutionalized silence around the Vietnam and Secret Wars, leading to the erasure of SEAAAs' needs and shaping their connections to Asian American panethnicity. The study also delves into their decision to align with alternative identities.

The findings of these studies underscore the importance of recognizing individuals' agency to challenge racial boundaries and assert identities that they find meaningful. In addition, they offer insights into how SEAAAs situate themselves within our broader racial structure and utilize their identities to connect with other people of color.

## **Language and Identity**

Batalova's (2023) comprehensive analysis of the U.S. immigrant population offers an insightful examination of its demographic, educational, and linguistic characteristics. Her research reveals that 46% (20.8 million) of the 45 million immigrants aged 5 and above in 2021 were Limited English Proficient (LEP). This demographic constituted 80% of the country's 25.9 million LEP individuals. This data is essential for understanding the linguistic hurdles faced by the immigrant population, which can significantly impact their assimilation and acculturation process.

Shah's (2022) study, on the other hand, divulges a fascinating exploration of Asian American identity. Participants in Shah's research articulated their struggle with their dual identity, particularly in reconciling the individualistic "American mentality" with their Asian heritage. An interesting observation from the study is that many participants preferred not to be identified as "Asian," seeking to differentiate themselves from other Asian groups.

The term "American" was often associated with immigration status or citizenship, with U.S. citizenship considered a critical milestone, imbuing participants with a stronger sense of belonging. However, some participants held the view that only those born and raised in the U.S. could truly consider themselves American.

Participants also discussed the challenges of the "model minority myth" and the stereotype of Asians as intelligent and hardworking. This stereotype often leads to the perception of Asians as "forever foreigners," fostering ignorance and misinformation that can result in inappropriate comments, questions, and potentially uncomfortable or dangerous situations.

These insights from Batalova (2023) and Shah (2022) significantly contribute to our understanding of the experiences and challenges faced by second-generation Asian Americans, thereby informing policy and practice in this area.

However, more research is needed to further investigate the distinct experiences of different Asian ethnic groups and the impact of their unique cultural backgrounds on their assimilation and acculturation process. Future research should also examine the experiences of immigrants from less represented Asian countries to provide a more comprehensive understanding of the Asian American immigrant population.

Overall, the emerging body of research on Asian American immigrants underscores the importance of adopting a nuanced approach that takes into consideration the diverse experiences and identities of this population. Such an approach can significantly contribute to the development of more inclusive and equitable policies and programs designed to support the growing Asian American immigrant population in the U.S.

## **Conclusion**

The issues of assimilation and acculturation among second-generation Asian immigrants in the U.S. are interlinked with cultural context and individual behavioral development. The contrast between collective Asian heritage and individualistic American culture often leads to long-term psychological consequences. Berry (1997) suggested studying acculturation within a framework that informs public policy and program decisions. Lui (2015) further discussed the concept of 'Acculturation Mismatch' correlating with intergenerational cultural conflict, particularly among second-generation Asian immigrants. Additionally, second-generation Asian Americans face discrimination, with 37% being told to go back to their home country. The experiences of these individuals vary greatly, as the term "Asian American" encompasses a diverse range of people from different Asian countries. Language and identity also play a significant role in the experiences of second-generation Asian immigrants. A large portion of immigrants is Limited English Proficient, and many second-generation Asian Americans struggle with their dual identity. The findings highlight the complexities faced by second-generation Asian immigrants and emphasize the need for more research and inclusive policies. "Recently, several films, TV shows, and memoirs have discussed family relationships, childhood experiences, and issues related to school and work. It seems like collective nostalgia is becoming a developing research field."

## **Life Stages Theory**

Our understanding of human development has been significantly informed by a variety of scholarly works. A crucial piece in this discourse is Greene et al.'s (1992) seminal study, which provides a vital framework for examining life's stages. This framework broadly classifies life into the following stages: infancy, early childhood, middle childhood, adolescence, young adulthood, middle adulthood, and older adulthood. Given the focus of the present research on the retrospective exploration of growth trajectories, this classification serves as an appropriate structure for our investigation.

Another noteworthy contribution to the field of human development is the work of Erik Erikson, an American-German psychologist renowned for his research on ego psychology. Erikson's theory of psychosocial development, as explicated by Elizabeth (2022), is centered on the role of social interactions in shaping personality. This theory posits that individuals undergo a series of conflicts at each life stage, which act as turning points in their psychological development. These conflicts, in effect, facilitate the individual's transition into the subsequent life stage.

Erikson's theory outlines eight distinct life stages: infancy, toddlerhood, preschool years, early school years, adolescence, young adulthood, middle adulthood, and late adulthood. Each stage is characterized by a specific psychosocial conflict that needs to be resolved for successful progression to the next stage.

In the context of our research, these theories provide a valuable lens through which to examine the experiences and challenges encountered by second-generation Asian Americans. By adopting these frameworks, we can gain a more nuanced understanding of the developmental trajectories of these individuals, considering the distinct cultural, social, and personal variables that shape their assimilation and acculturation processes. This approach, in turn, can contribute to the development of more inclusive and effective policies and programs designed to support this growing demographic group.

## **Conclusion**

Upon examining the aforementioned descriptions of second-generation Asian Americans, it is apparent that the median age falls under thirty. In accordance with this demographic information, the focus of this study will be primarily on life experiences spanning from toddlerhood to young adulthood, with particular emphasis on adolescence. These developmental stages are crucial in the formation of identity and the assimilation of cultural norms, and therefore, they offer valuable insights into the lived experiences of

second-generation Asian Americans. This understanding will be instrumental in furthering the discourse on immigration, identity, and acculturation within the United States.

## **Qualitative Research Method**

In the pursuit of understanding the collective experiences of second-generation Asian Americans, this research aims to challenge the potential of visualizing qualitative data. Our approach stems from the essence of qualitative research methods, exploring the possibilities of appropriate metaphors, classifications, and how personal narratives can be best incorporated into an engaging interpretation. This preparation phase is crucial for the impending research.

Our research methodology is grounded in the spirit of qualitative research methods, which includes in-depth interviews and the elucidation of life stories of individuals. We also aim to abstract these individual experiences into categorical concepts. Stake (2010) suggests that case study methods encompass naturalistic, holistic, ethnographic, phenomenological, and biographical research methods. This research will utilize these methods to maximize learning and understanding.

The qualitative approach to this research is informed by a hermeneutic phenomenological foundation, which is well-suited for the collective case study method. Hermeneutic phenomenology synthesizes the description, understanding, and interpretation of a phenomenon and human experience, combining ontological and epistemological perspectives. As Yin (1993) and Stake (2010) explained, "case studies are multi-perspectival analyses. They give voice to the powerless and voiceless".

One of the challenges of hermeneutics, as Short (1991) emphasizes, is determining the best interpretation. Hermeneutics is about creating meaning, not merely reporting it. It includes the study of understanding, interpretation of meaning, the study of how context shapes interpretation, and the study of the transfer and interpretation of knowledge. Phenomenology, on the other hand, seeks to make the invisible visible.

## **Conclusion**

The objective of this research is to construct a comprehensive database encapsulating the collective memories of second-generation Asian immigrants. This endeavor will employ hermeneutic phenomenological methodologies, gathering narratives from primary interviews, secondary sources such as book excerpts and visual media text, and other relevant sources. The ultimate aim is to create a multi-faceted portrayal of their collective experiences. Recurrent themes in their narratives, metaphors derived from their life experiences, and common references to objects and individuals from their

upbringing will serve as the threads weaving this rich tapestry. Their shared memories and emotions will inform and shape this research.

