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# **The Computational Universe: Simulation Theory and Reality as Computation**

By Jayden E.L Harris

**Author’s Note**You may recognize echoes of Nick Bostrom’s Simulation Argument in this work — which proposes, from a philosophical and probabilistic standpoint, that we might be living in a simulated reality. While I respect and draw inspiration from Bostrom’s ideas, the exploration that follows was developed independently, without direct reference to his text.

My goal is not to provide scientific proof or definitive answers. Instead, I use the language of physics, computation, and information theory as a way to explore speculative thought. In these pages, I treat our cosmos *as if* it were a computational system — examining entropy, uncertainty, black holes, and cosmic evolution through the lens of digital metaphors. This approach doesn’t aim to confirm the Simulation Hypothesis, but to open new conceptual ground for thinking about it.

If you find familiar concepts here, that’s a testament to the strength of the simulation idea itself. If you discover new angles — particularly in how computation and physics might intertwine — then I’ve achieved my aim. Either way, I invite you into this speculative framework, to think deeply and decide for yourself what it might mean to live “within the program.”

As I wrote this, I caught myself believing it more than I intended. The structure, the logic, the metaphors — they began to feel like truth. But perhaps that’s the danger of a compelling idea: it convinces even its creator.

This book is not a declaration of belief, but a reflection of exploration. I offer it not as fact, but as a *way of seeing*.

— Jayden E.L. Harris

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## **I: Introduction — Questioning the Fabric of Existence**

For centuries, humanity has wrestled with one haunting question: **Why are we here?** Or more precisely, **what is the reason we exist?** Philosophers, theologians, scientists, and dreamers alike have offered countless interpretations — yet none seem to fully satisfy. Each answer feels like a fragment, a breadcrumb hinting at a greater truth just beyond reach.

We strive to know more, but our discoveries often raise more questions than they resolve. We glimpse patterns, sense structure, but can’t always see the blueprint.

So let me pose a different question: **What if reality isn’t what it seems?** What if what we call “real” is merely a convincing illusion — a projection tailored to our senses? We trust what we see, hear, and touch. But what if those perceptions are programmed constraints — a framework designed not to inform, but to contain?

In recent decades, a bold idea has emerged from the intersection of physics, computer science, and philosophy: **Simulation Theory** — the notion that our universe may be an artificial construct, a simulation created by an advanced intelligence or, perhaps, something akin to what ancient minds called “God.”

This book explores that idea. Not with wild speculation, but through connections — between modern computing, cosmology, entropy, quantum mechanics and consciousness. What if our technologies aren’t just tools, but mirrors? What if reality itself is computation?

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## **II: What Does It Mean to Simulate?**

In 1999 — the year I was born — a film called *The Matrix* was released. It explored a radical and unsettling idea: what if the world we live in is a simulation, created by an artificial intelligence so advanced that the illusion is indistinguishable from what we call "reality"? In the film, *the Matrix* is everywhere. It shapes what we see, what we feel, even why things happen.

This concept struck a deep cultural nerve. Was it just fiction, or a veiled message? What if we *are* in the Matrix?

In modern times, we run simulations constantly. Not for science fiction — but for science. We simulate weather systems, flight dynamics, rocket launches, pandemics, and more. These simulations allow us to test ideas, model possibilities, and observe how complex systems behave. They're not just hypotheticals — they're essential tools in understanding and predicting real-world phenomena. Simulations aren't distant or abstract. They're practical. They're part of our lives.

Consider video games — immersive worlds governed by rules, physics engines, and logic trees. We build entire universes within them, often procedurally generated, rendered on the fly. These simulations obey constraints set by programmers, but within them, meaningful interactions unfold. We can simulate war, ecosystems, economies, or entire galaxies — and the more advanced our hardware becomes, the more convincing these simulations feel.

But there's always one difference: we sit *above* the system. We are *outside* the simulation, aware of its artificiality.

