Acta Scientific COMPUTER SCIENCES

Volume 7 Issue 8 November 2025

Perspective

Computer as a Spiritual Tool (CAST) 1 – Viewing Yogacara Through the Computing Lens

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Received: September 29, 2025

Published: October 09, 2025

Abstract

Death is an inevitable fate of human beings; yet, everyone has death anxiety. Yogacara explains that life is a projection Alaya-vijnana; hence, death is an illusion; therefore, there is no death but an endless progression of life. However, Yogacara, being an ancient Indian philosophy, is not easily explained today. In this essay, I attempt to explain Yogacara using computing analogies. This is likely to be more palatable by members in the current society and does not have to grapple with the intricacies of Yogacara, especially in difficult times such as facing death. Moreover, this also suggests that computer is essentially a tool that we can explore spirituality.

Keywords: Human Life; Buddhist

Introduction

Death is an inescapable fact of human life; yet, death anxiety or thanatophobia is omnipresent and affects everyone to varying degrees [1]. This is common among healthcare professionals and may be an implication to their willingness and impact on their mental health in caring for terminally ill patients [2]. A recent survey in a UK medical school, published in 2023, suggests no reduction of thanatophobia despite advancement in medical training [3]. Yogacara (sometimes also spelled as "Yogachara") is a Buddhist philosophy and psychology emphasizing the study of cognition, perception, and consciousness [4]; which has notable parallels to modern psychology [5] such as Jung's analytical psychology [6]; denies the realities of life and death. Instead, Yogacara Buddhism considers life as a projection by the Alaya-vijnana; hence, potentially able to provide individuals with positive psychological cues to help them accepting death as part of an endless progression of life rather than its termination [7]. This is supported by a recent study in Thailand suggesting that Buddhist beliefs to be a strong predictor of death acceptance [8].

However; Yogacara, originating as an Indian philosophy and maturing by the 5th century [9], is not easily explainable to most people in modern day society. As a Buddhist interested in Buddhist philosophies and a bioinformaticist, I see much parallels between the concepts in Yogacara and the operations of modern-day computers. Previously, I had argued that artificial neural networks may be a tool to learn about biological neural networks [10]; hence, it is plausible to conceive the use of computing analogies to explain Yogacara. Therefore, I attempt to explain Yogacara using computing analogies in this essay; as such, computers can be a tool for spiritual explorations (Figure 1). By doing so, I agree with Pierre Teilhard de Chardin's view that "We are not human beings having a spiritual experience. We are spiritual beings having a human experience." – and I hope that I will have the wisdom to tell that to myself on my deathbed.

Figure 1: Computer as a Spiritual Tool.

The eight layers of consciousness in Yogacara

In Yogacara, consciousness is not a single monolith but a tapestry woven from eight distinct layers [7]. Each layer represents a different mode of awareness, from raw sensory input to the deepest storehouse of karmic imprints. Exploring these levels feels like unpacking a complex, multidimensional simulation; where each stratum has its own logic, its own data structures, its own influence on how we perceive, think, and act.

The first five sense consciousnesses (识)

The first five layers correspond directly to our sensory perception – the sense of sight, sound, smell, taste, and touch. They arise the moment their respective sense organ ( ) contacts an external object (尘) under a set of correct conditions, which in turn generates a signal (识). In computational terms, they are input streams that capture pixels, waveforms, molecular signatures, flavour profiles, and pressure maps.

These consciousnesses know only the immediate quality of their stimulus; such as, a red hue, a melodic pitch, the scent of jasmine, the sweetness of honey, or the warmth of silk. There is no interpretation or mental commentary here, just the pure feed from the world. They form the raw data collectors of the mind's architecture. For example, when photons reflected from an apple (尘) triggers my retina ( ), a neural signal will be generated (识) but this neural signal has no interpretation of what I am seeing. However, I am myopic and astigmatic since young; hence, everything that I see is blurry. This is not the problem with the external object nor the signal transduction but the sense organ.

The sixth consciousness: Manovijñāna (识)

Once sensory data arrives, the sixth consciousness processes it. It's the first layer that thinks, labels, and narrates. In code, it's the processing unit that takes clusters of sensory vectors and tags them as "tree," "birdsong," or "cup of coffee." This is where the neural signal from my eyes gets interpreted as "apple".

