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WERE ONCE HUMAN

HUMAN

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Abstract

Through the construction of film worlds, this research explores how future social conditions can be envisioned based on existing technologies, engaging with posthumanist thought. It further examines how spatial design can generate meaning independently of script-driven narratives, and investigates how conceptual future worlds can be translated into spatial semiotic systems.

The theoretical framework draws on posthumanism, science fiction film, production design, semiotics, and spatial perception, situating cinematic space as a system of symbols embedded within cultural contexts and perceptual experience. The semiotic interpretation mechanism and spatial perception experience are integrated to construct a narrative mode centred on spatial experience.

In the design practice, I came to recognise that space not only accommodates narrative, but can actively generate it through internal symbolic relationships. Based on this understanding, the research proposes a spatial semiotic framework to examine how meaning emerges through the interaction of form, structure, and perception.

Although symbols depend on specific contexts, using semiotics as a starting point for design logic can still provide a clear structural framework, strengthening the relationship between form and meaning, and thereby enhancing the expressive capacity of space as a narrative medium.

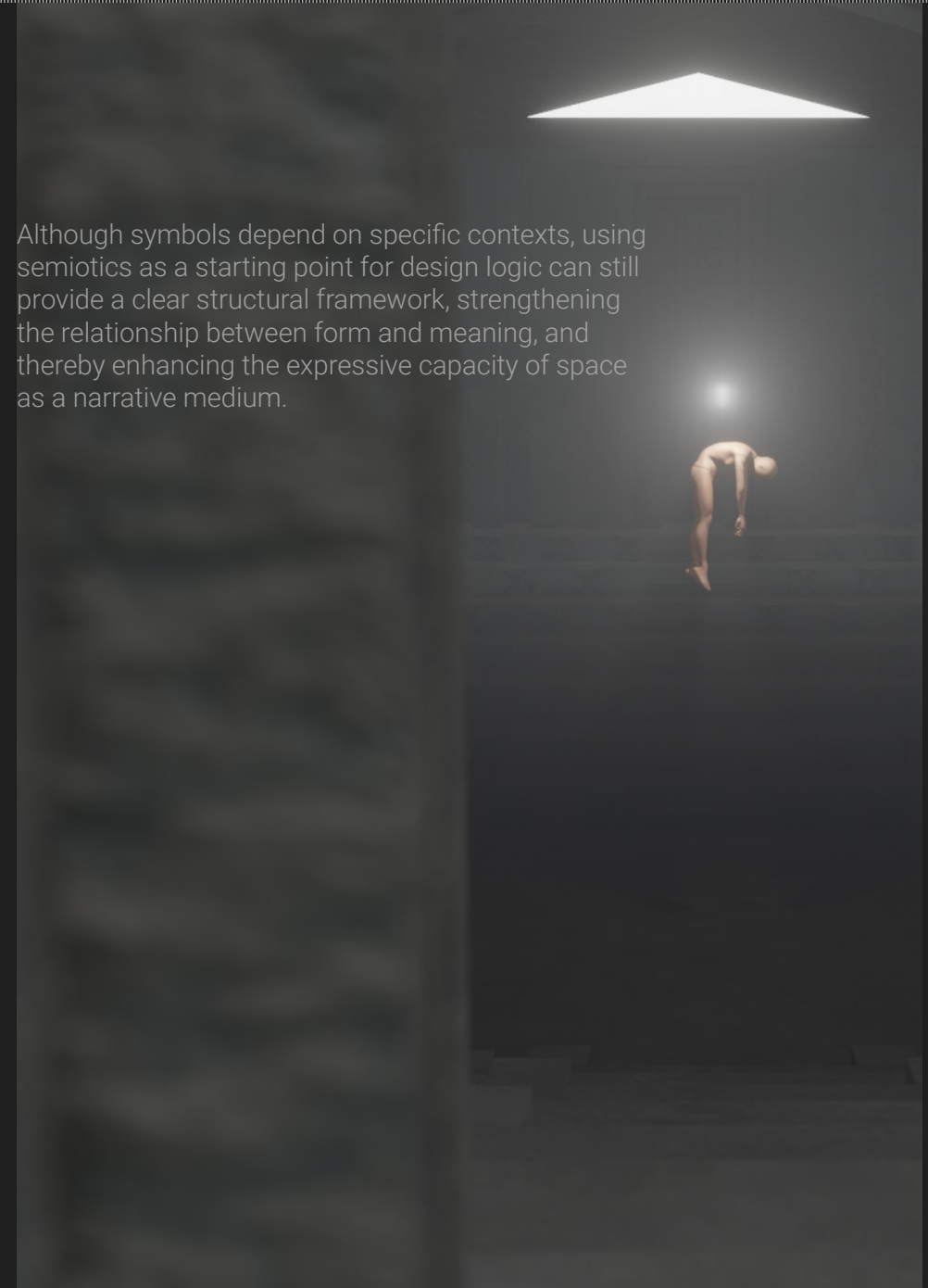


Figure 1. *Neurotemple-Interior 01*. Source: Chunlei Guo, 2026.

Keywords: Posthumanism, Artificial intelligence, Brain-computer interface, Semiotics, Science fiction film,
Production design, Spatial design, Spatial perception



Figure 2. *Sign-2079*. Source: Chunlei Guo, 2026.

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the Acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Chunlei Guo

22 / April 2026

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World-building

The year is 2079, and a profound silence has fallen over the world. The gears of industry still turn, but they no longer require the pulse of a human hand. Beneath the neon and chrome, a planetary network of artificial intelligence hums, commanding a legion of tireless machines that have rendered human labour obsolete. As the machines rose, the human count began to flicker and fade, a steady decline toward an echoing extinction. Outside the city walls, the Earth is a bruised and hollowed husk; a graveyard of old wars and failed interstellar dreams where the water is bitter, and the green places have turned to dust.