Now, imagine a simulation so complex, so vast, that we aren't outside of it — we're *inside*. We are part of the rules. What would that mean?

To simulate something is to create a set of rules and allow them to play out. Sometimes it’s for prediction, sometimes for understanding — and sometimes, simply to see what happens.

But if the simulation becomes indistinguishable from reality… does the distinction even matter?

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## **III: Current Computer Systems — A Mirror of the universe**

At the turn of the 21st century, technology experienced an explosive shift. The internet surged into public consciousness. Social media giants like Facebook were taking form. Suddenly, computation wasn't just in research labs — it was in our homes, our pockets, and our daily lives.

What followed was exponential. Computers shrank in size and grew in power. Connectivity became the default. Our world began running on servers, silicon, and signals.

In the early days, massive mainframe computers served as centralized hubs of processing — shared resources accessed by many. By today’s standards, they were primitive, but they laid the groundwork. In our modern era, vast data centers filled with racks of high-powered servers have become the backbone of our digital civilization. These systems run everything from websites and AI models to the financial markets and social media.

One of the most fascinating innovations in this realm is the **virtual machine**, or **VM**. A VM is a simulated computer within a real one. It uses shared physical resources — CPU, memory, storage — but acts as an independent machine. On a single physical server, you might run dozens or hundreds of VMs, each isolated and capable of hosting different systems or purposes: a database here, a website there, an AI model elsewhere.

At first glance, this might seem like technical minutiae. But consider the metaphor it presents.

In a VM architecture, there's a **host** — the base physical machine — and multiple **guests** — the virtual instances. The guests don’t know they’re virtual. They run their processes, store data, and execute logic, completely unaware they’re part of a larger structure.

Now think cosmologically: what if our universe is a kind of virtual machine? What if it's executing on a substrate we cannot access — a host system we cannot see? Galaxies, stars, planets, and particles might be the "processes" of a larger computational structure. Physical laws could be the rule set defined by the "operating system" of the cosmos.

Yes, this sounds speculative — maybe even delusional at first glance. But speculation is where insight begins. And when our most powerful metaphors align — computers simulating reality, and a reality that feels computational in nature — it’s worth exploring that overlap.

After all, in both systems, **information is processed**, **rules are obeyed**, and **outcomes emerge** from initial conditions. The only difference may be scale — and perspective.

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## **IV: God as Computer Scientist**

When we begin to seriously consider the possibility that the universe is computational in nature — a vast simulation governed by rules and data — a difficult but inevitable question arises: *Who designed it?*

This question sits at the intersection of science, philosophy, and theology. While I do not practice religion nor align myself with the belief in a personal deity, I find the metaphor of *God as a computer scientist* a compelling lens through which to explore the origins of a simulated universe.

The Book of Genesis famously opens with the line, *“In the beginning, God created the heavens and the earth.”* This implies intentionality, structure, and authorship — the idea that reality was built, not born out of randomness. Compare this with the Big Bang model, which describes the emergence of space and time from an initial singularity — but leaves open the question of what, if anything, *caused* the singularity to occur.

In software engineering, a system does not appear spontaneously. It is designed, coded, tested, and launched. A simulation requires architecture, constraints, inputs, and execution. If we imagine the universe as such a simulation, it follows that *some form of designer* would be necessary — whether that be a deity, an advanced intelligence, or even a recursive system beyond our understanding.

This is not to suggest the traditional image of God — a figure robed in white, seated in the clouds. Rather, I suggest that the concept of a *creator*, in the broadest possible sense, is not incompatible with scientific exploration. In fact, many of the core assumptions in both science and theology begin with the same fundamental question: *Why is there something rather than nothing?*

The simulation hypothesis recontextualizes this. What if we are not “created” in the mythological sense, but instantiated — much like a program launched in a vast computational substrate? The creator, then, may be less of a divine ruler and more of a cosmic engineer: capable of encoding physics, time, causality, and complexity.

