

The Real Way Experts Remember What They Learn



Big thanks to the DALL-E team at OpenAI, all of the images in this article are created by DALL-E. How amazing is that?

Introduction

Over the last month, I became obsessed with learning how to remember things better. It started with frustration. I forgot what the book I had already read was about. I thought to myself it felt meaningless to keep reading more books if nothing stayed with me.

I also realized something important. One reason experts become genuinely good at a field is memory, and I do want to be an expert in many things in life.

So I went down the rabbit hole by reading books and watching videos. My goal was simple: understand how memory actually works and what we can realistically do to improve it.

This article has two parts:

1. What I learned about how memory works

2. Practical ways to actually remember what you learn

If you want a shortcut to the tips, you can go straight to part 2 or conclusion. Now let's begin!

Part 1: How Memory Works

1.1 Why We Don't Remember Early Childhood

"Have you ever wondered why you can't remember anything that happened before you were around three years old?"

***Moonwalking with Einstein* by Joshua Foer** has the answer for that.



The issue isn't that memories didn't happen. It's that they didn't stick.

When we're very young, our brain hasn't yet developed the tools needed to store memories in a stable, retrievable way. There's limited language, a weak sense of time, and no consistent narrative about the self. Experiences happen, but they don't get encoded in the same form we use later in life.

This is often called childhood amnesia.

I noticed this in my own life. When I look at a photo of myself at age three, I can't recall that moment at all. But if you show me a photo from when I was older, I can usually remember where I was, what happened before or after, and sometimes even how I felt.

Something changed. My brain learned how to store experiences in a way that lasts.

A useful analogy comes from chess.

1.2 What Chess Masters Teach Us About Memory



Studies on chess masters show something surprising. They don't win because they calculate more moves ahead than beginners. Instead, they recognize patterns from thousands of past games.

When shown a real chess position from an actual game, masters can recall it almost perfectly. When shown a random board with no logic or context, they perform no better than beginners.

Memory depends on structure. When information fits into a pattern you already understand, it sticks. When it doesn't, it fades.

Early childhood is like being shown random chess boards.

1.3 Short-Term vs Long-Term Memory

Memory is often divided into two systems.

Short-term memory is what you're actively using right now. It's limited and fragile. Long-term memory is where knowledge and experiences are stored over time.

A helpful analogy is cache and RAM because both systems constantly move information between a small, active workspace and a larger storage space.

Information that stays active, meaningful, or frequently used is more likely to be retained. Information that isn't gets dropped.

1.4 Memory Champions and the Memory Palace

World-class memory champions often use the memory palace technique.

You take a place you know well, like your childhood home, and place vivid images representing what you want to remember along a mental path through that space.



It works extremely well for recall. There's a popular Vox video where the man memorizes and recites an entire chapter of *Moby Dick* using this method.

Youtube video: **How I memorized an entire chapter from "Moby Dick" - Vox**

But I don't find this approach useful for me, especially in learning Machine Learning. I don't know how to meaningfully place "Bayesian logistic regression" on my bedroom wall.

More importantly, this technique is optimized for recall, not necessarily for understanding. Some memory champions can memorize large amounts of content without necessarily being able to use it. On the other hand, I actually want to understand the knowledge I put in my memory.

1.5 What Memory Loss Patients Teach Us

Patients with damage to the hippocampus often can't form new long-term memories. They may forget conversations or experiences shortly after they happen.

Yet when given the same puzzle repeatedly, they improve at solving it over time. When asked if they've done it before, they say no.



This shows that the brain can learn skills through repetition even when conscious memory is impaired. Practice alone can change the brain.

Part 2: Practical Ways to Remember What You Learn

2.1 Don't Accept Information Passively

2.1.1 The ultimate advice

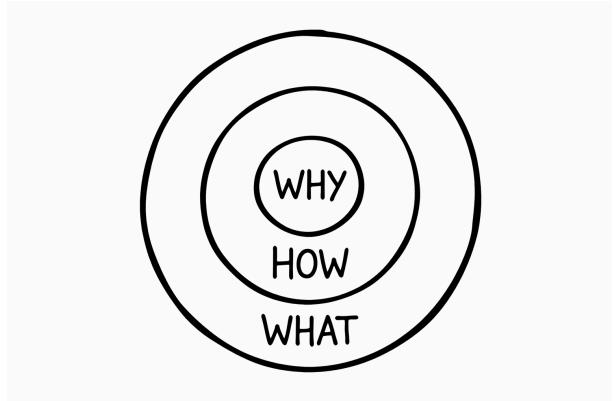
One of the most useful learning frameworks I came across comes from the physicist Richard Feynman.

Two ideas, in particular, stuck with me.

- The first is simple: **don't just accept information.**

When you encounter a new idea, don't treat it as something to memorize. Ask how it works. Ask why it's true. Ask what's actually happening underneath the words. Feynman believed that most people stop too early. They learn the label, repeat the explanation, and move on without ever checking whether they truly understand it.