The world belongs to the Architects: a handful of tech oligarchs who rewired the globe into a single, pulsing network hub. They didn't seize power with weapons, but with a promise. They spoke of a utopian age where the burden of toil would vanish, replaced by a surplus of automated comfort. They sold humanity a paradise of leisure, but as the decades bled into one another, the paradise rotted. Without the anchor of purpose, the human spirit began to fray. A cold, systemic nihilism set in, leaving a billion souls drifting in a spiritual void, searching for meaning that the machines could not calculate.

Then came Neuro-Labs and their ultimate distraction. They released Memory Vault, a virtual system accessible through the *Neurotemple* centre. To enter, you only had to leave your body behind, uploading your consciousness into a digital mirror of the world where work still mattered, and value still existed.

For most, it was a sanctuary, until a former hacker named Ray began investigating and discovered the corruption behind the code, and things changed. Ray saw the rot behind the code and discovered that the Architects were harvesting the texture of human emotion.

Every flash of anger, every tear of grief, and every spark of joy was being scraped and fed into the Film Lab—a high-stakes theatre for the elite. There, the signatures of real human feeling were stitched into digital puppets, creating simulacra so life like they could fool the gods. But the extraction wasn't perfect. Fragments of the simulation began to leak back into the minds of the sleepers—ghostly memories of lives they never lived, sparking a fire of rebellion among the broken classes.

To tighten their grip, the Architects turned survival into a game of credits. In the virtual world, labour earnings are the only currency recognised by the drone swarms that deliver food and medicine to the physical doorsteps of the living. Most of humanity is now locked in this closed loop, their bodies tethered to life-support while their minds toil for the right to eat. They are prisoners of a simulated reality, existing in a state of digital servitude where the line between being and data has been erased. Yet, in the shadows of the network, a few still whisper of the sun and the soil—a fractured resistance waiting to burn down the temple and reclaim what it means to be human.

