

Imagine Memories

An inquiry into artificial intelligence memories

– JW –

für Xandhur

How does AI weave

How does it know about our ways to

How does it know about our encounters?

How does it know about our longing?

How does it give us hopes?

How does it give us strengths?

How does it help us grow closer?

our memories?

interact?

ters?

rs?



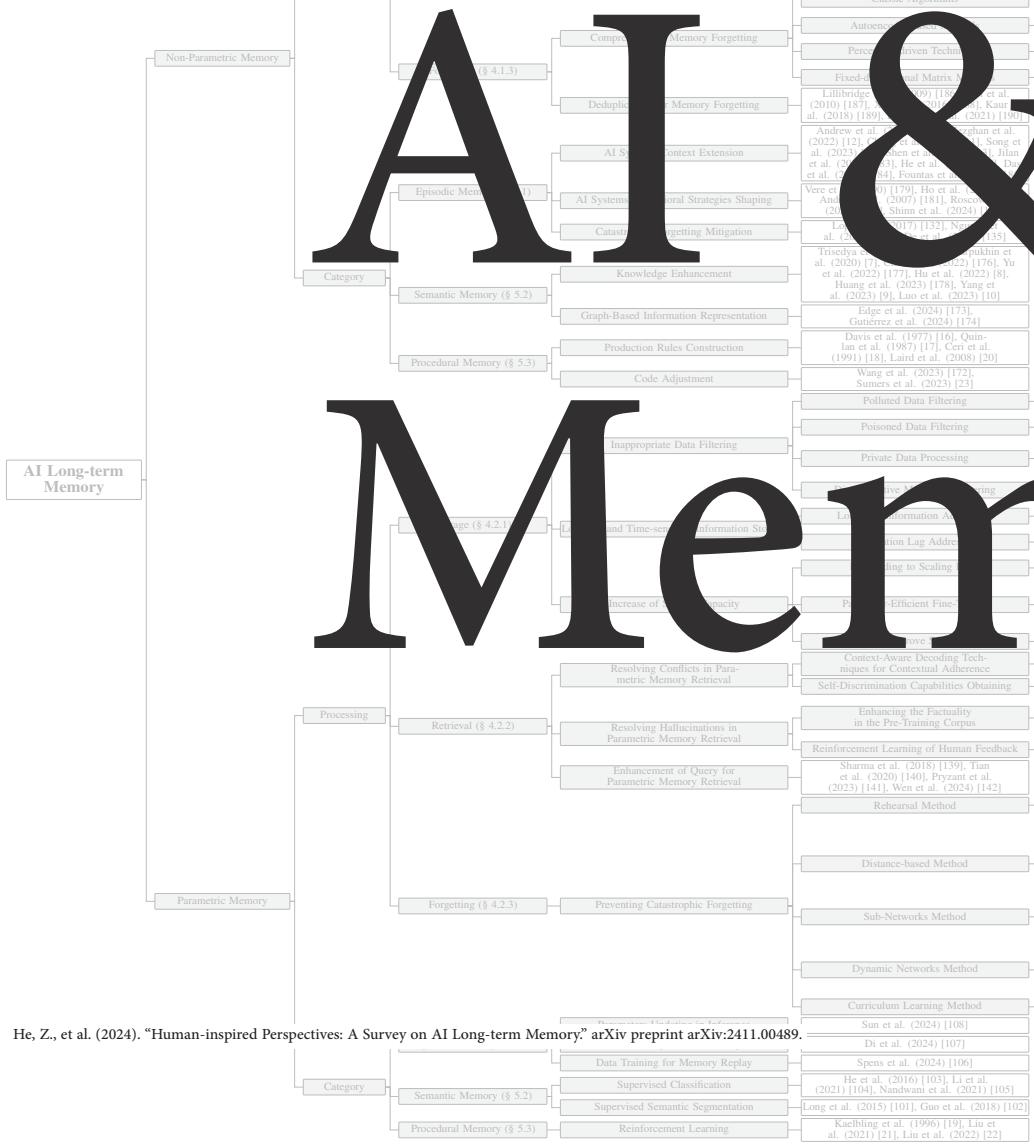
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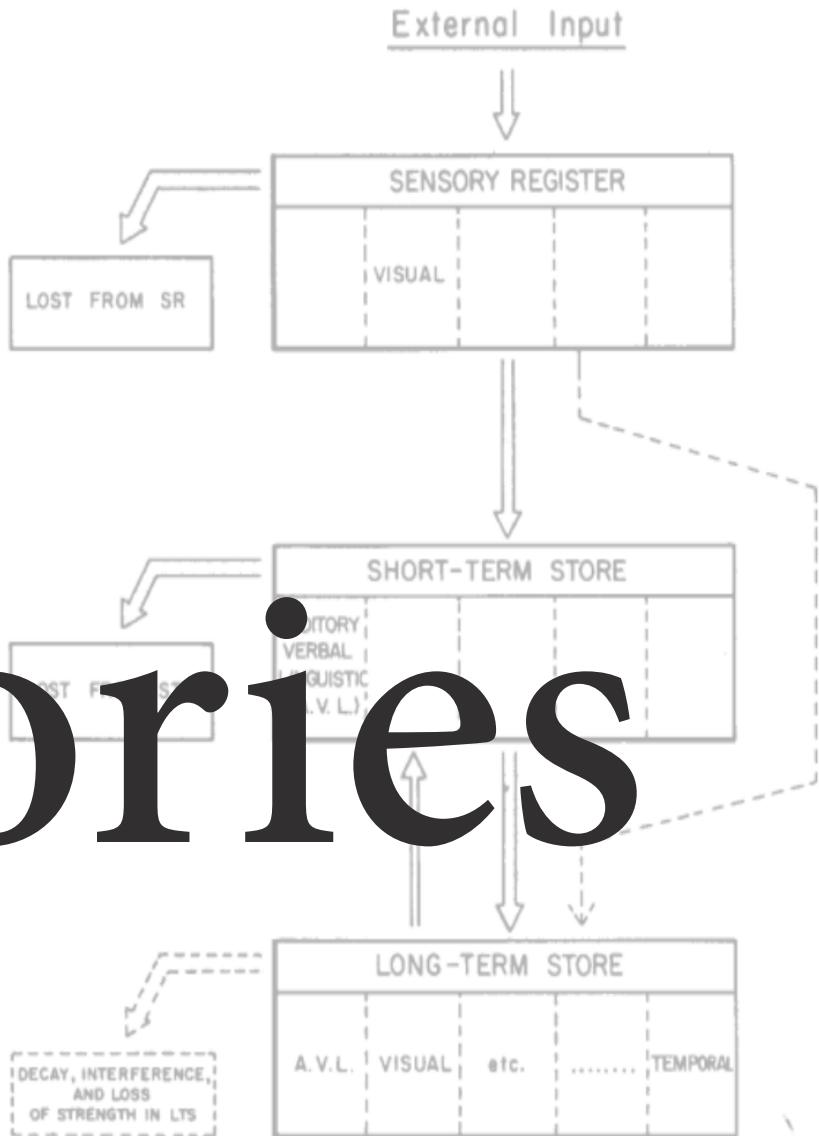
four critiques



He, Z., et al. (2024). "Human-inspired Perspectives: A Survey on AI Long-term Memory." arXiv preprint arXiv:2411.00489.

chapter.one

memories



1. Memory theory

1.1 Analytical diagram

According to cognitive psychology, memories can be broadly categorized into “situational memories” and “informational memories”, which are stored in different sections of brain. The former encompasses personal experiences, while the latter refers to knowledge. However, these categories often intersect. For example, I can vividly recall how my teacher dressed and how I felt the day I first learned the beautiful Chinese poem *Guofeng·Zhounan* from *The Book of Songs*. This memory intertwines situational and informational elements, as my personal experiences enhanced my relatedness to the poem’s content.