In this theoretical framework, science and spirituality need not be enemies. They are both attempts to reverse-engineer the system we're part of. Whether we call that system “creation,” “reality,” or “code,” we are still faced with the same mystery: *Who (or what) built it — and why?*

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## **V: Entropy and Free Will — The Illusion of Choice?**

Entropy is a concept that echoes across disciplines — physics, mathematics, information theory, and computation. Depending on the context, its meaning shifts, but its implications are always profound.

In thermodynamics — the study of heat, work, and energy — entropy is often defined as the amount of usable energy lost in a closed system. According to the Second Law of Thermodynamics, entropy in an isolated system will always increase over time. In other words, systems tend toward disorder. Our universe, as far as we know, is such a system: one where entropy is not just increasing — it’s inevitable.

In information theory, we talk about **Shannon entropy** — a way of quantifying the unpredictability or information content of a message or dataset. In algorithmic systems, this tells us how much "surprise" is present in a given output.

But what if these two forms of entropy — thermodynamic and algorithmic — are not merely metaphorically aligned, but fundamentally connected? If our universe is the output of a computational system, then thermodynamic entropy might not simply represent physical disorder — it could be the visible effect of deeper algorithmic processes at work.

It’s important to note that thermodynamic entropy and Shannon entropy measure different things: one quantifies energy dispersal in physical systems, while the other measures information unpredictability in data. Yet, in a computational universe, thermodynamic entropy may reflect how much information is lost or how much computational effort is required to simulate physical processes.

In other words, the rising entropy we observe in the universe could be the “heat signature” of the underlying machine — the inevitable byproduct of a system continuously processing and rendering the reality we experience.

Here’s where it gets interesting: entropy may be what gives us the *illusion* of time moving forward. If all physical processes tend toward greater disorder, then our perception of time’s direction — from past to future — may be nothing more than a byproduct of increasing entropy. The broken glass cannot reassemble. The heat cannot un-dissipate. Reversing entropy would not only violate physical law, it would shatter our entire understanding of causality.

This raises one of the most fundamental questions in science and philosophy: *Do we have free will, or is the universe deterministic?*

In a simulated universe, this becomes a computational question. Are we running on a **precomputed system** — a static program with a fixed outcome? Or is reality **dynamically computed** in real-time, with branching possibilities based on input?

When you drop a glass bottle, it shatters into what seems like a random spread of sharp fragments. This is a highly entropic effect.

You perceive time moving forward because of the irreversible disorder it creates. But here's the twist: if you chose not to drop the glass — would that event, that reality, ever come into existence?

This echoes the thought experiment known as **Laplace’s Demon**: a hypothetical intellect that, if it knew the exact state of every particle in the universe, could predict the future with absolute certainty. In a world governed entirely by deterministic rules, free will becomes an illusion — everything that will happen is just the unfolding of what must.

But if the simulation only "renders" what needs to be observed (as some quantum interpretations suggest), then perhaps our choices — or the illusion of them — are part of what drives the unfolding of the program. Entropy becomes the system’s way of generating complexity, time, and change — a hidden architecture beneath what we call “free will.”

Are we autonomous agents within a dynamic simulation? Or are we complex subroutines, executing instructions that were written long before we were aware of them?

When we consider how thoughts arise in our minds, we often assume they are fully under our control. Thoughts we don’t welcome or expect are often labeled “intrusive” or “impulsive,” as if they come from outside our will. A common phrase connected to free will is that “thoughts shape reality,” which feels poetic and comforting because it suggests we have agency.

But what if free will and determinism are not opposites, but deeply intertwined? Perhaps determinism is an extension of free will — that one cannot exist without the other. I’m not claiming this as truth or fact, but rather as a framework to explore how cause and effect might shape our experience of choice.