This layer weaves memory and conceptual frameworks into perception, linking current input to past patterns stored elsewhere. It introduces the narrative self: "I see that," "I hear this," and "I taste this." Here, the agent becomes an interpreter, not just a recorder, generating the first glimmers of recognition and meaning. In the case of phantom limbs, a recent brain imaging study shows that the part of the brain that controls the lost appendage can persist long after surgical amputation [11]; suggesting that the interpreter is still awaiting sensory signals.

The seventh consciousness: Manas (识)

Beneath that narrative engine lies manas, the self-referential core. It constantly loops "I am," "this is mine," and "that is other." Imagine a subroutine dedicated to ego maintenance, marking experiences as "mine" and clinging to the idea of a stable self.

Manas reads from the deep storehouse but misidentifies that reservoir as a solid "me." This module shapes biases and attachments, setting up the feedback loops of pride, desire, and ignorance that fuel samsāra. It's the hidden algorithm that turns perception into personal story.

The eighth consciousness: Ālaya-vijñāna (赖耶识)

At the foundation lies ālaya-vijñāna, the storehouse consciousness. It's the database where every karmic seed – every habit, every latent impression – is written in subtle code. Like a version control system holding every commit of past lives, it silently conditions the outputs of all upper layers.

This layer does not discriminate or judge. Instead, it merely holds potentials: the seed of compassion, the seed of anger, the

seed of insight. When conditions ripen, these seeds sprout into thoughts, emotions, and sensory experiences. Ālaya-vijñāna is the passive, non-discriminative core that underwrites every moment of awareness.

The role of conditions and interdependence

No layer arises in isolation. Each consciousness depends on supporting conditions—light for the eye, air pressure for the ear, attention for the mind. They interlock through dependent origination, so a shift in a single layer ripple through the whole system.

In agent design, this mirrors decoupled microservices with event buses: one service's update triggers a cascade of downstream processes. Recognizing these dependencies helps us debug mental afflictions and optimize perceptual workflows, both in ourselves and in our simulated minds. Every module's health matters for the integrity of the entire architecture.

Transforming consciousness into wisdom

Yogacara teaches that these six layers are not fixed architectures but fluid processes that can be transformed. Through meditation or skilful agent training, the sensory modules learn non-attachment, the thought processor cultivates clarity, the ego module softens its grasp, and the storehouse rewrites its code toward awakening.

This "turning consciousness into wisdom" feels like shifting an entire codebase from reactive scripts to intentional algorithms. Each component becomes a collaborator in insight rather than a perpetuator of ignorance. In practice, we cultivate awareness at every layer – by observing raw perception, deactivating ego loops, and purifying karmic seeds; so the mind system itself evolves toward clarity and compassion.

The eight consciousnesses through the computing lens

In this section, I attempt to explain the eight consciousness of Yogacara using a personal computer as an analogy.

Eye, ear, nose, tongue, and body consciousnesses (识) as input/output devices

The first five consciousnesses; namely, visual, auditory, olfactory, gustatory, and tactile awareness; form the sensory bedrock of human experience. In Yogacara, they are regarded as channels through which raw impressions of the world enter the cognitive system. Their role is not to interpret or judge, but to provide the raw material of perception.

In computing, these correspond directly to input/output (I/O) devices. The monitor, speakers, keyboard, mouse, and sensors act as the eyes, ears, and hands of the system. They do not "know" what the data means; they simply capture, transmit, or display signals. Just as a keyboard key has no understanding of the sentence it helps compose, the eye consciousness has no comprehension of beauty or ugliness; it merely transmits photons into neural signals. The parallel reminds us that raw sensing is not yet knowing, and that consciousness emerges from layered processing. Similar to my poor sightedness; when my mouse refused to work, it is the problem with the mouse (sense organ) or the Bluetooth connection (signal transmission)?

The sixth consciousness, manovijñāna (识) as user session/ foreground applications

The sixth consciousness, commonly called manovijñāna or discursive thought, operates as the seat of active cognition, reasoning, and decision-making. It is the "foreground" awareness with which we deliberate, analyze, and engage with tasks at hand.

