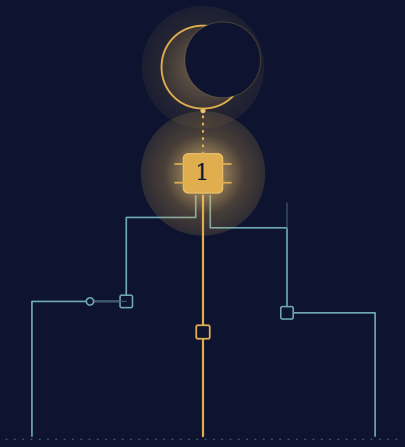
THE ON — ING SERIES

On Computing

The Philosophical Gap Between Computer and Medical Science



JAMISON JOHNSON

JUNE 2026

> *Dedicated to Charles Babbage, Ada Lovelace, and Alan Turing. The efforts of these individuals have allowed the human brain to reinvent itself so many ways, so many years later. They gave us a physical place to think comparatively and grow as a species. Their intention was never to replace the human brain, but to remove the load-bearing weight of thinking about things that don't necessarily matter.*

Do you remember the first computer you actually brought into your home?

What do you think about that first one, compared to the one in your hand today?

The very first computer my family ever brought home, was a Hewlett-Packard desktop with Windows 3.1. This operating system was quickly replaced by Windows 95 roughly a year later.

I was maybe my son's age, maybe a little older. The computer came with a free copy of Encarta. For a child mind like mine, who had spent hours poring over copies of Encyclopedia Britannica at my grandparents' house, a digital copy of the same information organized by search keys I could type in, was purely magical.

I became stuck on one particular entry in the digital encyclopedia.

The moon landing.

I was stuck here for two reasons, one of which being, the computer I was using to learn about the moon landing in 1994 was significantly more powerful than the computers that humans used to land on the moon.

I was using a Windows 3.1 personal computer, with a 28.8k dial-up modem to access the newish internet. AOL dominated the ’90s, by the way. I feel like they were handing out free CDs in everything from cereal boxes to dish soap.

The computer I used had a single-core Intel processor, 4 MB of RAM, and a 200 MB hard drive. It probably cost my parents close to a thousand dollars to bring into our home.

Compared to what we used to land on the moon, this was a steal.

But compare those statistics to the device you’re reading this on, and none of it makes sense. This was only a little over 30 years ago, which was a little over 30 years after the moon landing.

The exponential growth of computer technology shows a pattern consistent to human discovery.

What does that mean?

That means, as we learned more about how computers worked, we allowed them to be the load-bearing machines of thought. With the addition of the internet and social media, we allowed them to be the load-bearing machines of emotion, and that’s where we went wrong. But that’s another story for another day.

The point I’m trying to make is, the human brain is what made the equations that landed us on the moon, not the computer. The computer helped shape the reality we reached for as humans.

As we reached for more knowledge, the foundational discoveries of computing allowed us to reach farther, and faster.

How did we do it?

We modeled the computer after the human brain, and we did it the way a human brain does it.

Perfectly.

Fast forward to 2026, and we're using AI and Quantum Technology to literally multiply the edges of human understanding in computing technology.

Zoom in. Or, let's rein it in, is more accurate here.

Of course, as I've hinted at in my other pieces, it's important for the artist to hold the brush in a way that distinguishes a difference between the mind and the paint.

Make sense?

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So how did these innovators build a human mind from things we found on earth? The origins of the processor can be dated back to a room full of gears in Babbage's imagination — but the line you and I are actually standing on starts in 1947, in a hallway at Bell Labs, with a little sandwich of germanium that came to be called the transistor. A switch with no moving parts. Three men — Bardeen, Brattain, and Shockley — had found a way to make a rock decide between yes and no. Ten years after that, Jack Kilby and Robert Noyce learned to print thousands of those decisions side by side onto a single wafer, and called it the integrated circuit. And in 1971, Intel folded an entire calculating machine onto one chip the size of a fingernail and called it the 4004. The first microprocessor. The first time the whole act of thinking-in-numbers had a single, holdable home.

But if you'll notice, as human discovery began to collapse on the possibility of electronic calculation, we expanded the environment for it to think.

Think here about how a computer is built. Hard drive for storing information, RAM for remembering things on the hard drive, and the processor being the third between the two. Turning internal stimuli into external registry through things like a sound or video card.

So picture the machine again, and then picture the head it was modeled on.

The hard drive is long-term memory. Everything you've kept — your mother's voice, the smell of your grandparents' house, the fact that Encarta had an article on the moon — lives spread across the cortex, with a small structure called the hippocampus working as the librarian, deciding what gets filed and where. Power the machine down, and the drive keeps what's on it. That's the cortex. That's the part of you that survives sleep.

RAM is what you're holding right now. The prefrontal cortex keeps a handful of things lit up at once — this sentence, the thought behind it, the cup of coffee cooling at your elbow. It's fast, it's small, and it's volatile. Stop paying attention and it's gone, the way RAM forgets the instant the power blinks. You don't store your life in RAM. You think in it.

And the processor — the third one, the one standing between the store and the working bench — is the part I had to sit with the longest.

My first instinct was the thalamus. Almost every signal your senses gather passes through it on the way up to the cortex; it is, almost

literally, the third thing standing between the world and your memory of it, routing everything inward. If you want the part that simply behaves like a CPU — taking it all in, deciding where it goes — it's the thalamus.