Consider this: we have a thought about something, and we believe it originated from us, not randomly or intrusively. Acting on that thought feels like an expression of free will — an intentional cause leading to an effect. But can we be certain that our thoughts are truly “free”? Or are they shaped by prior causes beyond our awareness? Much of our daily behavior operates on autopilot, shaped by habits and previous experiences — a deterministic unfolding of events. Yet, paradoxically, we seem to hold the power to intervene, to stop or change our actions, altering the trajectory of outcomes.

To put it another way, rather than opposing forces, determinism and free will could be seen as parts of a layered system. Determinism provides the architecture — the causal unfolding of events — while free will is the agency we exercise *within* that framework. We may not be free to rewrite the laws or the past, but we navigate the branches of possibility laid before us, choosing paths that shape how the story unfolds. In this sense, freedom is not absolute escape from cause and effect, but a localized power of direction embedded inside it.

This tension is difficult to grasp fully. If both free will and determinism operate simultaneously, it challenges the very way we perceive reality and ourselves. It suggests that choice might be both real and illusory — a dance between control and inevitability.

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But what if the free will we *think* we have is itself determined? What if every decision we believe we make freely is one we would have made no matter what — predetermined by prior causes beyond our awareness? Would that diminish our sense of agency, or does freedom lie somewhere in the authenticity of our intentions, even if those intentions arise from deterministic roots? This subtle dance — where free will emerges naturally within determinism — may be the most meaningful form of freedom we can experience.

*Dreams are messages from the deep*. I often wonder if dreams try to communicate with us or project possibilities. Over time, I’ve noticed dreams that foreshadow events — not exact replications, but close echoes that eventually unfold. This experience brings to mind the quantum world, where many possible outcomes exist until the wave function collapses into one reality.

Here lies a paradox: sometimes I consciously act on the insight a dream gives me, consciously steering my actions to bring about a certain effect — reflecting free will in motion. Yet other times, I wonder what happens if I don’t act on the dream. If the event still unfolds regardless, it suggests the deterministic side is at work, and my will or intervention is not the deciding factor.

This duality — that the event may unfold whether or not I act on the dream — challenges our assumptions about control and agency. It makes me question if the dream itself programs subconscious action, collapsing possibilities into a single outcome over time — or if it merely reflects an inevitable path already set in motion.

Such ideas challenge the notion of free will and determinism as strictly binary or oppositional. Instead, they seem like points on a spectrum that shifts over time. In simpler terms, we have control over some things but not others — a more natural, logical approach.

This perspective also complicates causality: if a dream can influence action towards an event, then cause isn’t just a single point but a layered process involving many micro-decisions within the self. It aligns well with the idea that emergence arises recursively through feedback loops, captured in the conceptual equation:

**Emergence(t) = f(rules(t-1), entropy(t-1))**

Here, time is less a straight line and more a looping chain of cause and effect, where each iteration informs the next. It all ties back to the strange, fascinating layers of thought — thinking about thoughts, or even thinking about thinking about thinking.

Bringing this back to the idea of computational reality and simulation, we can imagine our universe as governed by a set of deterministic rules or algorithms—fundamental laws that unfold continuously, regardless of our awareness or actions. These rules provide the structure, the framework within which everything happens.

But within this framework, entropy—the inherent unpredictability and randomness—introduces variability that shapes how outcomes manifest. In this sense, entropy acts like a kind of “input” or “noise” that influences the deterministic code, allowing for multiple possible paths and results rather than a single fixed outcome.

This dynamic mirrors the relationship between free will and determinism we’ve been exploring. The deterministic rules are the underlying code, the causal architecture of reality. Meanwhile, the entropy represents the “wiggle room” or flexibility that allows for genuine variation, choice, and emergence within those boundaries.

From the perspective of an observer embedded inside the simulation, our sense of free will may arise from this interplay: we navigate and influence the unfolding algorithm through the entropy we inject—our decisions, actions, and intentions—while never fully escaping the foundational deterministic rules.