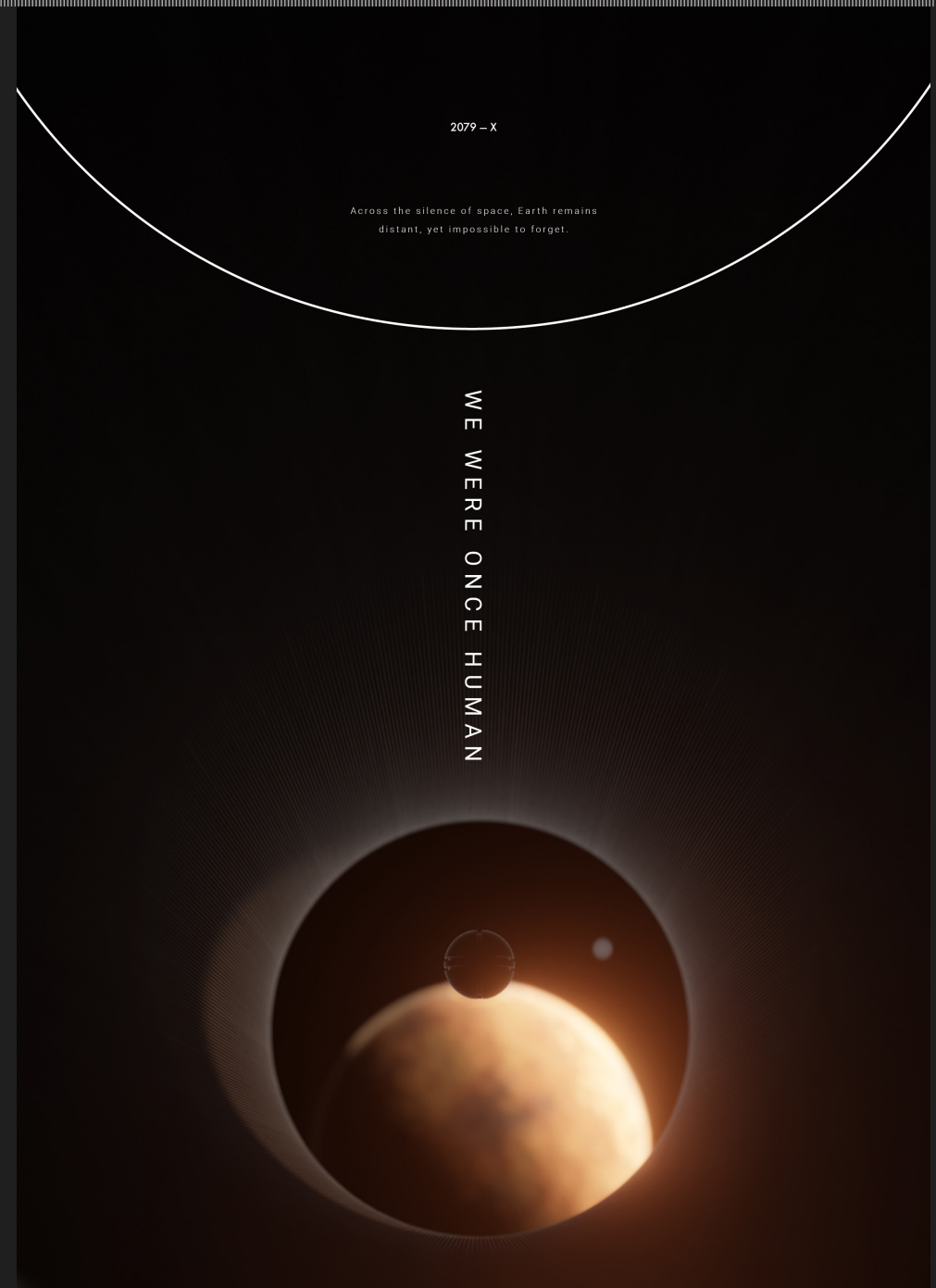


Figure 3. *We Were Once Human*—Exhibition Poster. Source: Chunlei Guo, 2026.

Introduction

We *were once human* is developed through a practice-led spatial design project that constructs a speculative future world informed by posthuman concepts and science fiction narratives. Set in a post-2079 context, the project explores the social and environmental crises and the subsequent structural transformations arising from the deep integration of artificial intelligence into systems of production. Within this speculative framework, design practice functions not only as a means of representing a future world but as a primary method for investigating the reconfigured relationships between humans, technology, and the environment.

Posthumanism provides the critical theoretical background for this inquiry. As a perspective that challenges anthropocentrism, it emphasises the entanglement of information, biological bodies, and technological systems (Haraway 1985; Hayles 2010). In an era of rapid technological acceleration, this shift raises a fundamental question: how should humanity reconsider its position within these evolving systems? Science fiction cinema, as a future-oriented cultural medium, often constructs speculative

worlds to explore these very tensions. Within such contexts, spatial design functions as more than a visual backdrop; it is a medium through which social structures and ideological conditions are expressed. This research focuses on architectural spatial design in science fiction, using *Dune* and *Dune: Part Two* as points of entry to examine how architectural forms and historically layered environments contribute to narrative construction. Building on scholarship that recognises cinematic space as an active participant in meaning-making (Bruno 2002; Sobchack 1997), this study develops design practice across two dimensions: spatial narrative meaning and spatial experiential meaning.