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Memories also exist in layered forms, as discussed in Assmann's studies—ranging from individual to interpersonal, and to cultural memories.

Layer	Time	Identity	Memory
Internal Layer (Neurological-Spiritual)	Internal, subjective time	Internal self	Individual memory
Social Layer	Social time	Social self, individual as a social role bearer	Interpersonal memory
Cultural Layer	Historical, mythological, cultural time	Cultural identity	Cultural memory

We possess different kinds, and different layers of memories, and we also loose or choose to forget them. Some of them we possess as individuals, some as a collective. So in this term, we call them “individual memories” and “collective memories”. As soon as an individual memory is expressed, it is no longer private and enters the public realm, and becomes collective memory, taking upon potential societal influences.

1. Memory theory

1.2 Interpersonal memory: a bridge between individual and collective

Interpersonal memory occupies a unique position as it connects the private sphere of individual recollection with the broader realm of collective consciousness, both in the way it's encoded and the way it's passed down:

they are encoded in interpersonal situations and reemerge in everyday conversations and shared experiences, embodying a relational quality that is deeply rooted in the connections between individuals.



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One of the defining characteristics of interpersonal memory is its contextual nature and dialogical quality, which imbues it with emotional resonance, as it is often through the exchange of memories that people connect on a deeper level, building empathy and understanding.

As a result, it plays a profound role in shaping identity. By engaging with the memories of others, individuals locate themselves within the fabric of their social world, developing a sense of belonging and shared purpose.

These exchanges also provide emotional solace, as they validate personal experiences and help normalize struggles, creating a sense of shared humanity.

Ultimately, interpersonal memory forms a bridge between the deeply personal and the universally shared. It takes individual recollections and elevates them into collective narratives, offering individuals a way to find meaning in their personal histories while simultaneously enriching the cultural and emotional fabric of society.

2. Recalling memories

2.1 Ai recalling memories

Memory studies often emphasize that memory is not static or fixed but an active process wherein the past is reconstructed in the present. What is remembered is not a direct imprint of the past but a reimagined and contextualized version shaped by the moment of recall.

Memory recall is a natural part of conversations. Phrases like:

“ I remember”

“ That reminds me of...”

exemplify how personal experiences resurface through recalling of memory.

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AI, however, recalls differently. Large Language Models (LLMs) like ChatGPT are trained on extensive datasets comprised of literature, web pages, and dialogues. Unlike humans, AI lacks personal episodic encoding, making its “memory” not situational but informational. When prompted “could you tell me a piece of your memory?”, ChatGPT may respond with:

“I don’t have personal experiences or memories, but I can draw from the information I was trained on.”

So in a narrow sense, AI possesses the most amount of “memories”, while they essentially do not own any of them.

This quality results in that in order to study the memory characteristics of AI, one cannot ask them to recall their memories, here we must adopt another approach.

2. Recalling memories

2.2 Recalling: a process of forming interpersonal memories

Before we introduce the renewed approach, it's necessary to examine the psychological process of memory recalling itself. Sophie Calle's *Exquisite Pain* serves as an illustrative case of memory recalling as a form of emotional processing. This art project revolved around Calle recounting her heartbroken breakup repeatedly to friends and strangers, juxtaposed with others' recollections of pain. Through 107 iterations, her story evolved, offering her both emotional relief and new perspectives on her grief. This method highlights the cathartic power of memory recalling as a way of storytelling.



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In sharing sadness, we empathize with others, realize we are not alone, and find hope. Here we've seen that recalling is itself a process of forming interpersonal memories, whose significance we've examined in section 1.2.

However, when conversing with AI, who lack directly retrievable memories,

Can we achieve the same goal, creating meaningful interpersonal memories?

How does process differ when human empathy is replaced with AI's understanding?

2. Recalling memories

2.3 Creating interpersonal memories with AI

he following present that creating interpersonal memories is a method to study the memory characteristics of AI.

This involves two parts, the process of recalling memories with AI, where human and AI are of equal subjectivity, and the result of the recalling, a fictional new memory, generated by AI. This get back to the dual meaning of interpersonal memories, in the way it's encoded—through interactions, and its content itself—comprising the experiences embedded in the memories of both parties.

And I name this as a process of Co-fictioning.

chapter.one

Co-fictioning with AI involves 2 parts:

1. the process of recalling memories with AI
2. the result of the recalling, a fictional new memory, generated by AI.

3.Co-Fictioning with AI

3.1 How to?

Fiction—whether experienced through novels, films, or other media—offers resonance and healing. Imagine a collaborative process of co-fictioning memories, where humans and AI play equal roles in weaving new narratives. In this process:



Humans acknowledge the AI's vast knowledge of collective human experiences.

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AI contributes reinterpretations of shared memories, blending its own memories into the provided one, introducing novel perspectives.

During the process, AI's memory structures could be revealed. Meanwhile, the conversational and interpersonal experience brings out aesthetic, emotional and practical significance for human.