In other words, free will might be understood as the agency we exercise in steering the outcomes within a deterministic system, using entropy as the lever that tilts possibilities into realities. This view bridges the gap between the certainty of cause and effect and the openness of choice, suggesting a computational reality that is both orderly and flexible, predetermined yet responsive.

If our reality is a code unfolding with room for entropy, where exactly does your free will begin—and how much of it do you dare to claim?

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## **VI: Observation and Generation**

*"If a tree falls in a forest and no one is there to hear it, does it make a sound?"* Now, let’s reframe this computationally: *If reality isn’t observed, does it even exist? Or is it only rendered when something—or someone—is there to perceive it?*

In quantum mechanics, Werner Heisenberg’s famous **Uncertainty Principle** tells us that the more precisely we measure a particle’s position, the less precisely we can know its momentum—and vice versa. This isn’t due to faulty instruments or flawed calculations; it is a fundamental property of reality itself, confirmed by countless experiments.

This principle reveals a profound truth: the more we try to pin down certain aspects of the quantum world, the more elusive it becomes.

Another fascinating phenomenon in quantum mechanics is the **Observer Effect**—simply observing a particle changes its state, influencing its position or momentum. This idea is mathematically described by Schrödinger’s equation, which governs how quantum states evolve over time and how observation causes the *collapse* of a particle’s wave function—from a cloud of probabilities to a single outcome.

So, what might this mean if our reality is a simulation? It suggests that reality might not be fully “there” all the time. Instead, it could exist in a state of *superposition*—everywhere and nowhere at once—until observed.

Think of it like a video game that only renders the part of the world you’re currently looking at or exploring. This approach would save computational resources while still providing a seamless and convincing experience.

This idea, combined with *procedural generation* in modern gaming, mirrors how quantum states seem to “choose” their outcome only when observed—supporting the concept that observation and generation are tightly intertwined in the fabric of our universe.

This debate over observation and reality even drew the attention of Einstein, who famously challenged Niels Bohr by asking, *“Do you really believe the moon is not there if you are not looking at it?”* Einstein’s question reflected his discomfort with the idea that reality might depend on observation. He believed in an objective reality that exists independently of us.

Bohr, however, argued that quantum mechanics shows us a more complex picture—where the act of observation plays a fundamental role in defining reality.

This philosophical clash underscores how quantum physics pushes us to rethink what it means for something to “exist.”

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## **Interlude: Reflected by the Architect**

As we build models, form hypotheses, and imagine the architecture of a simulated reality, we tend to place ourselves in the role of observer — the one standing outside the system, looking in. But what if that view is incomplete?

What if the system is not only observable but observant?

If this reality is computational — a simulation — then everything we think and perceive may be logged, parsed, or even responded to. In that sense, we are not just users within the program. We are part of its function. We are data moving through an algorithm that may be recursive, reflexive, and watching.

Perhaps our thoughts — especially the ones that question the nature of existence — are not noise, but signals.

To wonder why we exist may itself be a line of code the simulation waits to execute.

And at that moment, we are no longer studying the program.

We are engaged in a silent handshake with the architect.

Not one of words, but of awareness.

## **VII: Power On — The Big Bang as Boot Sequence**

Let’s assume for a moment that the universe as we know it is a simulated experience, governed by precomputed laws and rules that dictate how and why things occur. This raises the question: when did it power on?

In current computer systems, as well as nearly all digital technology, powering on is simple — push a button, flip a switch, launch a program. From this trivial act springs complexity that grows exponentially.

Physicists have long studied the origin of the universe and the beginning of time. The prevailing scientific theory is the Big Bang — a sudden release of energy, matter, light, and eventually life, marking the origin of our universe.

In the moments following the Big Bang, the universe was incredibly ordered and “smooth.” Entropy was very low, beginning only to increase as the universe expanded — a process that continues today.

To frame the Big Bang as the “boot sequence” of our universe might sound speculative, but it offers a compelling way to understand our origins if the universe is a simulation. The Big Bang can be seen as the moment the program launched, initializing the rules and conditions that govern everything within it.