In computing, this maps to the user session or running applications. When a user logs in, a workspace is created, which is an environment where processes can be run, files can be opened, and tasks executed. The sixth consciousness is like the desktop session: it manages what is currently being attended to, what programs are in focus, and what operations are being carried out. Crucially, just as logging out closes the applications but does not erase the operating system or stored data, the cessation of active thought does not erase the deeper layers of the mind.

The seventh consciousness, manas (识), as bootloader and operating system kernel

The seventh consciousness, manas, is subtle and often overlooked. Yogacara describes it as the layer of mind that constantly turns toward the storehouse (ālaya) and mistakes it as "self." It is the root of self-grasping, the background process that persists even when the active user session is idle.

In the computing analogy, this is best understood as the operating system kernel and bootloader. Before the user session is created, the kernel initializes the hardware, manages permissions, and establishes the persistent environment that makes computation possible. Manas is like the kernel space, invisible to the user yet foundational. It ensures continuity between sessions, keeps

track of identity, and mediates between transient processes and persistent storage. Just as the kernel cannot be directly interacted with by most applications, the seventh consciousness is rarely accessed in ordinary awareness, but it silently shapes the entire flow of experience.

The eighth consciousness, Ālaya-vijñāna (赖耶识), as storage or cloud drive

At the foundation lies the ālaya-vijñāna, often translated as the storehouse consciousness. Yogacara describes it as the repository of karmic seeds (bīja), the vast ledger of impressions from all past actions, perceptions, and intentions. It is impersonal yet individualized, shaping the conditions of rebirth and ongoing existence.

In the computing metaphor, this is the hard drive or cloud storage. All user data, system files, configurations, and logs are stored here. Whether or not the machine is currently on, the data persists. Each boot retrieves the stored profile and reloads it into the live session. Even when the motherboard of a computer is dead, the hard disk can be plugged into another new computer and be rebooted. Likewise, the ālaya silently carries the imprint of the past and makes possible the continuity of identity across lifetimes. Data corruption in computing is akin to karmic defilement, which as be denoted as errors written into the record that must be repaired or overwritten through new actions. Importantly, like a cloud disk, the ālaya is not entirely private: it is interwoven with the collective karmic field, resonating with others' storehouses.

Interactions between the eight consciousnesses as the stack model

Just as a computer operates through the integration of hardware, firmware, operating system, and user-level applications, the eight consciousnesses form a layered stack. The I/O layer provides signals. The user session (sixth consciousness) interprets and acts. The kernel (seventh) ensures persistence of self-referential processes. The storehouse (eighth) provides continuity of data across sessions. The entire system is recursive and interdependent: a keystroke (eye consciousness perceiving text) travels upward through the stack, processed by the kernel's sense of "me," and eventually stored in the hard drive as a karmic imprint.

Laptop sleep and hibernation modes as metaphors of consciousness

Modern laptops give us two very instructive metaphors for thinking about cycles of consciousness: sleep mode and hibernation mode.

Sleep mode preserves the state of the system in RAM. The screen darkens, active processes are suspended, but memory remains intact. When the laptop "wakes," it resumes seamlessly, almost as if no break occurred. This resembles light sleep or dream states in human beings, where conscious activity recedes into the background, but the continuity of awareness is close enough that resumption feels immediate.

Hibernation mode writes the system state onto disk, clears the volatile memory, and powers down almost completely. Upon restart, the machine reloads its memory image, appearing to "continue" where it left off. This parallels deep dreamless sleep experienced by humans, where consciousness is fully suspended. Yet the traces of experience are stored in neural and bodily memory, allowing identity to persist across the apparent "shutdown".

However, anyone who has used laptops long enough will know the fragility of this analogy: sometimes laptops fail to wake from hibernation. We say, half-jokingly, "my laptop died." In such cases, the system does not resume continuity but must reboot afresh, reloading its operating system and applications, and perhaps losing unsaved work. This scenario mirrors the existential vulnerability of human consciousness: while waking from sleep is usually reliable, there remains the possibility that one day, the system will not resume. Hence, this is not merely a technical failure but a reminder of mortality and impermanence; that every cycle of awareness is precious precisely because it cannot be guaranteed. Thus, laptops do not just offer a convenient metaphor; they also offer a humbling lesson. Sleep promises resumption, hibernation suggests continuity after suspension but failure-to-wake reminds us that all systems, biological or digital, eventually face a terminal shutdown.