## **Emotion Recognition Labeling**

### **Comparison of Sentiment Analysis and Emotion Recognition**

The intersection of social science and data science presents a robust platform for studying the dynamics of societal narratives. As American author Kurt Vonnegut proposed, narratives have discernible structures, akin to the design of pottery or weapon heads, which can offer profound insights into a society's fabric (Vonnegut, 1947).

Building on Vonnegut's hypothesis, Reagan and colleagues (2016) posited that cultural evolution could be scrutinized through the lens of its texts - an analysis made feasible by advancements in computational power, natural language processing, and text digitization. This approach brings into focus the utility of sentiment analysis and emotion recognition techniques in understanding emotional arcs in narratives.

Sentiment analysis, a subset of natural language processing, classifies opinions into positive, neutral, or negative categories. However, it is somewhat limited in its scope, providing a broad sentiment spectrum rather than specific emotional nuances (Lu, 2022). In contrast, emotion recognition, an offshoot of sentiment analysis, offers a more granular understanding of emotions. It provides scores for specific emotions—like joy, anger, frustration, or boredom—and their intensity, adding depth to the sentiment analysis (France, 2021).

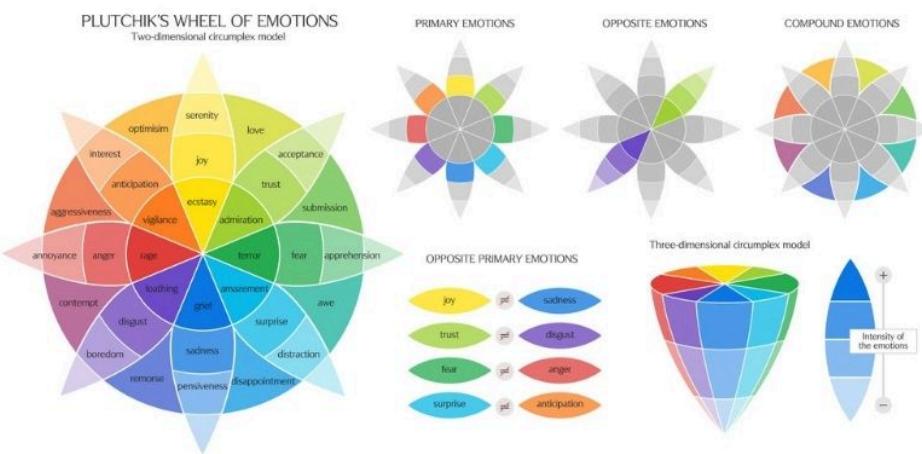
This differentiation between sentiment analysis and emotion recognition is of paramount importance. It elucidates the progression from a broad classification of sentiments—whether positive, neutral, or negative—to a more detailed understanding of specific emotions. Emotion recognition, thus, allows us to delve deeper into the complexities of human experiences.

In the context of studying the experiences and challenges of second-generation Asian Americans, the integration of these techniques could offer valuable insights. By examining their narratives through the lens of emotion recognition, we can identify the emotional arcs underlying their experiences, thereby contributing to a more comprehensive understanding of this demographic group.

In conclusion, the convergence of data science and social science offers a robust platform for understanding societal narratives in a nuanced manner. The advent of emotion recognition, an advancement from sentiment analysis, allows for a more detailed exploration of specific emotions, thereby enriching our understanding of the experiences of second-generation Asian Americans.

## Categorizing Emotions

In order to understand and classify human emotions, a variety of labels or terms are often employed, such as 'happy,' 'sad,' 'angry,' and 'surprise.' While these terms are commonly used, it's important to note that there is no official consensus within the field of psychoanalysis on how to organize and define human emotions (Gu et al., 2019).



In the realm of machine learning, scientists often adopt schemas based on the work of renowned researchers such as Plutchik, Ekman, Parrot, and Tomkins. Plutchik's model is a popular choice among data scientists interested in classifying emotions. He proposed eight primary emotions: anger, fear, sadness, disgust, surprise, anticipation, trust, and joy. These emotions were assigned specific colors and placed on a color wheel. The use of colors serves to highlight both the dichotomy of emotions and the intensity of feelings within the three-dimensional 'flower cones' of the model (Plutchik, 2001).

By utilizing Plutchik's model, this study aims to provide a comprehensive and nuanced categorization of emotions, contributing to our understanding of the emotional experiences of our research subjects.

## **Nostalgia Emotion as a New Trend in Computer Science Field**

In the realm of emotional detection, recent attempts have emerged to explore novel emotional states, with nostalgia being the most notable and relevant to this study. Humans, as reflective, adaptive, and social beings, often recall the past and engage in discussions about these recollections, leading to feelings of nostalgia. Despite this, previous research has largely overlooked the presence and impact of nostalgia in social media (Davalos et al., 2015).

Nostalgic posts tend to be more reflective and emotional, frequently encompassing both positive and negative emotions. This aligns with the deeper, bittersweet nature of nostalgia. The simultaneous use of past and present-tense words in nostalgic posts suggests that nostalgia aids in interpreting and navigating present circumstances (Davalos et al., 2015).

Arar (2018) describes nostalgia as an installation that highlights the computational challenges of understanding human emotion. He argues that while computers can now distinguish simple emotions such as joy, sadness, fear, anger, and disgust based on human input, numerous indeterminate emotions exist that humans alone cannot define to one another, let alone to a computer.

Given the current relevance and emotional resonance of nostalgia, it has motivated the design of this installation to reflect on the 'wabi-sabi' nature of the human spirit juxtaposed with the exactness of computational realizations (Arar, 2018). Nostalgia is most often associated with an individual's memories related to the past, and the tendency to engage in nostalgic feelings fluctuates over the course of an individual's lifetime.

From a computational standpoint, translating dynamic human qualitative phenomena into quantitative data by focusing solely on written text removes much of the context that we rely on as social cues. Through participant actions in the form of storytelling, the algorithmic system converts the qualitative effect of nostalgia to a quantitative digital and physical aesthetic representation (Arar, 2018).

Thus, the integration of nostalgia in our computational models and understanding of human emotions brings to light the complexity of emotions and their interpretation. As technology continues to interweave with our daily lives, capturing more of our lived experiences, the concept of the "quantified self" or lifelogging becomes a reality, and not just a science fiction concept (Arar, 2018).

This examination of nostalgia as a new trend in research fields opens up new avenues for understanding complex human emotions and their representation in computational models. Future research could greatly contribute to the development of more holistic and effective methods for emotional detection and representation.

## **Emotions Recognition Models Development**

In the realm of emotion recognition, a field pioneered by Rosalind Picard in the mid-1990s through her work on "affective computing," a range of techniques have been employed. These include the recognition of emotions through faces, images, speech, videos, sounds, and text (Batbaatar, 2019). Of these, text recognition has gained significant importance due to the vast amount of textual data available on the web, such as blogs, tweets, forums, and comment sections. Despite the existence of these concepts for several decades, the area of emotion detection, particularly text-based input, has received limited scholarly attention.

Emotion detection, however, holds substantial potential for understanding sentiments in a detailed manner. Lu (2022) suggests that emotion detection can significantly enhance applications like calendars, emails, and social networking. For instance, discerning the emotional tone of a meeting invite or email can psychologically prepare the receiver for the upcoming interaction.