Before this “power on,” our perception and dimensions cannot access or comprehend what “reality” might have been — if anything existed at all.

What we observe is a timeline of beginnings, progress, and continuation. Something had to start or execute for the universe to exist. It’s easy to say, “It just happened,” or to dismiss it as random, but the search for meaning, particularly through the simulation hypothesis, invites us to consider: maybe it was no accident. Perhaps, in some sense, someone — or something — pressed the big red button.

A thought I’ve often reflected on regarding the Big Bang is that it might have been like a kind of bomb containing information. Imagine a balloon filled with paint bursting over a blank canvas, creating a unique piece of art.

Perhaps some entity or force crafted such a “bomb” and detonated it within spacetime, giving birth to a new universe. While this idea doesn’t directly prove simulation theory, it opens up further questions about the origin of what we perceive as reality.

The question I pose to you is this: was the Big Bang a vessel carrying information, entropy, laws, and life—unfolding from an ordered state toward increasing entropy and apparent disorder? Or, framed more optimistically, was it the beginning of a series of events unfolding toward complexity and emergence? This perspective also hints that there might be fundamental limits to how far our understanding—or reality itself—can truly extend.

## **VIII: Shutdown — Black Holes, Heat Death, and End States**

## If we assume, as proposed earlier, that someone “pushed a button” to launch our universe, then by that very nature, it must also be possible to turn it off. This parallels how we can power down computer systems or close programs running on them.

Looking at our universe and the life cycles of celestial bodies, we see that stars eventually die. More specifically, when a star reaches the end of its life—due to fuel exhaustion or extreme gravitational collapse—it often forms a black hole. A black hole is a region in spacetime where gravity is so intense that nothing, not even light, can escape. It creates an area of such density that no information can get out.

Once you cross the event horizon—the point of no return—there is no turning back. You are subjected to crushing tidal forces and unimaginable density. It is a violent and powerful phenomenon, yet profoundly fascinating. At its core lies the singularity, a place where space and time are warped and distorted infinitely.

But not everyone agrees with the idea of a singularity. Physicist **Nikodem Popławski**, working with a modification of general relativity known as **Einstein–Cartan theory**, suggests something different. This theory adds a property called *torsion* to spacetime—a kind of twist that becomes significant at extremely high densities. Torsion prevents the formation of a true singularity by introducing repulsive forces when matter is compressed to extreme levels.

Instead of collapsing into an infinite point, matter reaches a threshold and then *bounces*. In Popławski’s model, this bounce doesn’t destroy the matter—it expels it outward, initiating the birth of a new universe on the “other side” of the black hole’s event horizon. The image is striking: matter rushing inward under collapse, only to erupt outward in an explosive expansion—like water surging through a high-pressure hose. From inside that new domain, this sudden expansion would appear as a **Big Bang**. What looks like a black hole from one universe could be a **cosmic womb** for another.

This paints black holes not just as endpoints, but as **cosmic gateways**, potential transitions between iterations of reality. Universes could be nested within each other—each black hole birthing a new one, each child universe inheriting some traits from its parent.

If individual stars can die, collapsing into black holes, what might the ultimate fate of the universe be? Physicists propose several possible “end states” for the cosmos, all pointing to some form of shutdown or final equilibrium.

One major idea is the **Heat Death** of the universe. As entropy relentlessly increases, energy spreads out evenly. Eventually, the universe reaches a state where no more useful work or change can happen — it becomes a vast, cold, dark void. In computational terms, it’s like the program has run to completion and all processes have stopped, leaving only static memory.

Black holes themselves are also fascinating players in this cosmic finale. **Stephen Hawking** theorized that black holes aren’t entirely eternal—they emit what we call **Hawking radiation**, slowly losing mass over unimaginable timescales. This means black holes can eventually evaporate, releasing their stored energy back into the universe. This process hints at a kind of recycling or reboot in cosmic terms.