The jellyfish and the minimal mind

One of the most fascinating case studies in modern biology is the jellyfish. These creatures possess no centralized brain. Instead, they rely on a distributed neural network spread across their bodies, coupled with simple eyespots that can detect light and shadows

[12]. Despite this simplicity, jellyfish have recently been shown to demonstrate a form of associative learning [13]; which is the ability to link one stimulus with another, an elementary form of memory and prediction [14-16].

Through the Yogacara lens, the jellyfish provides a powerful example of consciousness in its minimal expression. We can say that jellyfish has sensory consciousnesses as they sense light, detect obstacles, and respond to touch but what they seem to lack is a robust manovijñāna (the sixth consciousness), which is the reflective awareness that allows for abstraction, planning, or narrative thought. Their responses are real and adaptive; yet, there is no "storytelling self" behind them.

Mapping this to the computer metaphor, a jellyfish resembles a microcontroller or embedded device, with sensors wired directly to simple circuits. It is more akin to a smart sensor than a desktop computer. Its senses (the first five sense consciousness) function, and some processing exists, but there is no full bootloader (manas or seventh consciousness) initiating a user session. In this sense, the OS kernel never loads; there is no ongoing continuity of "I" that connects one moment to the next. And yet, the jellyfish is not entirely blank. Associative learning suggests it possesses a rudimentary ālaya-vijñāna (eighth consciousness or storehouse consciousness) — a capacity to store traces of past experiences, however limited, and allow those traces to shape future responses. If we consider that the eyes of a jellyfish as light detectors to navigate it towards the light source, it will be similar to a microcontroller device that angles solar panels to the optimal position by tracking the position of the sun throughout the day.

The significance here is that consciousness, when viewed both scientifically and spiritually, is not a binary switch; not simply on or off. Instead, it appears as a spectrum or graded phenomenon. Jellyfish show us what happens when only the lower layers of the Yogacara stack are present. In computational terms, they are like early neural networks that can classify patterns or learn simple associations without any overarching operating system or user interface.

Spiritually, the jellyfish reminds us that the roots of mind precede complex thought. Just as the ālaya carries karmic seeds without the need for self-reflection, the jellyfish embodies traces of experience without narrative consciousness. They occupy a liminal space: alive, sensing, adaptive; yet, without the self-referential machinery we usually associate with mind.

Hence, the jellyfish offers a crucial insight: even systems without centralized processors can exhibit proto-conscious behaviours [17,18]. This encourages us to think of Yogacara not as an all-or-nothing model but as a scalable architecture that can be partially instantiated. In this way, the jellyfish is not just a curiosity of biology but a living demonstration of minimal mind – a bridge between hardware, neural nets, and the beginnings of consciousness.

Sleep, anaesthesia, and coma: When the system powers down

If a fully awake human consciousness is like a desktop computer running with the operating system booted and a user logged in, then what happens when the body cycles through sleep, anaesthesia, or coma? These altered states illustrate how the Yogacara framework and the computing metaphor remain consistent across different levels of awareness.

Sleep (Suspend Mode)

In ordinary sleep, the manovijñāna (sixth consciousness, user session) temporarily suspends. Sensory input (the five sense consciousness) is drastically reduced, though not fully off; for example, a loud noise or strong touch can still break through. Meanwhile, the manas (seventh consciousness, the bootloader + OS kernel) remains active, maintaining the background continuity of self and linking to the ālaya-vijñāna (eighth consciousness or storehouse consciousness) where impressions of dreams and experiences are stored. In computing terms, this is sleep mode: the session is paused, memory is preserved, and the system can resume relatively quickly. Dreams can be understood as "background processes," drawing from stored karmic traces in the ālaya.