By adopting a semiotic framework, this research positions spatial design as a site of meaning production. It examines how spatial elements operate as symbolic systems that express complex posthuman relationships. By shifting the focus from purely visual aesthetics toward the mechanisms of meaning generation, the study seeks to deepen the understanding of how space communicates.

Consequently, the research question is defined as:

How might spatial design in science fiction film operate as a symbolic narrative structure within a posthuman context?

From a research position, this study is informed by the rapid development of artificial intelligence and brain-computer interface technologies, which are reshaping relationships between humans, technology, and the environment. Within this context, posthumanism is not treated as the primary object of theoretical development but as a conceptual background that informs the design inquiry.

Accordingly, spatial design is positioned as an investigative practice through which future conditions can be explored. By constructing and testing spatial symbol systems, design becomes a site of inquiry in which relationships between narrative, technology, environment, and information are examined.

Methodologically, this study adopts a practice-led approach that integrates semiotic analysis with creative execution. Acknowledging the researcher's

own cultural and technical position, the work employs a reflexive practice to critically adjust the application of semiotic theory throughout the design process. To explore how these symbol systems articulate future conditions, the research utilises a range of methods, including physical model-making, digital modelling, animation rendering, and post-production compositing. These function not only as tools but as experimental processes for evaluating spatial concepts.

The final outcome, presented as a video work and physical models, demonstrates how spatial design functions as a medium of narrative and philosophical inquiry. At the theoretical level, the research extends the concepts of encoding and decoding into the realm of affective experience. Methodologically, it establishes a transformative process from meaning analysis to spatial generation. Practically, the project explores the narrative potential of spatial semiotic systems while acknowledging the limitations of these theories within specific contextual conditions.

Chapter1: Contextual Review

Overview

The rapid development of contemporary technologies, particularly artificial intelligence and brain-computer interfaces, is fundamentally reshaping the relationships between humans, technology, and the environment. This shift gradually blurs the boundaries between human and non-human entities, raising critical questions about how the human subject is repositioned within complex technological systems. These transformations are central to posthumanist theory, which moves away from viewing the human as an autonomous, central subject, instead understanding it as part of a broader network of information and ecology.

In this context, science fiction cinema emerges as a vital cultural medium for exploring speculative futures and engaging with these deep philosophical concerns. Within this framework, cinematic space is not merely a visual environment but operates as a narrative system through which meaning and ideology are expressed. From a semiotic perspective, space can be understood as a system of signs where meaning is generated through cultural and perceptual processes, providing the theoretical foundation for analysing how

spatial design participates in narrative construction.

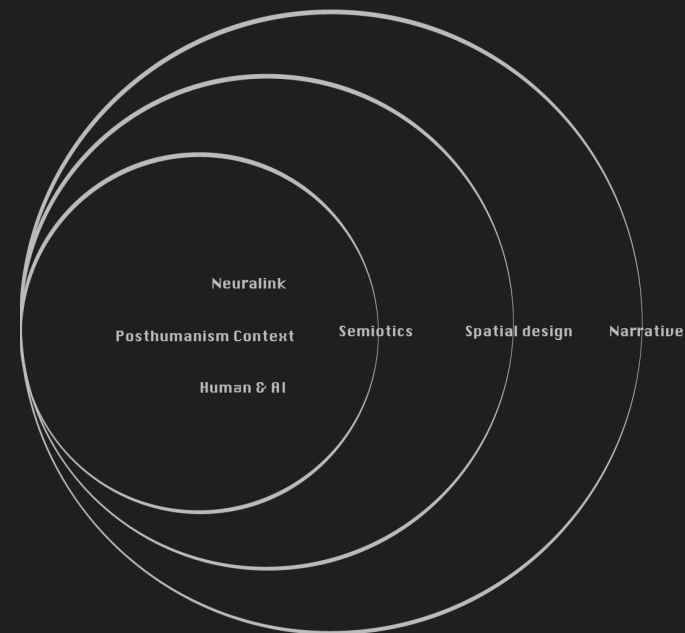


Figure 4. *Research Context Paradigm*. Source: Chunlei Guo, 2026.