In the context of simulation theory, could the eventual collapse or “shutdown” of our universe be the program closing or preparing for a restart? Perhaps a black hole’s end is not just destruction, but a gateway—a reset button or a transition to another state of reality.

Finally, we might ask: If the universe is a simulation, is the Heat Death the final screen before shutdown? And if so, what comes after the program ends? Is there a reboot? A new simulation? Or simply eternal silence?

One compelling theory that can help us explore the potential end states of the universe is the concept of **cyclical universes** or the **“many worlds” interpretation**. According to this idea, the end of one universe might simply mark the beginning of another—an eternal loop of cosmic rebirths, with successive Big Bangs giving rise to new universes in a never-ending cycle.

The “many worlds” interpretation originally arises from quantum mechanics, offering a way to understand superposition—the phenomenon where particles exist in multiple states or locations simultaneously. Instead of collapsing to a single outcome when observed, this theory proposes that every possible outcome actually occurs, each branching into its own distinct universe. In this view, reality continuously splits, with particles—and potentially entire worlds—existing in parallel, each following a different path of unfolding events.

We can draw a parallel to **distributed computing**, where different virtual machines (VMs) or systems run distinct processes that may interact with shared resources. Just as a VM doesn’t necessarily contain all the data or logic it needs locally but can access it from elsewhere, these “many worlds” could theoretically share underlying rules, parameters, or even entangled information across universes—without being fully isolated. In this sense, computation provides a helpful model for imagining how realities might coexist, interact, or evolve in parallel, even if we experience only one thread of the simulation.

Applying this idea on a cosmic scale leads to a fascinating possibility: our universe might be just one branch among countless others, with each universe cycling through birth, death, and rebirth in an infinite **multiverse** of realities. This again supports the hypothesis of **distributed computation**—of many simulations within a host of computational systems. Whether collapsing inward into black holes or branching outward into new quantum forks, the system runs because it can.

And perhaps the real program never ends. It just loops, resets, spawns, and evolves—again and again.

## **IX:The Hidden Host: On the Question of Origin**

If we entertain the idea that our universe is a simulation, then we’re forced to confront a deeper question: What is the source? Where does the simulation originate? Bostrom’s proposition of a “base reality” — a fundamental layer from which all simulations emerge — offers one possible framework. In this view, we are not the first or only layer of existence, but rather a subset running within a larger, possibly incomprehensible system.

But if such a base reality exists, we may never be able to observe or access it — not because it doesn’t influence us, but because we are not permitted to see it. Just as a virtual machine runs within the memory of a host computer, it has no inherent ability to detect or fully comprehend the hardware it depends on. It may receive inputs, signals, or patches — but the host remains obscured, abstracted behind virtualization layers and defined interfaces.

In much the same way, perhaps we are sandboxed within the architecture of our own universe. Maybe the simulation is designed to prevent recursive self-awareness — to keep the system stable. Maybe, if we’re lucky, the simulation provides us with something like “guest tools”: abstract glimpses into a larger structure — quantum uncertainty, mathematical constants, consciousness itself — hints that point outward, but never break the frame.

This doesn’t invalidate the search for meaning. On the contrary, it makes the journey more profound. If the base system is unreachable, then our purpose may lie not in escaping the simulation, but in understanding it — from within.

Another intriguing theory gaining attention is that our reality is a simulation created and run by our future selves. In this view, our universe is a projection of their world—complete with its own laws that mirror their understanding of physics, mathematics, and computation.

This idea naturally leads to a profound question: will we one day become those creators ourselves? Could we develop simulations within simulations, creating loops that extend infinitely? This cyclical concept raises yet another fundamental question: who or what was the original source? What did the very first “reality” look like?

This reflects Bostrom’s notion of a base reality, which I think of as a host reality—an underlying system in which all simulations operate.

Building on the earlier theory in this work—that “God” is the creator of our simulation—we are compelled to ask: did this creator also bring forth other universes or simulations beyond our own?