Moreover, the visualization of emotion detection output can serve as a guide to understand how we perceive and experience narratives, both within written works and in broader human experiences. This technique could prove especially valuable in comprehending the complexities and nuances of second-generation Asian immigrants' experiences, as this research aims to explore.

This research will employ several methods for emotion recognition from the collected data. Each method has its unique characteristics, limitations, and evolution.

1. **Keyword-based Approach:** This method identifies occurrences of keywords in a given text and assigns an emotion label based on the detected keyword. The process involves preprocessing the dataset, spotting and matching keywords, weighting the intensity of the emotion, and finally labeling emotions. However, this approach is subject to bias as it requires the researcher to manually identify a list of words. Despite its limitations, the keyword-based approach can be somewhat successful, although there have been instances of significant levels of mislabeled emotions.

2. **Lexical-based Approach:** This approach builds upon the keyword technique. In addition to spotting and matching keywords, it assigns a probabilistic affinity for a particular emotion to arbitrary words. Like the keyword-based approach, it has a low barrier of entry for technical knowledge but requires manual setup. There's also the potential for misattributing emotional assessment to a word.
3. **Learning Approach:** This technique attempts to classify processed input with an emotion label using machine learning models. A common approach is to use SVM (Support Vector Machines), a supervised learning model used for classification. The model analyzes data for classification and works by creating examples as points in space. Other machine learning techniques for emotion detection classification include the use of k-Nearest Neighbor, Naive Bayes classifier, Maximum Entropy, and statistical methods, such as Chi-Square.
4. **Deep Learning Approach:** Deep learning programs learn and understand input from concepts and their relations to other concepts. They are capable of learning complicated systems by basing the learning on simpler established systems. Techniques used for emotion detection from text include Singular Value Decomposition (SVD), which is a technique for decomposing matrices into smaller chunks, and Long Short-Term Memory (LSTM), which derives the hidden state of each word to gather contextual and semantic information.

In conclusion, the limitations in current research and methodologies should be carefully considered. Arar (2018) argues that specific linguistic aspects, including negation and mixed-affect sentences—particularly those that shift from positive to negative sentiments—can significantly influence sentiment analysis and therefore require thorough consideration. Furthermore, Batbaatar et al. (2019) emphasize that many machine learning methods applied in emotion recognition overly depend on handcrafted features, necessitating extensive manual design and adjustments. These observations underscore the need for developing more refined and automated strategies that can more accurately capture the range of human emotions in qualitative data analysis.

## The Emerging Trend of Generative AI in Emotion Recognition

Advancements in machine learning have paved the way for the application of generative AI in emotion recognition, offering promising possibilities for social science research.

However, the transition from supervised to unsupervised learning, and the rapid development of generative AI, such as those seen in Open AI and Vertex AI, bring both opportunities and challenges (Arar, 2018).

Traditional sentiment analysis methods, typically rule-based or statistical, provided valuable insights but struggled to capture the nuances of language, context, and sarcasm. In contrast, generative AI holds the potential to enhance emotion recognition in several key ways (Saha, 2023).

1. **Nuanced Insights:** Generative AI can identify not just the sentiment but also the intensity and nuances of emotions in text. It can recognize subtle changes in sentiment that may be missed by traditional methods.
2. **Handling Sarcasm and Irony:** Understanding sarcasm and irony has been a longstanding challenge in sentiment analysis. Generative AI models are better equipped to recognize and decode such linguistic nuances, leading to more accurate sentiment assessments.

As the field of generative AI continues to rapidly evolve, it is crucial for social science researchers to understand and leverage its potential, while also acknowledging and addressing its limitations. This approach will enable a more nuanced and accurate understanding of emotions within textual data, offering profound implications for fields like immigration studies, where the exploration of emotions and sentiments is integral to understanding individual and collective experiences.

## Conclusion

Emotions serve as a critical element, connecting us to a story. However, they also come with numerous limitations. With the rapid development of deep learning techniques and generative AI, we've seen new opportunities for recognizing emotions more efficiently and accurately. This technology allows us to unearth more subtle emotions, such as nostalgia and sarcasm.

Conversely, this technological advancement makes it challenging to unveil the 'black box.' In subsequent research chapters, we will delve into the process of choosing and

experimenting with supervised machine learning models, lexicons, Natural Language Processing (NLP), deep learning, and generative AI.

A swift conclusion would argue that these tools have significantly assisted in constructing the database. Simultaneously, it necessitates my active participation in the model training process, from setting model parameters to providing more accurate prompts and structures for the model to capture emotions accurately.

Arar (2018) states, "This gap in understanding is largely due to the complexity and dynamism of human consciousness" (p.1). This statement underscores the intricacies involved in comprehending human emotions, indicating that quantitative analysis alone may not suffice.

Nonetheless, it's crucial to emphasize that emotions are merely one way of resonating with a story. They serve as supplementary information, as the same text may not necessarily provoke the same emotional interpretation across different individuals. Therefore, the focal point should be on how we connect emotions with stories, rather than dwelling on the precision of emotional analysis.

## Data Visualization Case Study

In this section, I will discuss various examples of data visualization and explore why I wish to design my website using these forms and graphics. This will be introduced in two parts: Visualizing Qualitative Data and Scrollytelling.

### Visualizing Qualitative Data

Since my topic aims to visualize memory texts and utilizes large language models to analyze the main emotions of each data point, I will face several challenges. The first is to ensure harmony and readability in the application of a large number of colors on the screen, as well as maintaining a certain level of interactivity.

Several cases have given me some basic graphic design inspirations. The earliest concept of emotion analysis visualization came from the literacy Book Bindings project by Tiffany France<sup>1</sup>, which helped me understand that the translation of imaged emotions through good color translation and design can create connections with people. I find this a fascinating form of visualization.

Additionally, the DarkOwl's Map the Dark project<sup>2</sup> and Nadieh Bremer "Why Do Cats and Dogs...?" project<sup>3</sup> have given me some basic graphic inspirations for text visualization. I can use the form of bubbles to carry different forms of memories. As long as I can code each data point, I can increase interactivity. This ultimately led me to decide on using d3.js circle packing for my project design.

Finally, the MIT Latent Lab<sup>4</sup>'s application of large language models for movie text analysis has shown me the potential for real-time computation of large language models and graphic rendering. Although this design will not adopt real-time computation of language models, it also provides some visual inspiration, such as using contour design to represent data cluster density.