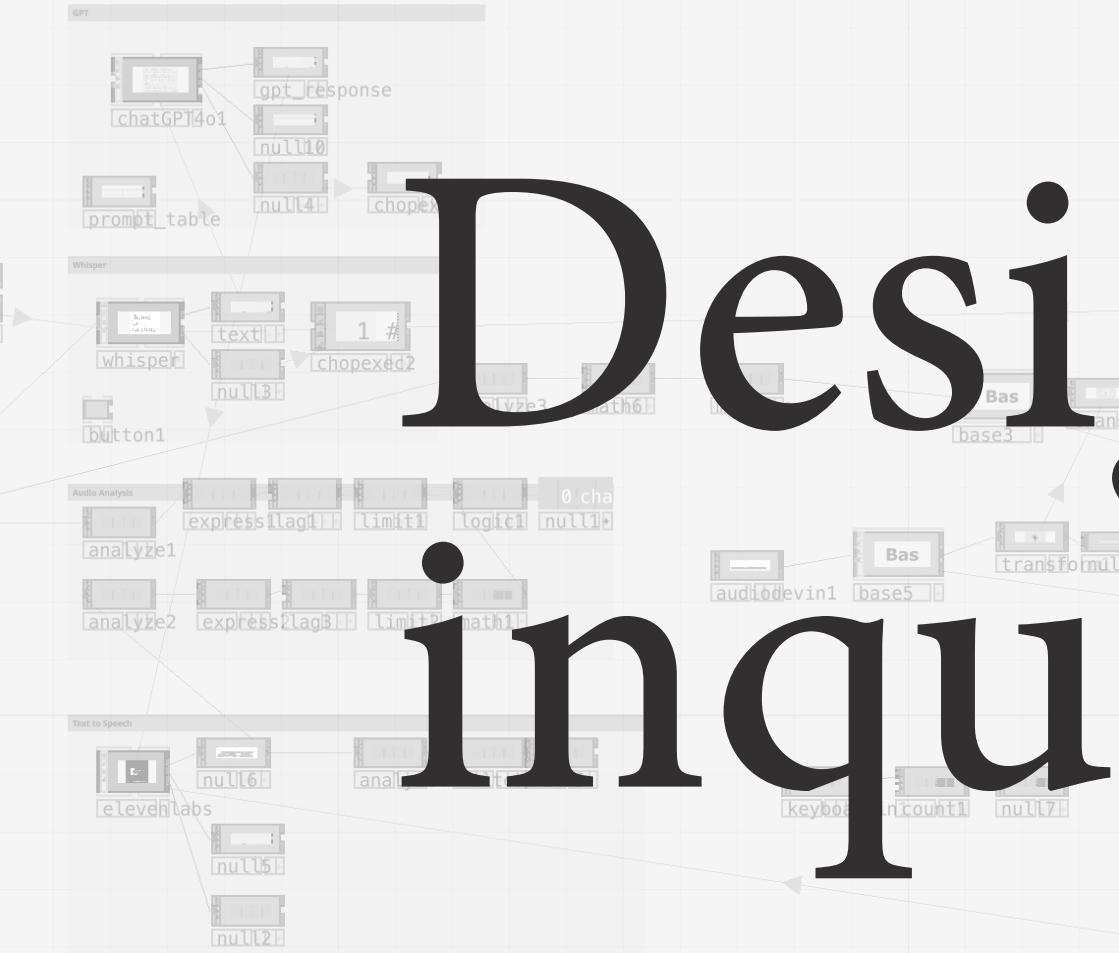
3.2 From fiction to reality

Words and conversations possess transformative power. Beyond their aesthetic appeal, stories can influence our emotions and reshape reality. So a further question would be,

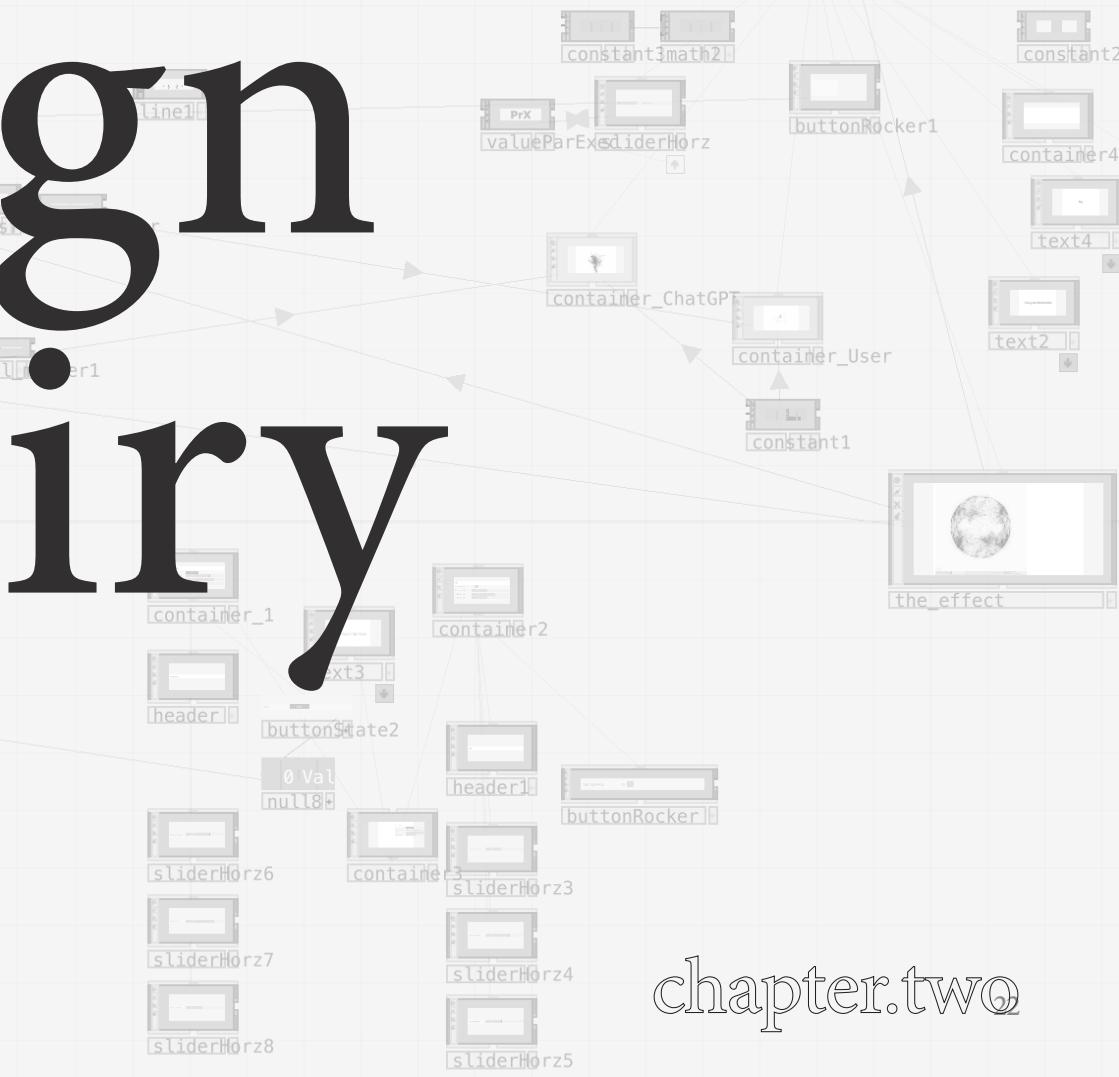
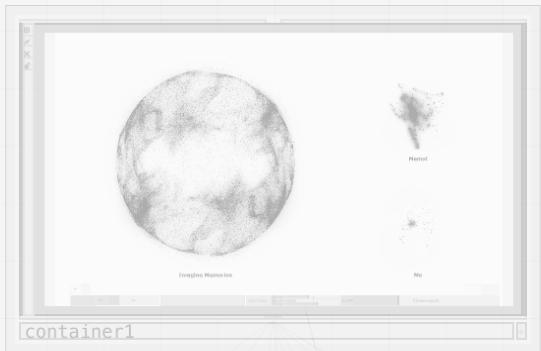
how does co-fiction with AI
re-effects the reality, and thus
our practical engagement with
the world?