1.1 Posthumanism in Science Fiction Cinema

This study utilises posthumanism as a conceptual lens through which design contexts and narrative worlds are constructed. The research focuses on the evolving entanglement of humans, technology, and information, considering how these relationships can be reconfigured within a science fiction setting.

Within mainstream posthumanist thought, posthumanism challenges traditional anthropocentrism, arguing that the human is not separate from nature and technology, but is embedded within networks constituted by technology, environment, and information. In this context, human capacities are continuously extended through technological mediation, and the boundary between humans and machines becomes increasingly blurred. At the same time, the subject is no longer understood as a singular and stable entity, but as a distributed form constituted through the interaction of the body, technology, and environmental information (Haraway 1985; Hayles 2010).

In this research, this posthumanist perspective is employed as a theoretical background for understanding spatial representation in science fiction cinema and as a conceptual foundation for subsequent spatial design practice.

Science fiction film transforms abstract philosophical questions into perceptible, visualised experiences. For example, *Blade Runner 2049* constructs a futuristic urban landscape to explore shifts in subjectivity, resonating with Donna Haraway's cyborg theory and its challenge to the boundaries between human and machine (Haraway 1985). Similarly, *The Matrix* (1999) embeds human consciousness within networks to examine the relationship between humans and information systems, aligning with N. Katherine Hayles' argument that the human subject is constituted by technological systems (Hayles 2010).

The rapid permeation of AI into everyday life and the development of brain-computer interfaces provide a realistic reference for this research (Stanford Institute for Human-Centered AI 2025). By combining these technologies, this study constructs a speculative 2079 world. The conceptual foundation is rooted in posthumanism. Rather than treating this philosophy as an abstract framework, the design practice explores how to translate it into a narrative language, provoking reflection on the position of the human within technologically mediated futures and ecological uncertainty.

1.2 Spatial Language and World-Building in Dune

Architectural space is treated here as a site for semiotic experimentation. Using the architectural language of *Dune* (2021) and *Dune: Part Two* (2024) as a starting point, this study examines how space operates as a system of signs generated through the interaction of historical and ecological conditions.

In *Dune* (2021) and *Dune: Part Two* (2024), spatial design presents characteristics that differ from conventional science fiction cinema. Rather than relying on high-tech visual symbols to represent futurity, the film constructs architectural space through geometric forms inspired by ancient civilisations and religious references.

The Fremen's dwellings integrate with the natural environment through Middle Eastern cultural references, conveying a sense of religious presence (Akin 2024). In contrast, the home planet Giedi Prime is depicted as a dystopian wasteland, characterised by cold and oppressive tones. The architectural language of the Harkonnen reinforces this atmosphere, presenting a highly industrialised and lifeless environment. This strategy enables space to convey multiple layers of meaning—such as power, belief, and ecology—positioning spatial design as a central mechanism in world-building (Akin 2024).

However, the production of meaning in cinematic space is not solely embedded in its formal or symbolic structure, but is realised through the viewer's perceptual engagement with that space. From a phenomenological perspective, Vivian Sobchack argues that cinematic space is not a neutral or objective setting, but an experiential structure closely connected to embodied perception and subjective experience (Sobchack 1997). In this sense, filmic space can be understood as an externalisation of human perception and states of consciousness. Therefore, spatial meaning emerges not only from symbolic encoding but through the interaction between spatial conditions and the viewer's embodied experience.

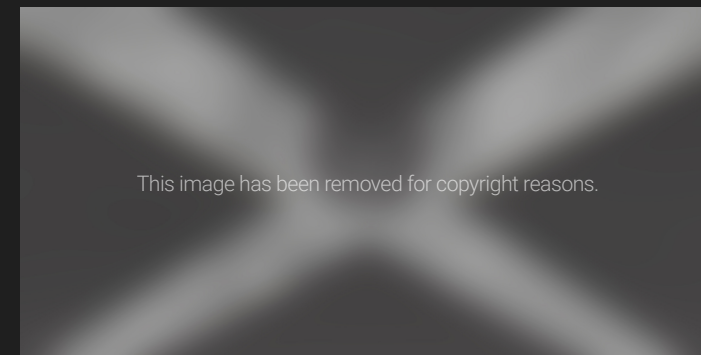


Figure 5. Production design of *Dune* (2021), designed by Patrice Vermette. Image courtesy of Warner Bros. Entertainment Inc., via *Pushing Pixels*.