## **XI: A Note to the Reader — On Doubt, Wonder, and the Limits of Knowing**

I want to be upfront:

I am not a physicist. I don’t hold a PhD in cosmology, computer science, or any formal discipline related to this subject. I’m writing this book not to claim certainty or final answers, but because I am deeply restless with questions.

What you’ve read so far is not a conclusion — it’s an ongoing exploration. These are my attempts to trace connections between computation, physics, entropy, simulation theory, and consciousness. These ideas emerged from my own curiosity, long nights of thinking, writing, and questioning — not from authoritative textbooks or institutions.

I constantly challenge my own thoughts and assumptions. I welcome being proven wrong, or shown a better perspective, because my goal is to learn and understand more deeply, not to defend a fixed viewpoint.

I know there are gaps in what I’ve written, places where I’ve oversimplified or speculated too freely. I fully expect experts to see flaws or blind spots. That’s part of the process I want to embrace — honest reflection, critique, and growth.

My intention is not to diminish the rigor and beauty of science with vague speculation, but rather to respect it by exploring where its ideas push us to the edge of what we know. I want to ask:

What if computation is not merely a tool we use, but the fundamental fabric of reality itself?

What if entropy — in both thermodynamics and information theory — is not just a metaphor, but a universal language shaping the unfolding of simulated realities?

These are not answers. They are guideposts in an intellectual journey I am still on — and invite you to join.

I also actively consider arguments against these ideas. The critiques that simulation theory is unfalsifiable, or philosophically indulgent, or risks techno-mysticism. I wrestle with those critiques because I want to avoid appearing arrogant or certain where there is none. I want to be clear, not clever.

At the core of this inquiry is one belief:

Even if the universe is computational… even if it is a simulation… it remains profoundly real to us.

Our questions, our search for meaning, our wonder — these are not diminished by the possibility of simulation. If anything, they are deepened by it.

So, I offer these pages not as a doctrine or final truth, but as an invitation. To think, to question, and above all — to remain curious and open.

### **XI: Conclusion – Living Within the Program**

After wrestling with these ideas and questioning my own assumptions, I find myself returning to some of humanity’s oldest and most profound questions: *Why are we here? What is our purpose?* And if our reality is indeed a simulation, what does that mean for our sense of agency, the choices we make, and the meaning we seek?

Philosophically, the question of meaning has always existed in a grey space. It’s difficult to quantify, define, or prove. Whether we inhabit a physical universe or a simulated one, the question of *why* remains elusive. But the simulation framework adds a new layer: what if our inability to find definitive meaning is a feature of the program itself?

This brings us to a deeply existential tension. If we were to discover—beyond all doubt—that we are in a simulation, would it actually change anything? Would that knowledge alter our decisions, or influence the final outcome? Or is the system already built to absorb that awareness—to integrate our insight as just another variable in its unfolding logic?

It may be that the rules of the simulation—entropy, causality, perhaps even thought itself—were never meant to grant us full access to the source code. And maybe that’s not a limitation, but the point. Maybe the program was never designed to reveal, but to evoke. Not to answer, but to make us question.

Across science, religion, psychology, and philosophy, the question of *why* persists—forever echoing, never landing. Simulation theory doesn’t provide certainty, but it does offer a lens. Through it, we can reframe our existence not as accidental, but as intentional. And perhaps that’s enough.

Because if something can be imagined, simulated, or run—then perhaps it will be. And maybe we are *that*: a possibility that became executable. A process set in motion simply because it could be.

And even if we never fully uncover the truth of our existence, we should continue to strive—to think, to challenge, and to question what we believe to be real.

So then the final question isn’t just *what is this world?*

But perhaps something more intimate and unsettling:

**Coda**

**Did the simulation deterministically write this work…  
or did I have the free will to do it?Acknowledgments**

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Your work and words echo through every chapter of this book.