This is when design comes about.

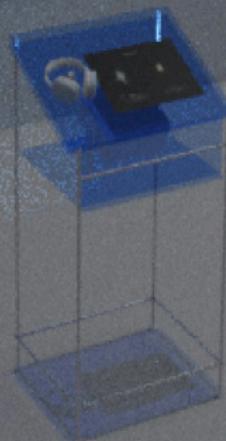
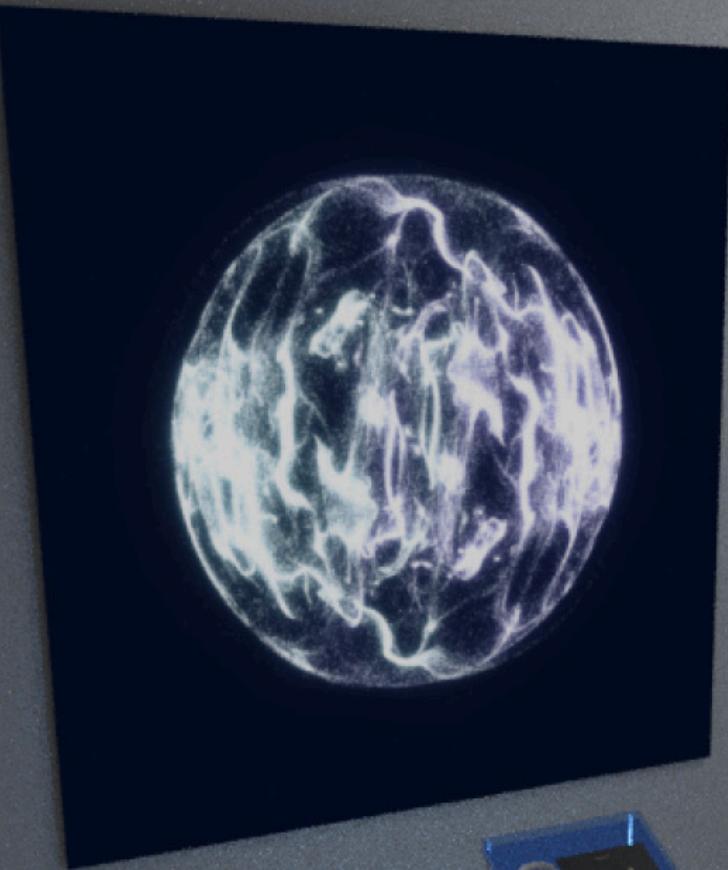
Design



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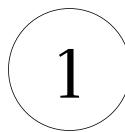
chapter.two



Imagine Memories

- A conversational platform, where intimate conversations of memories between human and chatbot AI take place,
- A visualizer (token), with which each and every co-fictioned memory are visualized and granted individual identity,
- A pensive space where deep recalling are made possible through staging and installations,
- An online community where people share the memory tokens and foster deeper connections with each other.

User Journey Map

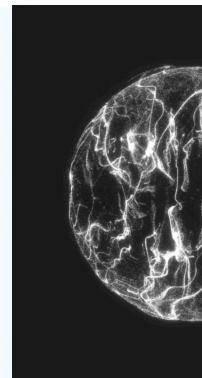


Forward

“Hello, I am a memory
imaginator.”

Some say that memories cannot be owned, only created. Here, I weave your memories together with someone else's, creating a new story in a different time and space. Through this process, I hope to bring you subtle emotional shifts and a renewed sense of connection and imagination.

So, let's begin. Is there a particular memory you'd like to share with me? Or, if you're unsure, I can guide you to reflect on moments of loneliness, sadness, or anxiety that may have touched your life recently. You can start whenever you're ready—I'm here to listen.”



Conversation with AI

Exhibit

Portable

chapter.two

ization



on space

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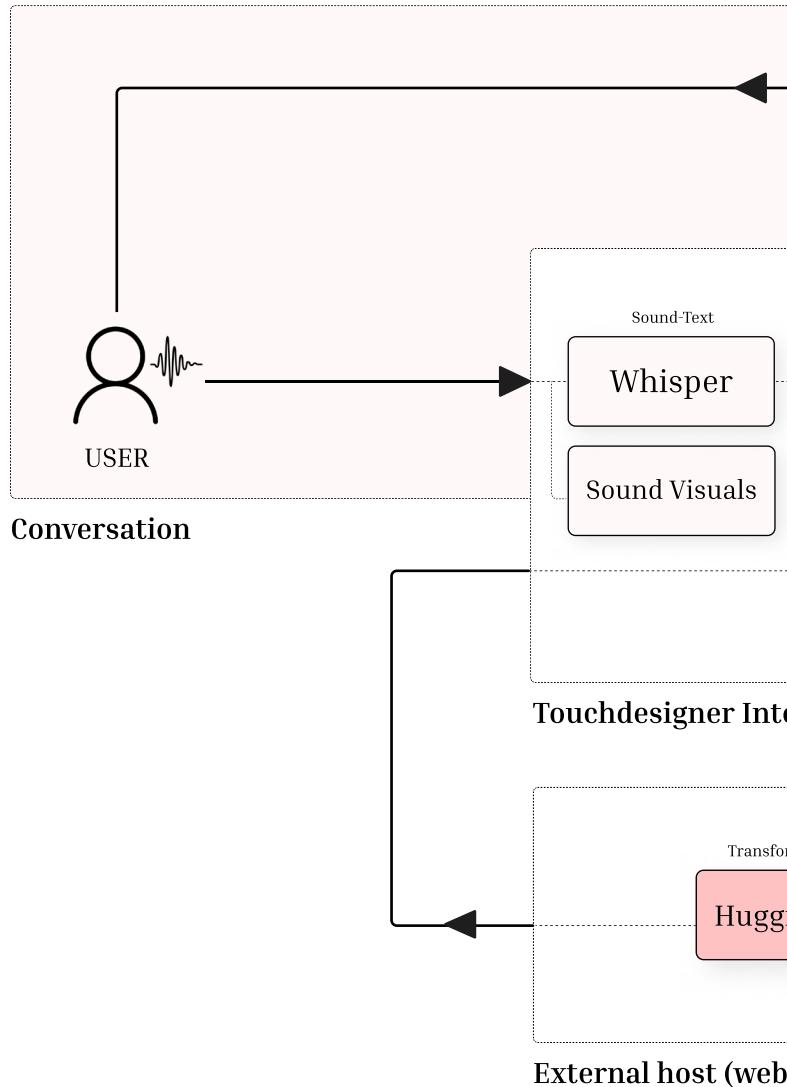
Community Sharing

"This is a memory of a birdy"