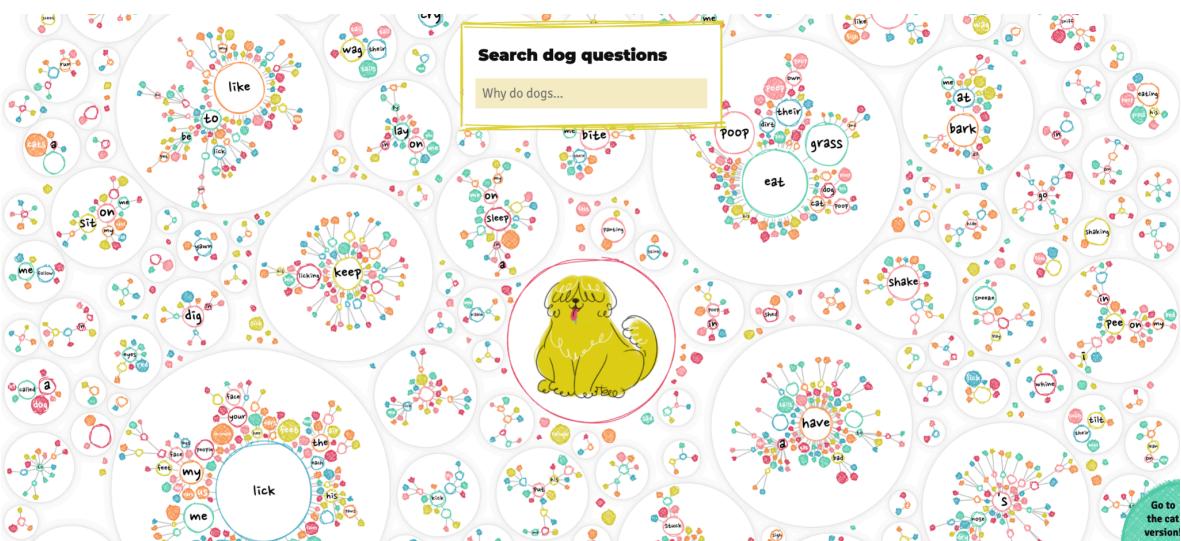
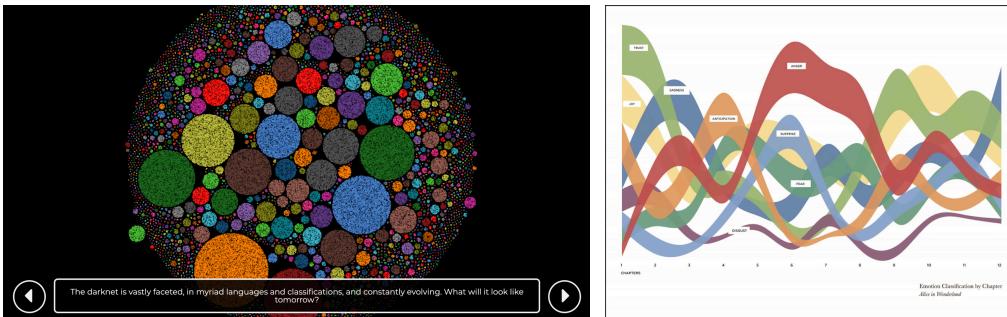
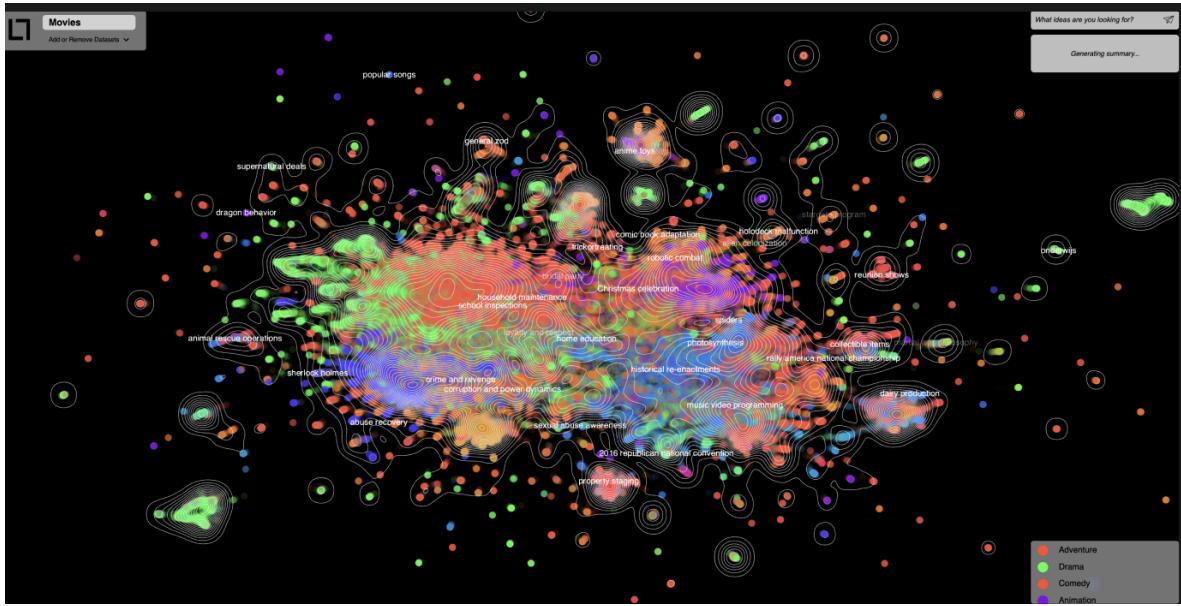
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<sup>1</sup> "Machine-Driven Literary Book Covers." Accessed May 12, 2024. <https://tiffanyfrance.com/ml-books/>.

<sup>2</sup> Map the Dark | DarkOwl. "Map the Dark - Interactive Darknet Data Visualization | DarkOwl." Accessed May 12, 2024. <https://mapthedark.com>.

<sup>3</sup> Bremer, Nadieh. "Why Do Cats and Dogs ...?" Visual Cinnamon. Accessed May 12, 2024. <https://www.visualcinnamon.com/portfolio/why-do-cats-and-dogs/>.

<sup>4</sup> "Movies - Latent Lab." Accessed May 12, 2024. <https://www.latentlab.ai/movie>.



## Scrollytelling

Given the unique temporal and spatial context of the second-generation Asian Americans discussed in my project, I deemed it necessary to develop a historical timeline section. This would help the audience understand my approach to this particular period from 1965, when new immigration regulations were signed, to the present day. Therefore, I knew I needed to find a narrative method that could combine both quantitative and qualitative data.

From Janice Yamanaka-Lew's 'Swamp Walk' project<sup>5</sup>, I gleaned a method that used a timeline as an anchor and incorporated various multimedia elements to enhance immersion. Additionally, in Isabella Chua's project<sup>6</sup>, 'Asian representation in movies: have things changed since 1997?', a combination of quantitative graphics and narrative was used. This graphic provided the foundation for my design.



<sup>5</sup> "Swamp-Walk." Accessed May 12, 2024. <https://parsons.nyc/thesis-2020/janiceYamanakaLew/index.html>.

<sup>6</sup> Kontinentalist. "Asian Representation in Movies: Have Things Changed since 1997?" Accessed May 12, 2024. <https://kontinentalist.com/stories/asian-representation-in-movies-have-things-changed-since-1997>.

# Data Processing and Design

In this thesis, the research process comprises three main parts, including data collection, data processing, and data interpretation and visualization. The details of each step are provided as follows:

## Data Collection

This section comprises the literature review and the establishment of the memory database.

The [Literature Review](#) section starts by highlighting the group of interest, discussing their importance and growth narratives as revealed in various research institutions and academic papers. This sets the initial background research and investigation for this study. Simultaneously, it presents the value-based research methods I employ, aiming to collect stories of second-generation Asian children through a qualitative research method with a Hermeneutic approach. Although emotional analysis recognition is a crucial technical aspect of the thesis, it's not the main focus. Nevertheless, some space is devoted to discussing its evolution, limitations, current trends, and how this research will apply these trends.