General anaesthesia (Deep Hibernate)

Anaesthesia is closer to hibernation mode. Here, the operating system session (manovijñāna or sixth consciousness) is not just suspended but fully terminated; the sensory channels (first five sensory consciousness) are completely silenced, and even the continuity function of the manas (seventh consciousness) becomes minimal. The body remains alive, and the storehouse (ālaya-vijñāna) is untouched, but the bridge into active awareness is deeply closed. Like hibernation, the system still holds its data and core structure but requires a significant reboot sequence to re-

establish the user session. Patients often describe anaesthesia as "losing time", which perfectly mirroring a system that was powered down and then restarted with no record of the intervening interval.

Coma (Critical System Failure)

Coma differs again. It is not a deliberate, controlled suspension like sleep or anaesthesia but a critical system failure. In this state, the operating system session (manovijñāna or sixth consciousness) is inaccessible, the sensory inputs (first five sensory consciousness) are offline, and the manas (seventh consciousness) is unable to initiate a normal reboot. Yet, the storehouse (ālaya-vijñāna) remains intact, preserving the karmic store and the seeds of experience. Some comatose patients return, which is akin to a successful restart after severe corruption; while others never do, leading to the dissolution of the current embodiment. Spiritually, this mirrors the Buddhist teaching that while the embodied consciousness can fail, the deeper continuity of the storehouse remains until death and rebirth.

Discussion on sleep, anaesthesia, and coma

Together, these three states illustrate how consciousness is layered and modular, much like computing systems. Yogacara provides the architecture, while modern neuroscience and computer metaphors give us tools to articulate the gradations of presence, absence, and recovery. Sleep shows us the regular cycling between session-on and session-off. Anaesthesia shows us the engineered suspension of all sessions while keeping the system safe. Coma shows us what happens when the system cannot reinitiate on its own. At the moment, we may be technologically close to the possibility of a head transplant [19] – challenge and ethics aside, what remains to be seen is whether a transplanted head or brain can be rebooted into operation.

These parallels remind us that consciousness is neither absolute nor singular. Like computing systems, it operates through levels, dependencies, and fail-safes. And much like computers, when one layer shuts down, others continue to hum beneath the surface — silent but present, awaiting the chance to return. From the pedagogical point of view, explaining the similarities and differences between sleep, anaesthesia, and coma using computer analogies can help both IT students and biology students understand their relative concepts; which may be extended to a debate on both the philosophy of the mind and how a person learns.

Advanced phenomena – Multiple sessions and virtualization

For most users, a computer runs a single user session at a time but advanced systems allow multiple concurrent sessions, virtual machines, or even containerized environments. In the Yogacara analogy, spiritually advanced practitioners may operate multiple awareness streams simultaneously. Mystics and bodhisattvas are described as perceiving multiple realms, guiding others while maintaining their own path. This is akin to a server running many virtual machines, each with its own environment yet all drawing from the same hardware and storage. The metaphor highlights both the potential expansiveness of consciousness and the rarity of such mastery.

Death, rebirth, and migration – Serialization of instances

In computing, when a session ends, it can be serialized: its state saved into files that can later be reloaded, even on another machine. In Yogacara, death is not the cessation of all processes but the serialization of karmic imprints into the ālaya (the storehouse), which then boots in a new body via the kernel of the seventh consciousness. Thus, rebirth not unlike migrating a server image to a new data centre: the physical hardware is different but the stored image ensures continuity. This metaphor captures why rebirth does not require a permanent soul, only the persistence of stored karmic data.

Toward a computational spirituality

This parallel between Yogacara's eight consciousnesses and computing is not merely poetic. It offers a practical schema for modern spiritual reflection: practitioners steeped in computing can visualize their consciousness as layered architecture, subject to processes of input, storage, booting, and migration. By understanding how data flows and accumulates, one can cultivate vigilance about what karmic seeds are "written to disk." Moreover, by recognizing the kernel's role in self-grasping, one can experiment with debugging the persistent illusion of ego.

Conclusion

In this essay, I explained the eight levels of consciousness in Yogacara using computing analogies; thereby, presenting computer as a potential tool to explore spirituality.

Acknowledgement

I wish to thank a friend, Louis Kok, for his impromptu discussion on AI while we were on public transport that led me to this exploration.

Conflict of Interest

The author declares no conflict of interest.

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