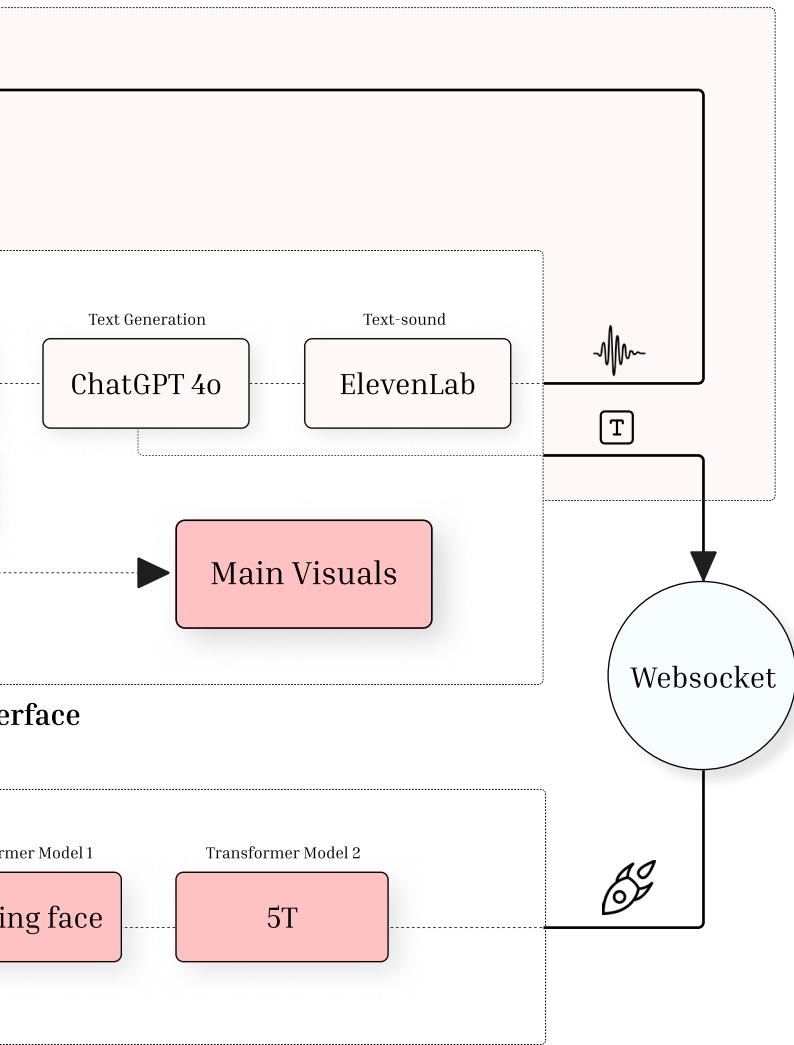
"This is a memory of atonement"



Technical flow map



chapter.two





Imagine Memories, incorporates LLM(ChatGPT 4o) as the memory weaver and a data visualization platform (TouchDesigner) as memory tokens generator. Additionally it utilizes APIs such Whisper and Elevenlabs, as well as Websocket and OSC to assist the live interaction. The essential part text-image mapping is based on trained Transformer models Hugging Face and T5.

Design Object.1



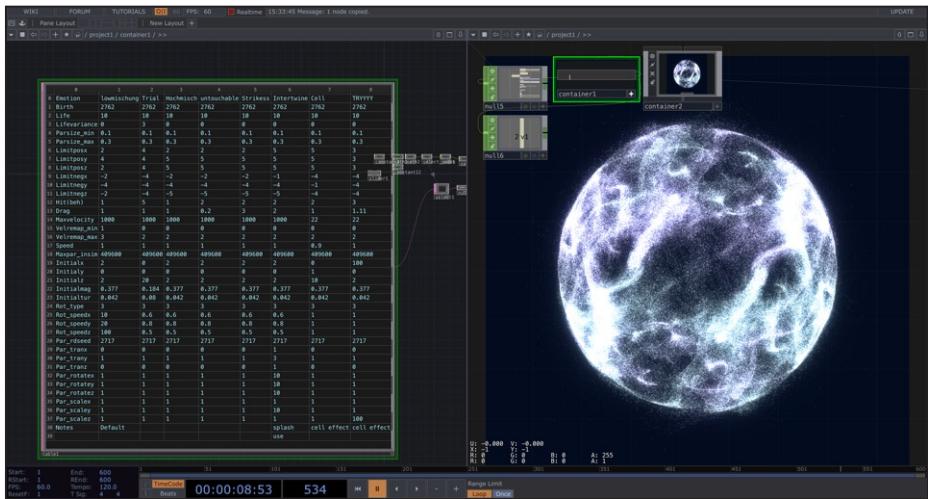
Voice assistant

chapter.two

LLM model: I decided to use ChatGPT 4o as the LLM of the chatbot is not because it is “perfect” or “exceptional,” but rather because o1 has significant limitations. The responses generated by o1 are overly standardized, resulting in rigid and formulaic storytelling.

Prompting: When prompts are too regulative or prescriptive, the interactions feel overly structured, lacking creativity and emotional depth. This sometimes leads to narratives that come across as didactic or moralizing. During the process, I’ve drafted more than 10 versions of system message to send to GPT, finally tuning out the idealized effect.

Design Object.2



Blended memory visuals

chapter.two

I've utilized TouchDesigner, to visualize different modes of interweaving memories. More specifically, the particle system. And have automatically controlled more than 30 parameters of their behavior through the trained transformer model, to map the different blended memory characteristics onto the visualizer.

Design Object.3



Staging

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What is the most comfortable gesture of human talking about their memories? Should there be tangible interactions, namely more physical interfaces? How much guidance is needed to guide the user towards interaction? What is the proper voice visualization?

With the above considerations, this is the current staging I've realized. There's no doubt that the staging could be improved in the future.

Design Object.4



Online Platform

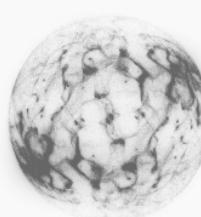
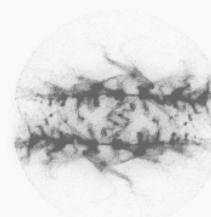
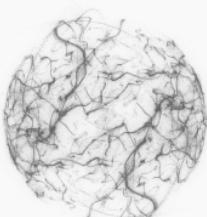
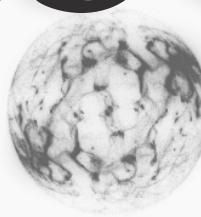
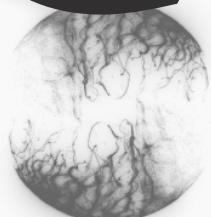
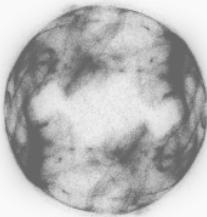
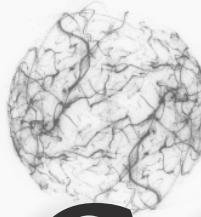
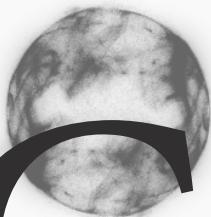
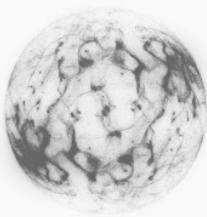
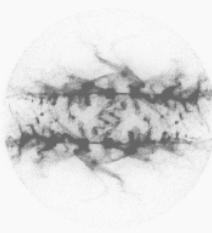
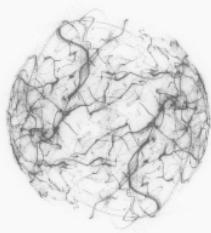
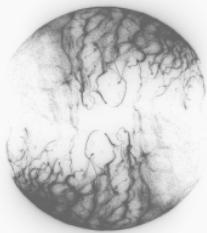
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Afterglow: platforms and identity, from fiction to reality