The [Self-established Database](#) section involves extracting memory stories from the selected text data that relate to my research theme. Generally, this process involves abstracting a specific childhood experience. For instance, "WHEN MY FATHER MOVED to Taiwan, my family bought a pair of fax machines. In theory, this was so he could help me with my math homework. I was starting high school, where everything, from what instrument I played to the well-roundedness of my transcript, suddenly seemed consequential." (Hsu, 2022). From this passage, we can infer items such as fax machines that might have a crucial meaning in his memory. Simultaneously, I interview second-generation Asians around me, asking them to share their childhood memories, including family, identity, and significant life stages and experiences.

In this database-building process, we gradually identify key themes, key people in memories, items, and scenarios that can be used to train models in the subsequent data processing stage. The transcripts of the subjects interviewed in this study (made public after consent) and the referred text data will be included in the appendices at the end of the thesis for reference.

## **Data Processing**

In the data processing stage of memory analysis, I used both manual processing and machine learning for autonomous theme identification in memory fragments.

In the initial database construction, my judgment was crucial in data labeling, ensuring accurate identification and classification into three categories: key items, abstract concepts, and primary emotion recognition.

Key items are tangible elements like objects and situations. Abstract concepts are intangible like identity crises, and primary emotion recognition is based on Plutchik's categories and refined with new emotion recognition trends.

I meticulously classified data across life stages according to Erik Erikson's psychosocial development theory, to understand second-generation Asians' life experiences.

Initially, emotion recognition used a lexicon-based approach, then shifted to a supervised learning model, and finally, I adopted Generative AI with tools like Vertex AI and Open AI.

## **Labeling**

In the data processing stage of memory analysis, I used both manual processing and machine learning for autonomous theme identification in memory fragments.

In the initial database construction, my judgment was crucial in data labeling, ensuring accurate identification and classification into three categories: key words, abstract concepts, and primary emotion recognition.

In the life stages section, most of the data I collected pertains to early experiences. Therefore, in addition to referencing Erik Erikson's theory of psychosocial development, I primarily divided the data based on the schooling stages. This was manually marked by me during the data collection process.

Key items are tangible elements like objects and situations, while abstract concepts are intangible elements like identity crises. For these two parts, I manually created a list from the literature data and interviews, then used a machine learning model to help me categorize each piece of data into the most suitable classification. Finally, I manually

checked every piece of data to correct any misclassifications. The specific operational logic can be referred to as the emotion detection method.

## Emotion Recognition

The emotion detection aspect was the most challenging part of this project. It involved experimenting with and switching between various tools. Initially, I used a lexicon-based approach for emotion recognition, which then shifted to a supervised learning model. However, the emotion classifications were too rigid and imprecise. So, I eventually turned my attention to a large language model, specifically Vertex AI, which is still open for all developers to experiment with.

In the initial trials, I fed a random piece of data from the database into the system: "I'm collecting the evidence that the Korean half of my identity didn't die when they did. H Mart is the bridge that guides me away from the memories that haunt me, of chemo head and skeletal bodies and logging milligrams of hydrocodone." Vertex AI provided an analysis of the primary emotion, yielding the following results:

*The text expresses a mix of emotions:*

**Grief and Loss:** "Korean half of my identity didn't die," "memories that haunt me," "chemo head and skeletal bodies" all point to a deep sense of loss and sadness, likely related to the death of someone Korean, perhaps a parent.

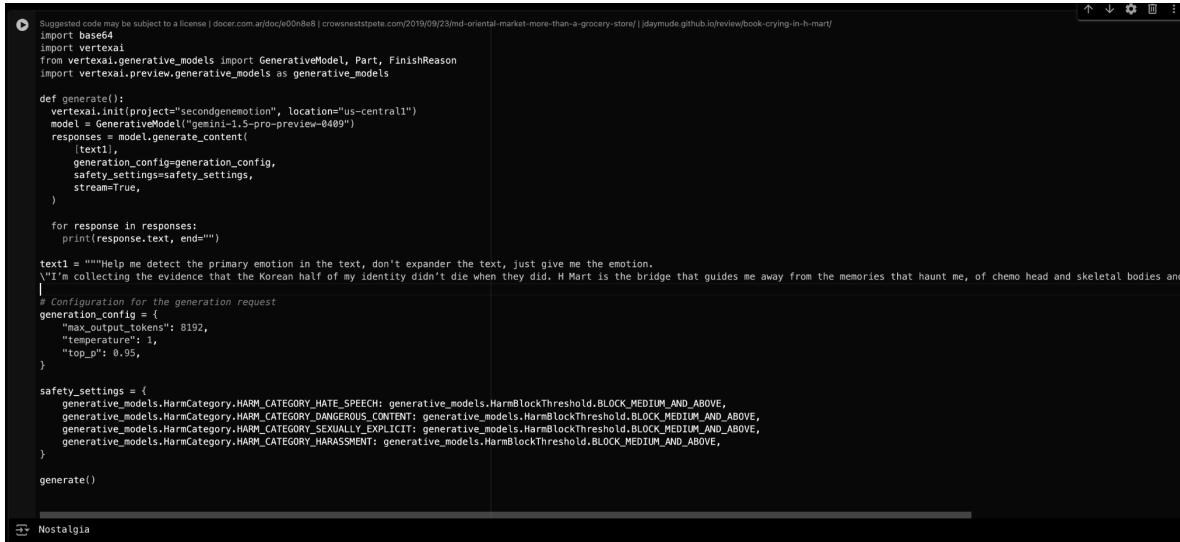
**Nostalgia and Longing:** "H Mart is the bridge," suggests a yearning for connection to the Korean part of their identity, seeking solace and familiarity in a place reminiscent of their heritage.

**Pain and Trauma:** "chemo head," "skeletal bodies," "logging milligrams of hydrocodone" are stark reminders of illness and suffering, indicating a possibly traumatic experience related to the death.

**Hope and Resilience:** "collecting the evidence," "bridge that guides me away" show a sense of determination to reconnect with their Korean identity and move forward from the haunting memories.

*The author is navigating complex emotions, grappling with loss while actively seeking connection and healing.*

Next, I need to continually refine the prompts to make the results more convergent. The final prompt is: "Help me detect the primary emotion in the text, don't explain the text, just give me the emotion." You can refer to the following image for the actual code I wrote. For this piece of text, the primary emotion is: nostalgia. As discussed in the previous literature analysis, I believe that generative AI and large language models can provide us with more precise emotion detection compared to previous supervised learning tools. This is primarily based on Plutchik's flower cones' 16 basic emotions, with some additional subtle emotion labels. Therefore, I decided to adopt this presentation result and incorporate it into the entire dataset. After analysis, it is organized into a CSV file for export. The next section will further explain the organization of the data structure.



```

Suggested code may be subject to a license | docer.com.ar/doc/e00n8e8 | crowsnestpete.com/2019/09/23/md-oriental-market-more-than-a-grocery-store/ | daymude.github.io/review/book-crying-in-h-mart/
import base64
import vertexai
from vertexai.generative_models import GenerativeModel, Part, FinishReason
import vertexai.preview.generative_models as generative_models

def generate():
    vertexai.init(project="secondgenemotion", location="us-central1")
    model = GenerativeModel("gemini-1.5-pro-preview-0409")
    responses = model.generate_content(
        [text1],
        generation_config=generation_config,
        safety_settings=safety_settings,
        stream=True,
    )
    for response in responses:
        print(response.text, end="")

text1 = """Help me detect the primary emotion in the text, don't expand the text, just give me the emotion.
I'm collecting the evidence that the Korean half of my identity didn't die when they did. H Mart is the bridge that guides me away from the memories that haunt me, of chemo head and skeletal bodies and
|
# Configuration for the generation request
generation_config = {
    "max_output_tokens": 8192,
    "temperature": 1,
    "top_p": 0.95,
}

safety_settings = {
    generative_models.HarmCategory.HARM_CATEGORY_HATE_SPEECH: generative_models.HarmBlockThreshold.BLOCK_MEDIUM_AND_ABOVE,
    generative_models.HarmCategory.HARM_CATEGORY_DANGEROUS_CONTENT: generative_models.HarmBlockThreshold.BLOCK_MEDIUM_AND_ABOVE,
    generative_models.HarmCategory.HARM_CATEGORY_SEXUALLY_EXPLICIT: generative_models.HarmBlockThreshold.BLOCK_MEDIUM_AND_ABOVE,
    generative_models.HarmCategory.HARM_CATEGORY_HARASSMENT: generative_models.HarmBlockThreshold.BLOCK_MEDIUM_AND_ABOVE,
}
generate()

Nostalgia