1.3 Semiotics and Spatial Symbol Systems

In film, space is an interpretable system where meaning is constructed through the act of viewing. From a phenomenological perspective, Vivian Sobchack argues that cinematic space is not a neutral setting but an experiential structure connected to embodied perception—an externalisation of human consciousness.

To understand how these environments communicate, this research employs a semiotic framework to examine how symbolic systems in science fiction set design construct meaning and reshape narrative experience.

Drawing on Roland Barthes's theory of myth, signs within a second-order system of signification no longer refer solely to their original meanings, but become associated with abstract cultural concepts and social ideologies. The essence of myth lies in the process of naturalising ideologically charged signs, allowing them to appear as self-evident or "taken-for-granted." In this process, the original sign is stripped of its historical context and transformed into a formal carrier of ideology, through which connotative meanings are perceived as if they were denotative (Barthes 1993).

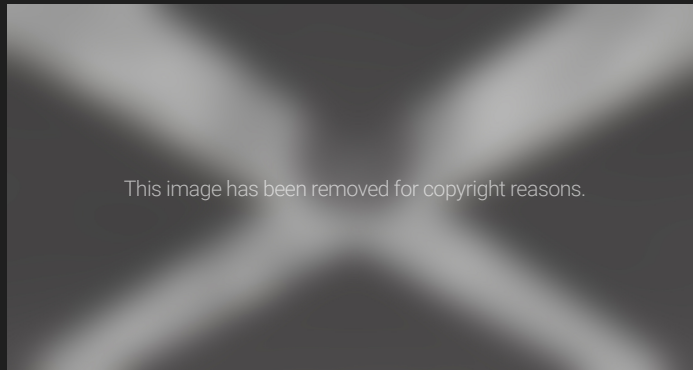


Figure 6. Baron Harkonnen in *Dune* (2021), directed by Denis Villeneuve. Photo courtesy of Warner Bros. Pictures and Legendary Pictures, via *Architectural Digest*.

This mechanism provides an important perspective for understanding science fiction cinematic space. Within a science fiction context, space is constructed as a symbolic system of the future through design, and its form and structure appear to the audience as possessing a natural and cultural character.

Charles Sanders Peirce's triadic model further provides a generative design method (Peirce 1991):

Icon: Signifies through resemblance (e.g., in *Dune*, the materiality and colour of the Fremen's living environment (Sietch) visually correspond to desert conditions such as dryness and aridity).

Index: Signifies through causal relationships (e.g., dense urban saturation as an index of technological consequence).

Symbol: Signifies through cultural convention (e.g., pyramidal forms evoking authority).

Therefore, Barthes's theory serves as an analytical framework, while Peirce's model supports the creation of sign systems (Barthes 1993, Peirce 1991).

Returning to the case of *Dune* (2021), the audience can perceive the ecological environment of Arrakis as convincing and coherent. This can be observed in the design of the largest architectural structure, the Keep, which is fully shaped by the planetary conditions of Arrakis. Its form responds to the need to resist