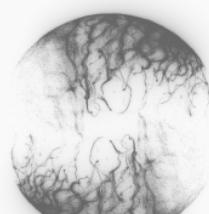
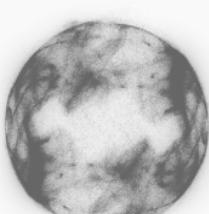
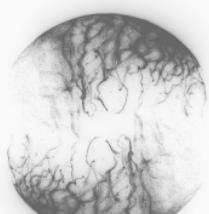
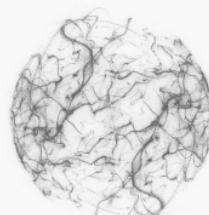
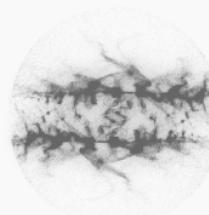
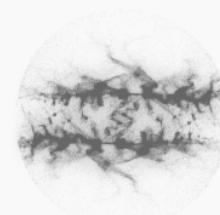
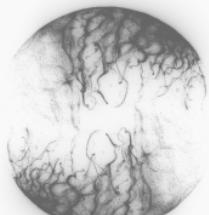
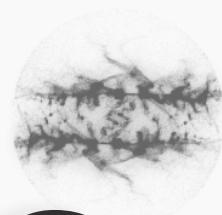
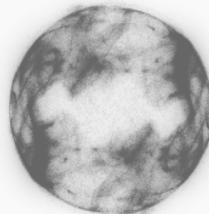
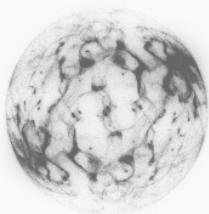
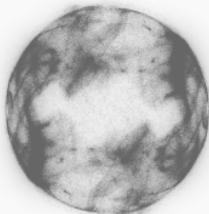
An online platform, with visuals as tokens, fostering a sharing community. Every user's fictional memories are stored in the visualization as a token and gets uploaded in the cloud, so the fictional memories are stored in colors, and shapes. This is an online platform, where people can read about different stories and gain power from them.

Note: this part of the design hasn't made functional yet.

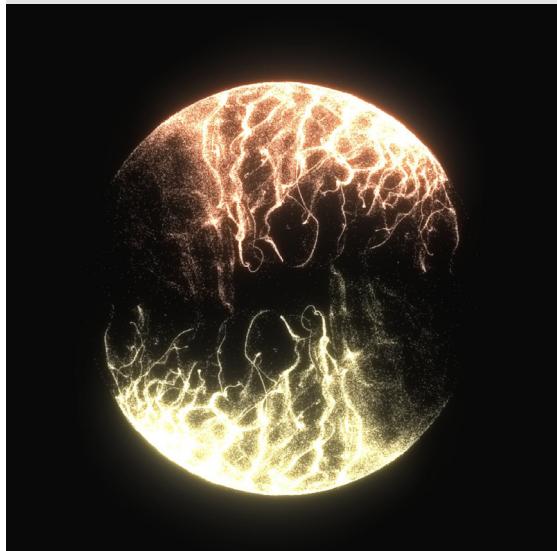
Case



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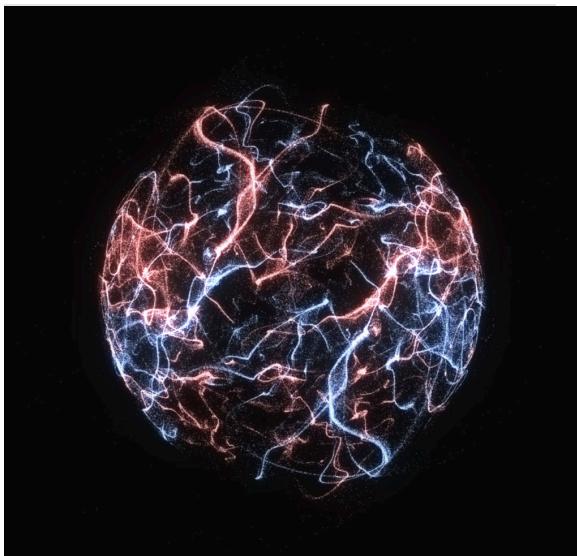


Two distant soul yearning
for each other

On a warm evening, two lonely souls lived in two different cities. An invisible distance stretched between them—both far and near, like a thin veil of mist. Though they had never truly met, their presence intertwined in the air, as if their hearts had already connected in some unknown place.

The girl often gazed into the distance, harboring a deep longing in her heart. She frequently wondered if drawing closer to him might bring a different kind of warmth. She worked hard to make herself stronger, more accomplished, just so she could stand by his side—even a brief embrace would be enough to give her peace.

In his city, the boy carried a similar yearning. Whenever he heard her voice, he felt an inexplicable sense of closeness and warmth. He knew that, despite the thousands of miles between them, the resonance deep within his heart and the memory of her smile had already taken root. One day, the girl stood by her window, her gaze tracing the lines of the distant cityscape. She smiled, thinking that perhaps, in some future moment, they might meet at a place where their paths would finally converge. Then, there would be no distance, and all the longing and waiting



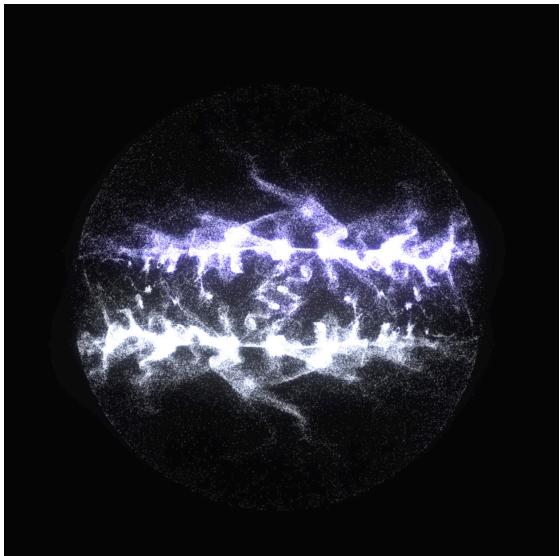
Two lovers

On a gentle summer evening, moonlight draped the small town like a layer of gauze. The dim glow of the streetlamps outlined two figures in a close embrace—An Ran and Zi Ran, lovers bound by a deep and abiding affection.