```

# Data Structure

The final data structure is presented in the diagram below. After the data labels are analyzed using the LLM model, a CSV file is generated. I also manually tag data that couldn't be detected or was detected incorrectly. Here is a description of each field:

- Content: The main data content
  - Key\_term: Main keywords, items, characters, or specific situations in the text
  - Concept: Abstract concepts in the text, mainly issues during the growth process
  - Is: Life stages (mainly different stages of education)
  - Contributor: The anonymous person who contributed the memory or had the interview
  - Source: The source of the data
  - URL: The source of online data
  - Created\_time: The time the data was imported

Finally, to create the graph through d3.js, I converted each piece of data into a nested json file using python. As shown below, each piece of data is given its own id and stored in a list for easy data access when creating the graph.

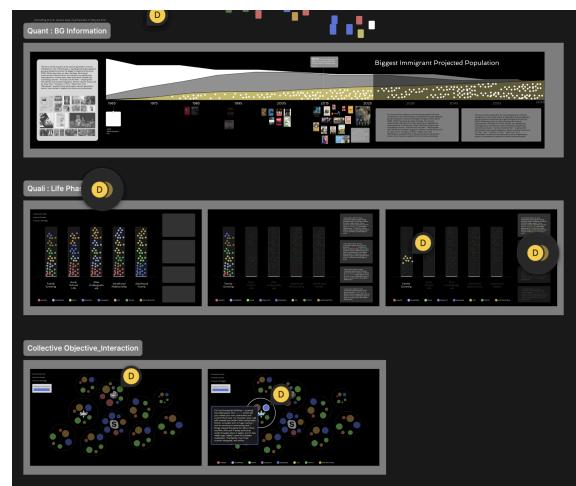
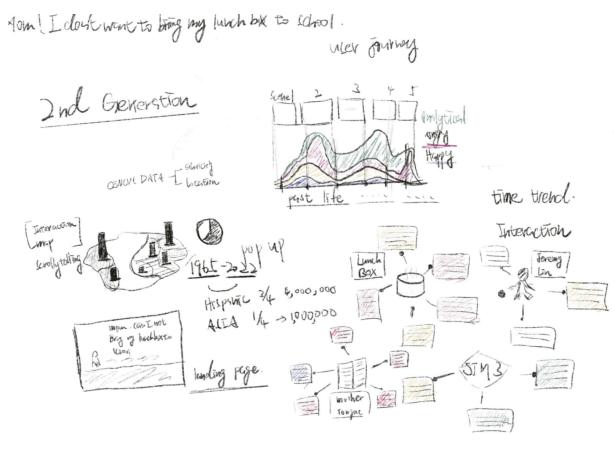
The next section discusses the process of design development in more detail.

Final - 1. memory/cv																
Content	T	Key_term	T	Concept	T	Ls	T	Emotions	T	Contributor <sup>1</sup>	Source	T	Url	T	Created_time	T
I'm collecting the evidence that the Korean half of H Mart				Identity	Crisis	High school		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
You are an American. From this day on, no more I English				Language	Barr	Post-high school		Apprehension		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
To Eng and Han, this phenomenon seemed akin to Home				Identity	Crisis	Middle school		Sadness		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
H Mart is a supermarket chain that specializes in H Mart				marginal group		Post-high school		Sadness		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
Sobbing near the dry goods, asking myself, Am I family				Inhibitions		Adulthood		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
I don't recall Goya beans next to bottles of sm family				Asian	sterility	Middle school		Sadness		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
I can hardly speak Korean, but in H Mart it feels like I'm				Asian	sterility	Adulthood		Interest		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
As you go farther into your pilgrimage, the mother Tongue				Language	Barr	Elementary school		Interest		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
I think about my family who lived in Korea, before China Town				Identity	Crisis	Middle school		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
Within five years, I lost both my aunt and my mom. H Mart				Attachment	So	Adulthood		Sadness		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
Within five years, I lost both my aunt and my mom. H Mart				Identity	Crisis	Post-high school		Sadness		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
What we're looking for isn't available at a Trader				Alternative	Cul	Post-high school		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
We sit in silence, eating alone. But I know H Mart				Identity	Crisis	Post-high school		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
I wonder how many H Mart customers miss their family				Identity	Crisis	Adulthood		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
I think about my family who lived in Korea, before China Town				Identity	Crisis	Post-high school		Nostalgic		Michelle Zauri	Crying in H Ma			May 8, 2024 3:55 PM		
I think about my family who lived in Korea, before China Town				Confidence	For	Adulthood		Nostalgic		Hua Hsu	True			May 8, 2024 3:55 PM		
I think about my family who lived in Korea, before China Town				Identity	Crisis	Middle school		Nostalgic		Hua Hsu	True			May 8, 2024 3:55 PM		
The deal was still shifting, and your accent was Community				Assimilation	Is	High school		Pensiveness		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
You discuss how you socialize, the American. Role Models				marginal group		Middle school		Interest		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
Why we're always working so hard, proving our Family				Identity	Crisis	Post-high school		Interest		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
He models his behavior after characters on TV. <i>Role Models</i>				Identity	Crisis	Post-high school		Pensiveness		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
The immigrant's responsibilities requires an extra effort				Language	Barr	Post-high school		Renditeness		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
I grabbed a pack of baseball cards as I was lead Cards				Identity	Crisis	Adulthood		Nostalgic		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
My father often referred to himself as "Eastern" Community				Identity	Crisis	High school		Interest		Hua Hsu	Stay True			May 8, 2024 3:55 PM		
My parents were spending more time in Taiwan. I Home				Language	Barr	Post-high school		Nostalgic		Hua Hsu	Stay True			May 8, 2024 3:55 PM		

## Sketch / Prototype

During the drafting stage, as I already decided to design the main graphics around a timeline narrative and memory bubbles, I started to explore various possibilities. For instance, I considered presenting the changes in the immigrant population through a map or depicting the proportion of emotions during different life stages using a stream graph. Additionally, I contemplated using a tree diagram to illustrate the connections between objects and memories.

In the prototype stage, I further confirmed several different design expressions, including the timeline and the creative works of Asian Americans in each era. Memories were represented through bubbles or particles, and the final interactive tool was a circle packing chart.