- The second idea follows naturally from the first: **if you can't explain something clearly, you don't really understand it yet.**



If an explanation collapses the moment you remove jargon, that's usually where your understanding breaks. That's not a bad thing. It's a useful signal that tells you exactly where to slow down and think.

2.1.2 The advice from an OpenAI research scientist

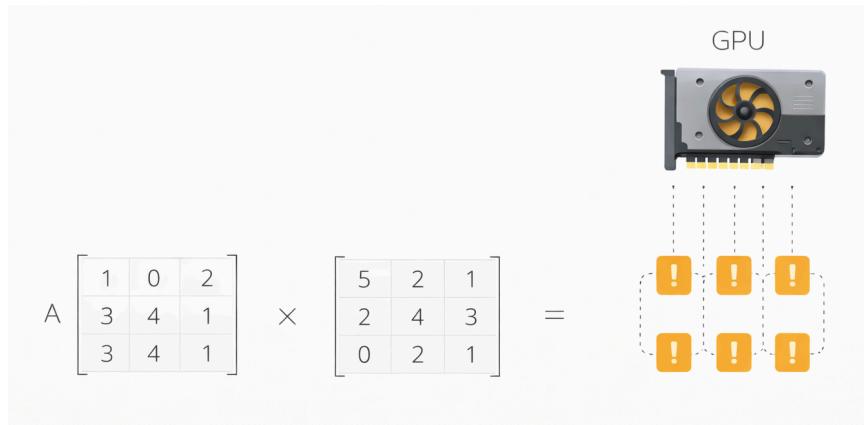
I saw this mindset very clearly again in an interview with **Gabriel Petersson**, an AI research scientist at OpenAI. I strongly recommend watching it.

Youtube video: **High School Dropout to OpenAI Researcher — Gabriel Petersson Interview (Extraordinary) - Sigil Wen and Extraordinary**

Gabriel talks about learning in a top-down way. Instead of starting with years of prerequisites, he starts with a real problem and works backward. He uses tools like ChatGPT to keep asking questions until the gaps in his understanding disappear.

He describes this as repeatedly filling in missing pieces. You keep asking questions until something clicks. And when it does, you try to explain it back, sometimes letting ChatGPT be the judge of your understanding.

Once you learn this way, ideas stick naturally, because they're connected rather than memorized.



2.1.3 An example

For example, say you hear: *Transformers were created to take advantage of GPU parallelism.*

Instead of moving on, stop and ask:

- How do transformers actually use GPUs?
- What is a GPU optimized for?
- What does parallelism mean here?

You might learn that GPUs are good at matrix multiplication, which is suitable for transformers. Then you ask:

- What is matrix multiplication?
- Where does it show up in transformers?

That leads you to attention mechanisms, linear layers, and why doing many operations at once matters. You're not memorizing terms. You're building understanding.

2.2 Build a System to Store What You Learn

I learned this from a video by **Matt D'Avella**. As Matt reads, he highlights and takes notes. After finishing the book, he transfers the ideas that matter most onto note cards. Then he organizes those cards by themes, essentially creating an "external brain."



Youtube video: **I learned a system for remembering everything - Matt D'Avella**

Matt is very honest about the downside. The process is slow. I don't think this system would work for me exactly as-is.

But that's not the real lesson I took from Matt's video.

The real lesson is the intentional organization of knowledge.

Matt's system forces him to decide what's worth keeping, rewrite it in his own words, and put it somewhere he can easily access later. He's building a place where important ideas live outside his head.

If something matters, you need to give it a home. For some people, that home is note cards. For others, it might be Anki, Notion, Goodnotes, or some people even build their own knowledge graph.

2.3 Repetition

After you have an external knowledge base, you need to revisit and practice it. Like chess masters, their memory develops after they've played thousands of games.

In order to lock a piece of knowledge in the long term part of your brain, you would need to revisit that piece of knowledge and try to explain it again in your own words.

2.4 Learning Faster

Now that you already know how to memorize, the next question is how to learn fast and read fast.

Some advice from **Dr. Salim Ahmed**, a medical doctor who shares learning strategies on YouTube:

- Skim fast on noise and slow down for dense or important ideas
- Summarize every chapter that you've read
- Spreeder - a software tool that can help increase the number of words you can read per minute.
- Practice what you learn from books. For example, reading a self-growth book alone won't change much, but applying the techniques from it is what actually helps you grow.

Youtube video: **How to Absorb Books 3x Faster in 7 Days (from a Med Student) - Dr Salim Ahmed**

But if you enjoy a book or if the topic matters to your long-term growth, slowing down is not a waste of time.

Re-read parts that click. Sit with ideas. If you enjoy it, there's no rush.

Conclusion

After spending time on this topic, my takeaway is simple.

The best way to remember is not to memorize. It's to question.

Ask why something works. Write it down in your own words. Store it somewhere easy to revisit. Then come back to it over time.

That's how information turns into knowledge.