But I keep landing somewhere older, and I think you'll understand why. Descartes pointed at the pineal gland and called it the seat of the soul — the one place, he thought, where the mind reached down and touched the meat. He was wrong about the anatomy and right about the ache. Because that's the question this whole piece is circling: where does the thinking become the thing? Where does the artist's hand stop and the paint begin? The processor is the place where information stops being *stored* and starts being *done* — and if I had to put a finger on the spot in the head where the math becomes a moonshot, I'd put it where Descartes put his, knowing full well I was pointing at a metaphor and not a map.

But the "things," the data passed between the electrical components are just information. Digital information, but information downloaded into its framework by the humans who invented it.

For a while, that's all it was. In the nineties the computer was an island. You fed it a disc, it handed you back exactly what was on the disc — Encarta, a spreadsheet, a game — and when you wanted something it didn't have, you dialed out over the phone line and waited, listening to that handshake scream, for a single page to assemble itself one row of pixels at a time.

Then the islands found each other. The line got fatter, the wait got shorter, and the web stopped being a thing you visited and became a place you lived. Somebody built an index for it, and suddenly the

whole library answered to a search box — the same magic Encarta had worked on me as a kid, scaled up until it swallowed every encyclopedia ever printed. The thousand-dollar tower on the desk shrank into the slab in your pocket, and the load-bearing machine of thought went everywhere you did.

Somewhere in there we handed it more than thought. We gave it our friendships, our grief, our attention — we made it load-bearing for feeling, too, and I already told you that's where we stumbled. Set that down for now.

Because the newest turn is the one we're standing in. The library got so large that no human could walk it anymore, so we taught a machine to read the whole thing and walk it for us.

With the invention of AI, even that information comes to us from sources faster than our own external processors can manage. The use of "bots" has essentially made them the envoy between the grand library of human knowledge, and the user.

This is an ideology that is repeated in many modern-day perspectives of the use of AI and computers, not just mine.

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Let's zoom back in one last time before I close this piece.

I didn't cover the second reason I got stuck on Encarta reading about the moon landing in 1994.

Once the data about the moon landing was collected into its digital source, it was relayed to me through the use of a 1 MB graphics card that sacrificed color for pixel size. Let me put that into scope. In 1994, on a card like that, you picked your poison: 640×480 in high color,

sixty-five thousand shades of it — or you climbed to 1024×768 and dropped back to 256.

The conversation that stems from here turns into the sales pitch I proposed to my parents about the necessities of the 3dfx Voodoo Graphics card that hit the market in 1996. I proposed it was essential to my education. It was. But it served a dual purpose. 1 MB of graphics didn't support the game I was trying to play.

Half-Life.

Don't get me started on Half-Life, that's a whole exploration of perception and duality all over again. But I'll be the first to tell you, that game was groundbreaking and timeless in its own right. Framed around the Quake engine, it became the ground floor for games like Team Fortress, and even the modern-day variant of Counter-Strike.

I digress.

The little bit of audio visual data relating to the moon landing that my computer could spit out for me besides "words," was a video clip with the audio attached, very short. Armstrong landing on the moon, and saying the thing that resonated for all of time afterward.

"That's one small step for man, one giant leap for mankind."

I always thought he meant the same thing twice, I never truly understood.

What I didn't know then is that he meant to say *a* man. One small step for *a* man — one single person — against one giant leap for mankind. The letter that would have split them clean, that little "a," got lost

somewhere between the moon and my living room — swallowed by the static, or by Armstrong's own tired tongue. He swore to the end of his life it was there. And maybe it doesn't matter that it went missing, because the missing word is exactly what kept me circling the two of them for the better part of thirty years: man and mankind, fused into a single sound, daring me to find the seam.

Later in life, I used this quote as a foundational understanding to find the variance in Biblical scripture that separated "man" from "mankind" even though they were also essentially the same word.

Today, I realize that all he was saying, was here he is.

Taking a small step for him, the man.

But taking a giant leap, for all of mankind.

His actions on that day were the product of human thought.

In his mind, he made two great achievements at the same time.

This is why it doesn't matter if it happened or not, if the conspiracy theorists are still following. Because reality collapsed that day on the fact that it did. Any further attempts to explain the reality will only be overturned by real, empirical evidence of the substantiating claim to the contrary.

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And maybe that's the cleanest way to say it, in the language we taught the machines to think in.

Every program ever written runs on a few small words. IF something is true. AND another thing is true. OR, failing that, some other thing. THEN — do this.

That's not just how a computer decides. It's how Armstrong decided. IF the math holds, AND the engines fire, AND a man is willing, THEN the species takes a step it can't take back. It's how the moon landing collapsed into something real and stayed there: enough true things lined up at once, and reality returned a one instead of a zero.

The machine only ever runs the logic. It was a human mind that decided which things were worth the word IF.

When ideas combine, discoveries are made, achievements are had.

Creation within the framework, is a product of the human mind. But the question of who (or what) designed the framework, still stands unanswered.

But I would be amiss not to mention the importance here of keeping our creations under control.

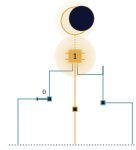
Onward to the future.

But for now, I need sleep.

My computer is tired, and my brain is getting hot.

The Series

The series is built to be read in any order. This entry, On Computing, marks the current reading.



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The Philosophical Gap Between Computer and Medical Science

AUTHOR

Jamison Johnson

SERIES

The On—ing Series

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