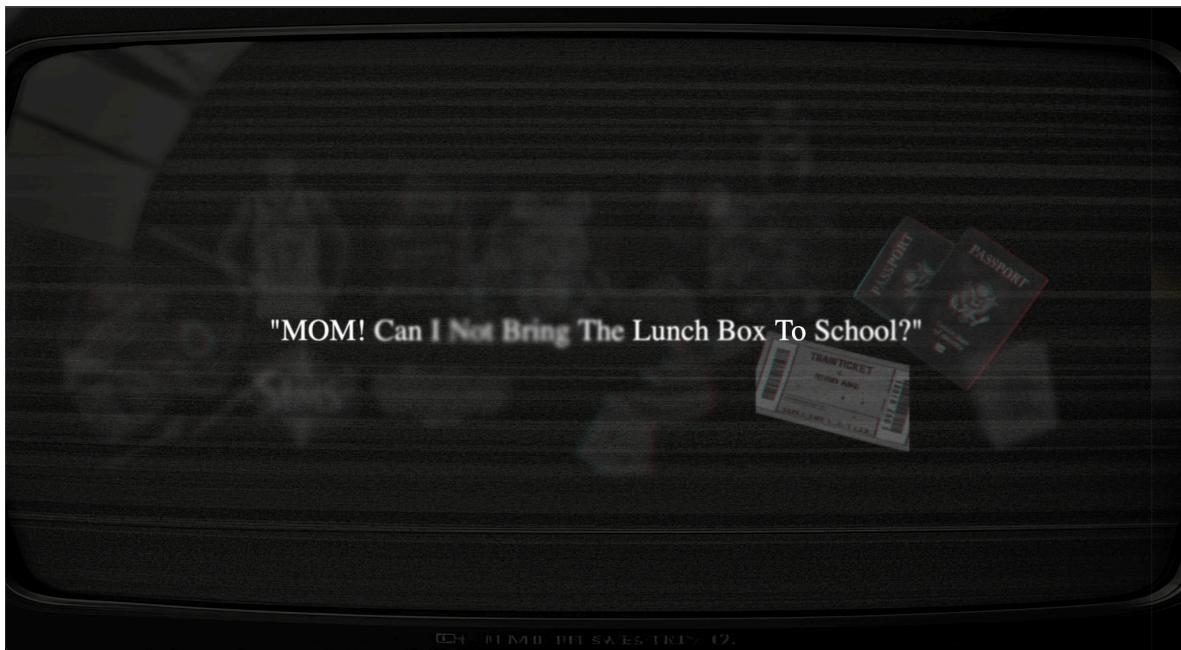


## Feature Visualization

In the final design, based on the results of my emotional analysis, I found that feelings of nostalgia and retrospection were the most dominant. Hence, I decided to start from this point and incorporated various retro elements into the website design. These elements included vintage televisions, glitched objects, black and white photographs, film-style images, overall low saturation colors, and antique glass window displays. Below, I will explain the design of each of the four website pages, along with a link to my [data Viz website](#).

### Opening Page

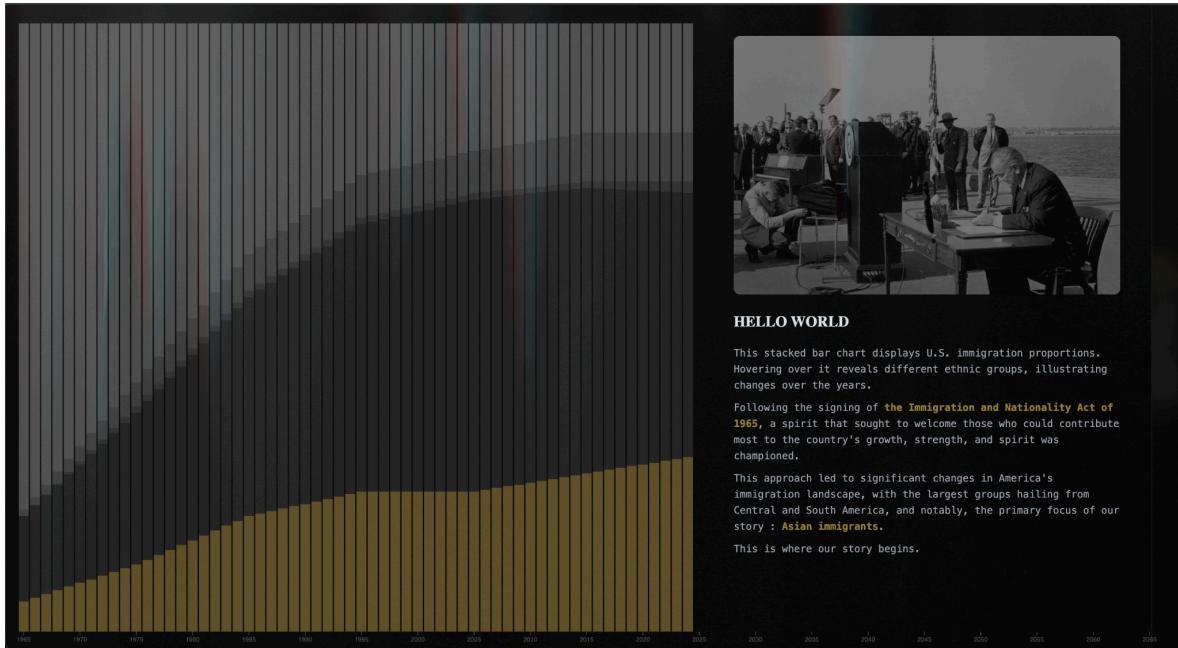
In the main visual of the page, I used an old LCD screen TV as the background. And through the dynamic blur effect to present the distortion and fuzzy atmosphere of childhood memories. At the same time, in the background part, I let different childhood items and characters emerge and dissipate from the background.



### Chronology

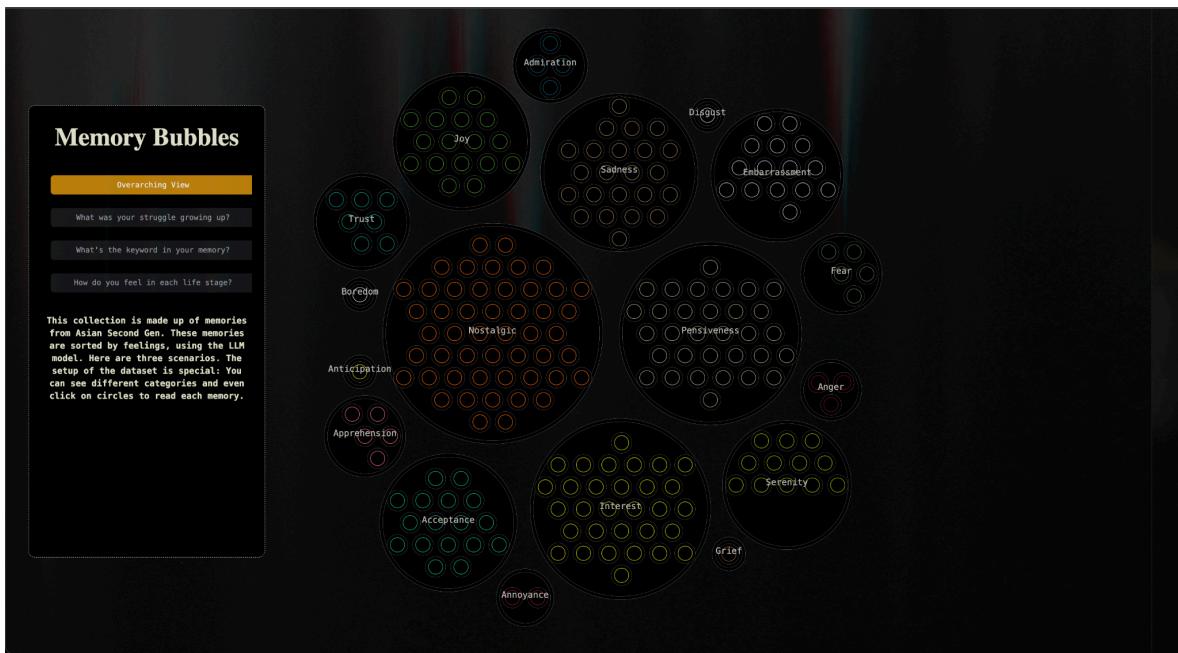
In the chronology section, I use the scrollytelling method to present the narrative I want to discuss. From 1965, after the passage of the new immigration law, the struggle of Asians in American society began, to the 1980s when they began to build their own