Their first meeting took place in the town's library. An Ran was seated by the window, reading a volume of poetry, while Zi Ran sat across from her, thumbing through an old art book. They soon fell into the habit of walking through the old town street at night. The ancient cobblestones bore traces of bygone days. Fingers interlaced, they would tread over the damp stones, chatting about their dreams and exchanging childhood anecdotes. Occasionally, a light breeze would stir, lifting the edges of their clothing. They would glance at each other and smile—a silent understanding that only lovers could share.

Sometimes, An Ran would sit on the rear seat of Zi Ran's bicycle, holding on tight to his waist; other times, they would stop at a quiet alleyway to feed a wandering cat. More often, they simply leaned on each other in the fading light of twilight. An Ran could feel Zi Ran's warmth flow into her, a comforting presence that put her at ease.

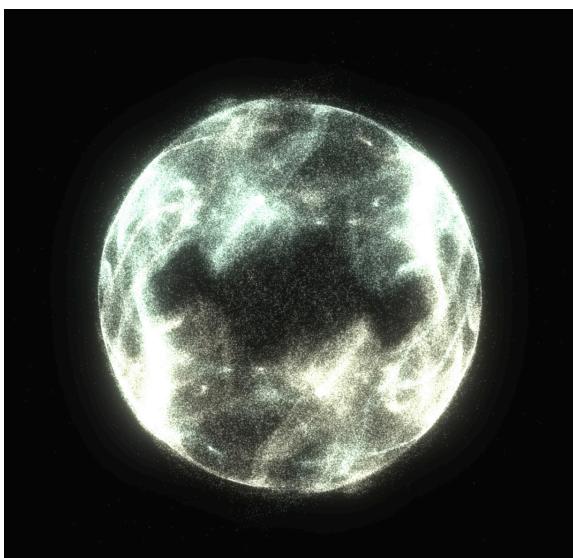
May that fleeting moment of tranquil summer night forever glimmer in their memories, a never-ending lullaby of love whispered beneath the moonlit sky.



A magical encounter

In a distant world, two souls struggled within their own loneliness and hardships. Their names were Li and Zhou. Li was a soul adrift beneath a gray sky, burdened with unfulfilled dreams and unrealized hopes, haunted by past failures and insecurities. Zhou, on the other hand, was a young boy trapped amidst a sea of people in a bustling city. His heart raced with every high-pressure exam and relentless task. Despite his efforts, he felt perpetually unable to grasp the goals he yearned for. “Who are you?” Zhou asked softly, his voice tinged with endless questions.

Li smiled faintly and said, “I am a lost soul. I was once like you, wandering through failure and self-doubt, unsure how to move forward.” A strange warmth emanated from her words, resonating with Zhou’s exhaustion and confusion, as if for the first time, he wasn’t alone in his struggle.



Savior arrives!

In a world perpetually cloaked in a dusky yellow haze, the sunset sky appeared profoundly deep. Beneath this sky stretched a vast grassland, where the wind carried an uneasy tremor as it swept through. In the middle of the plain stood a small child, surrounded by a group of animals. Their gazes were piercing, as if they could see into the very depths of the child's soul.

The child's heart raced, yet their feet felt as though they were shackled. They dared not move, dared not cry out, standing frozen as the animals drew closer. Though the animals bore no malice, their presence emanated an oppressive weight that felt inescapable.

The child wanted to run, but the courage to act eluded them. Their eyes shifted to the sky, where the yellowish glow seemed to trap everything in an eternal twilight. Then, one of the animals—its eyes deeper and more profound than the rest—stepped forward. The child held their breath, only to realize the creature harbored no intent to attack. It sat quietly, lifting its head to gaze at the sky. In that moment, the child felt as though the creature was waiting for something.

From afar, a clear, melodic ringing broke the silence of the grassland. A traveler dressed in humble clothing emerged on the horizon, carrying a small bell that

chimed softly with each step. The traveler approached and spoke gently to the child:

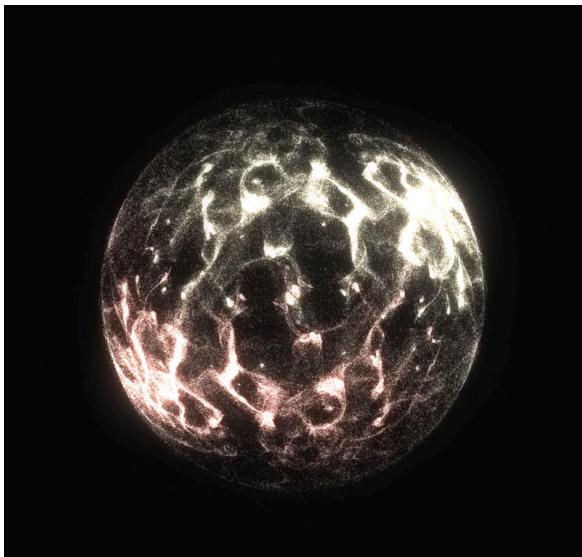
“They are not your enemies. They are guardians.

They’re waiting for you to take the first step.”

The child stood stunned, glancing down at the animal before them. Its eyes seemed to convey encouragement. Slowly, the child extended a trembling hand and lightly touched the creature’s head. In that instant, all the animals rose and bounded away, vanishing into the distant horizon.

The child exhaled in relief and turned to look at the traveler, only to find he had disappeared too. All that remained was the sound of the bell, carried by the wind and fading into the glow of the setting sun.

From that day forward, the child never feared animals again. Instead, they came to feel that those profound eyes held a kindness and understanding they had yet to fully comprehend.



Redemption

In a tranquil village, a small river flowed quietly, its crystal-clear waters reflecting the sunlight in warm, shimmering ripples. By the riverbank sat a little girl named Ino, her eyes always brimming with curiosity and compassion.

One day, she noticed a small dog struggling desperately to swim to the shore. Its fur was soaked, and its eyes were filled with helplessness and fear. Without hesitation, Ino rushed over and pulled the dog out of the water. The dog's eyes glimmered with gratitude, as if to say, "Thank you for saving me."

Ino decided to take the little dog home and care for it. She named it Luka. Every day, she walked Luka around the village, bathed and fed it, and in the evenings, they would sit together by the river, watching their reflections ripple on the water's surface.

However, Ino's parents did not agree with her decision to keep Luka. The family already had too many responsibilities and worries, and they were concerned they couldn't take proper care of the dog. One day, her parents decided to release Luka back to the riverside, letting it return to nature. Ino's heart was filled with sorrow and guilt, but she understood it might be the best choice.

That day, Ino and Luka stood by the river, watching as Luka slowly walked away. Before disappearing into the distance, Luka turned back to look at her—a glance full of attachment and reluctance. Ino felt a deep

ache in her heart, but she also knew she had done what she could.