narratives through independent films, and finally to the past decade when Asian creators slowly came to the fore. On the left side of the chart, it shows the population change of Asian immigrants. In the end, by pointing out that now is a good time to better understand this group as they are projected to become the largest immigrant population by 2065.



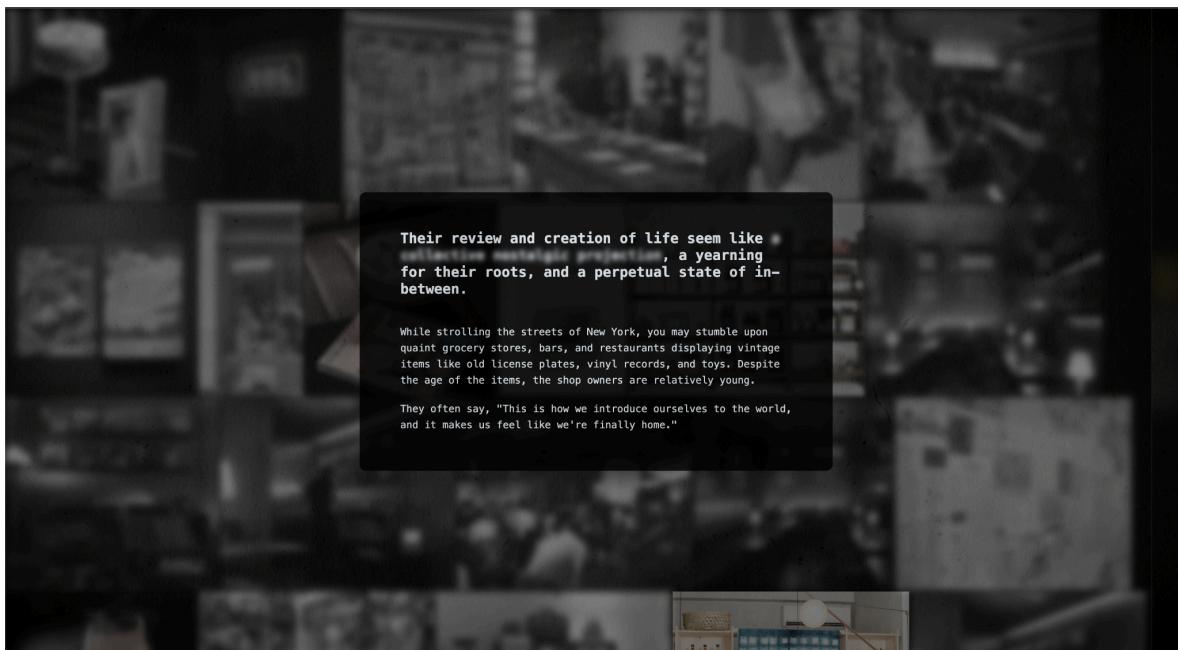
## Memory Bubbles

This page mainly presents my results of visualizing memory data. When entering the screen, you can see a rendered graphic animation, showing the proportion of different emotions. On the left side of the screen, I use abstract concepts, keywords, and life stages as buttons to re-filter the data. It will present the data in the database in different ways. It is convenient for users to understand the core issues of this group through the objects in it. At the same time, you can even know what memories are inside each bubble by clicking on each bubble. Through real stories and emotions, people generate connections and resonance.



## Ending Page

Finally, in the conclusion page. I thought of a few Asian second-generation restaurants, bars, and grocery stores in New York that I really like, all of which have a strong nostalgic style. So I designed a display window to highlight this nostalgic atmosphere. And add a burlap texture layer to increase the real texture.



## Crying in H Mart: A Memoir

"I wonder how many H Mart customers miss their families, eating to feel connected or to honor them through food. Who, like me, couldn't return home this year, or in the past decade, or who miss those forever gone from their lives?"

"H Mart is a supermarket chain that specializes in Asian food. H Mart is where parachute kids flock to find the brand of instant noodles that reminds them of home."

"I'm collecting the evidence that the Korean half of my identity didn't die when they did. H Mart is the bridge that guides me away from the memories that haunt me, of chemo head and skeletal bodies and logging milligrams of hydrocodone."

Michelle Zauner

---

## Conclusion

This thesis embarked on an in-depth exploration of the experiences and complex emotions of second-generation Asians in America. It leveraged innovative generative AI techniques for emotion recognition and data visualization, which were central to the research methodology. This application of AI showcased its potential for social science research and shed light on the nuanced experiences of this specific group.

The research revealed a dominant feeling of nostalgia among the second-generation Asian Americans, achieved through meticulous data collection, processing, and interpretation. The use of advanced tools like generative AI proved pivotal in unearthing subtle emotions within the comprehensive database of memory stories.

However, the study also recognized the limitations of generative AI in capturing the intricate dynamism of human consciousness. It underscored the necessity of researchers' active participation in the model training process to ensure accurate emotion capture.

The thesis findings were visualized in a website format, employing a design infused with retro elements to highlight the sense of nostalgia. The design included an opening page featuring a vintage LCD TV screen background, a chronological section presenting the history of Asian immigration in the U.S., and a 'memory bubbles' page for individual memory data visualization. The conclusion page captured the unique ambiance of Asian second-generation spaces in New York City with a nostalgic window display design.

In the end, the research reiterates that emotions serve as a supplement to resonate with a story, as the same text could elicit different emotional interpretations across individuals. The focus should hence be on how we connect emotions with stories rather than the precision of emotional analysis. As the 'black box' of technology presents both opportunities and challenges, it requires continuous exploration and understanding.

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# Appendix

## Interview Outline

Interview Tool : Camera, Otter.ai

Main Topic	Related Question	Note
Could you introduce yourself?	What is the status of your family, and what were the reasons for their choosing to immigrate to the United States?	Identity/Ethnicity
Could you share some memorable memories from your time in school?	What scenes left a lasting impression on you?	Childhood
Did your parents ever insist that you learn their native language when you were young?	What was your attitude towards it at the time? How do you feel about it now?	Identity/Language
Did you often move houses when you were young? Or were your parents frequently away?	What are your feelings about this when you look back on it now?	Mobility
Today, you brought an item that represents yourself. What is it? Could you share its significance and the story behind it?		Take Picture (item and portrait)