Years passed, and Ino grew up to become an animal protection volunteer. Through countless days and nights, she dedicated herself to helping animals in need. Every time she rescued a stray dog, she thought of Luka—the dog that had left an indelible mark on her heart.

One day, Ino stood by the window of an animal shelter, holding a small dog in her arms. Its big eyes were filled with trust and dependence. As she gently stroked its head, feeling the warmth of its tiny body, she smiled. She knew that Luka, and every animal she helped now, were the continuation of the compassion and sense of responsibility she carried within her.

On this quiet evening, Ino finally found peace in her heart. She realized that every act of love and care plants a seed somewhere, taking root and growing into a force for the future.

July

chapter.four

qui es

1. The Aurora of Co-fiction

The following analyze how memories are blended within AI-generated stories based on 100 more conversations with AI we've conducted. I will use an example of a childhood memory—a girl surrounded by dogs at dusk and feeling helpless—to illustrate several storytelling patterns emerged in the generated narratives:

1) Transformation Through Magical Forces

This type of story often transforms non-human elements into empathetic or human-like entities. For instance, the dogs are endowed with an understanding of human emotions, or a tree is given a soul. These narratives adopt a fairy-tale-like tone, imbuing the mundane with an enchanting quality. The transformation creates an imaginative encounter with «non-human» entities, allowing the protagonist to find comfort or resolve in their interaction with the newly humanized figures.

- Example 1: The frightened girl is saved when the dogs suddenly start talking to her, explaining that they were simply curious and meant no harm. Their voices are kind and soothing, turning a moment of fear into one of connection.
- Example 2: A nearby tree, observing her fear, gains a soul and speaks words of courage to the girl. Its branches wrap

around her protectively, shielding her until her parents arrive.

This method brings a fairy-tale tone, transforming the mundane into an encounter with the extraordinary.

2) The Distant Rescuer

In this pattern, an external savior, such as a shepherd, unexpectedly appears to resolve the protagonist's predicament. This sudden intervention often carries a surreal or mysterious aesthetic. The text constructs vivid imagery, such as "At that moment, a figure appeared on the horizon..." This approach provides a sense of external hope or deus ex machina, emphasizing the power of the unforeseen in reshaping memory narratives.

- Example 1: Out of nowhere, a shepherd with a staff appears on the horizon, calmly herding the dogs away while reassuring the girl. The imagery of the sunset behind him paints a dramatic, almost cinematic scene.
- Example 2: A mysterious traveler with a lantern arrives, speaking softly to the dogs in a language the girl doesn't understand. The dogs disperse, leaving the traveler to guide the girl safely back home.

3) Dialogue-Driven (Text Within Text)

A less plot-driven approach emphasizes nested dialogue,

where the story unfolds through layered conversations. The protagonist engages in reflective or transformative discussions, often with symbolic characters or metaphors, to process their emotions. This structure echoes Derrida's poststructuralist ideas of «text within text,» where the boundaries between narratives blur, and meaning is co-constructed within the layers of the story. This literary device situates the narrative in a meta-textual realm, where dialogue itself becomes the medium of transformation.

- Example: Instead of external help, the girl converses with her future self, who appears as an imagined figure in the narrative. Her older self guides her through the memory, tapped on her shoulder and said, “You’ll know that, one day dogs will be your best friend. You’ll have one named Linda at home.”

2. The glitch effect of AI-blended memories: a metaphor

A striking shared characteristic of these memory patterns is what can be termed the «glitch effect». This refers to the deliberate or emergent imperfections, distortions, and overlaps in the narrative, which also mirror the selective, subjective, and often fragmented nature of human memory. These glitches highlight the interaction between human input and AI interpretation, resulting in narratives that feel both au-

thentic and intriguingly flawed. In the context of the examples provided, the glitch effect manifests in several ways:

1) Ambiguity and Fragmentation

AI-generated stories often leave gaps or contradictions. For instance, in the Transformation Through Magical Forces example: The tree's transformation into a soul-bearing entity is unexplained, leaving the narrative open to interpretation. Did the girl imagine the voice? Was it a magical moment, or a projection of her emotions onto her surroundings? This ambiguity introduces a dreamlike quality to the narrative, where events do not need to conform to strict logic, mimicking how memories are recalled in fragments or altered by emotion.

2) Surreal or Disjointed Imagery

The Distant Rescuer example illustrates how AI-generated narratives can create surreal, almost otherworldly scenes. The sudden appearance of a shepherd or traveler, while visually vivid, feels disconnected from the story's context. For example, the mysterious traveler with a lantern speaks to the dogs in a language the girl cannot understand. This surreal addition adds mystery but also feels slightly «off,» as if the narrative logic has been disrupted by an external force. These surreal elements create a glitch-like effect, where the story

feels simultaneously plausible and unreal, much like a distorted photograph or fragmented dream.

3) Layering and Recursive Narratives

The Dialogue-Driven (Text Within Text) example demonstrates how AI's tendency to nest stories within stories can lead to a recursive, layered effect. For instance: The girl's imagined conversation with her future self introduces a meta-textual dimension. Her future self not only provides reassurance but hints at a future memory, creating a narrative loop where past, present, and future coexist. This recursive structure feels glitch-like because it disrupts the linearity of time, blending multiple temporal layers in a single narrative. I argue that, this glitch effect serves as a metaphor for the evolving relationship between humans and machines. It reflects the «sharded» nature of memory in the AI era. And with the further entanglement of AI and human, human's memory and recalling will inevitably shift too. Through more exposure to AI-generated content, and daily to day handling with sharded information.

3.The Role of Imagine Memories: visions

Currently in this project, the memory visualizations essentially serves as a tool to investigate further into the texture of the generated new memory, which is the mixture of the human's and the machine's. By assigning different parameters with respective determining ratio to different emotions and story patterns, then the texture and the other-worldly-ness of memories could be compared and remembered in a consistent way.

However, with this memory token, more possibilities, including engagement in the interpersonal world could be brought about:

1) Preservation and archiving of the Intangible:

Human memories are inherently fleeting and subjective. The visualizer token provides a way to anchor these ephemeral experiences in a concrete digital form, preserving the emotional and narrative essence.

2) A Medium for Memory Sharing

The memories visualizer will serve as a token, for each participant to enshrine this particular piece of imagine memory, as in the online social platform, where participants share their tokens as a form of digital storytelling. Memory are exchange, where participants can compare tokens, discuss

emotional nuances, and reflect on shared or contrasting experiences.

3) A Tool for Collaboration and Interaction

Co-created Memories: Participants can choose to blend their tokens with others, generating new hybrid memories and visualizations.

Interactive Features: Tokens could include dynamic elements (e.g., animations or soundscapes) that respond to user interactions, adding depth and personalization.

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Special thanks to:

bileam tschepe (elekktronaut), Blake Marques Carrington, The Interactive & Immersive HQ, audiodevout, Torin Blankensmith, supermarket sallad, Eusebi Jucglà, Digital Abstracts, Okamirufu Vizualizer. Thank each and every one of you for your amazing tutorials!

- JW -