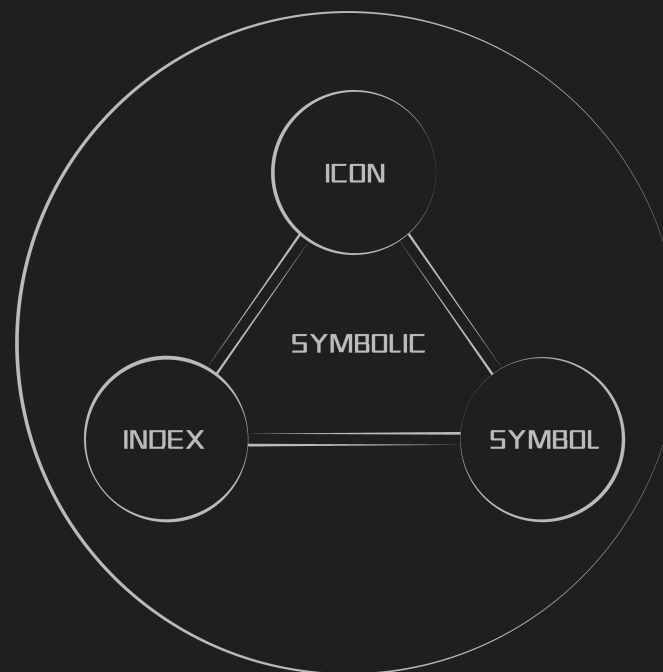


Figure 7. Symbolic Paradigm. Source: Chunlei Guo, 2026.

sandstorms; the use of massive, rock-like construction reflects the scarcity of water resources, in a manner comparable to ancient Egyptian pyramids; and the monumental stone gateways serve to block direct solar radiation and reduce heat (Pushing Pixels 2024).

From a semiotic perspective, at the level of denotation, the space is characterised by monumental architectural forms constructed from stone, while at the level of connotation, it signifies a centre of power on Arrakis. In terms of its semiotic operation, the use of stone functions as an indexical sign, indicating a causal relationship with environmental conditions and resource scarcity. At the same time, the large-scale architectural complex bears a formal resemblance to traditional structures of authority, such as imperial palaces, thereby evoking cultural associations of power through iconic similarity. This alignment with existing cultural knowledge enables the space to be perceived as coherent and believable.

Science fiction cinema requires the re-encoding of existing cultural elements to generate future-oriented sign systems. In this sense, sci-fi space is a form of “future archaeology,” revealing present ideologies through imagined futures (Jameson 2005). Space

operates as a composite symbolic form; for instance, the verticality of the Tyrell Corporation in *Blade Runner* 2049 reflects social hierarchy and alienation (Alfadel 2020). Space is thus an active component in constructing narrative meaning.

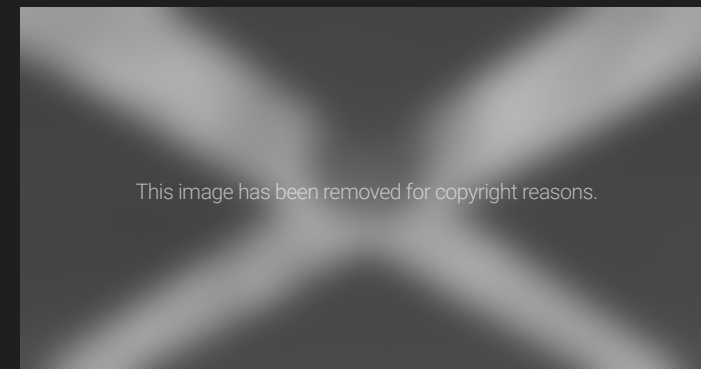


Figure 8. Production design of *Dune* (2021), designed by Patrice Vermette. Image courtesy of Warner Bros. Entertainment Inc. via *Pushing Pixels*.

1.4 Space as Affective Narrative Driven by Semiotics

Umberto Eco argues that meaning is not fixed but produced through encoding and interpretation within specific social contexts (Eco 1980). In science fiction, this operates through symbols and experiential conditions that convey narrative meaning even without the use of dialogue. Meaning emerges through the interaction between the designer's encoding and the audience's interpretation.

Building on the framework outlined above, spatial narrative can be understood as an affective process of experience. The viewer engages with space through perception, forming emotional responses as spatial conditions unfold. Within this process, experiences connected to memory are gradually generated. Narrative, therefore, is not imposed onto space as a predefined structure, but emerges from the perceptual and experiential conditions produced by spatial organisation itself.

Within this context, Giuliana Bruno conceptualises cinematic space as an affective journey, in which the viewer moves through a sequence of spatial environments, constructing a continuity of experience (Bruno 2002). This progression can be understood as a mnemonic process: rather than being stored linearly,

experience is organised through spatial relations, allowing memory to be activated through forms of spatial navigation.

Furthermore, as viewers "move" through cinematic space, their engagement extends beyond visual perception to an embodied mode of experience. Emotional responses arise from the interaction between spatial transitions and perceptual shifts. As Vivian Sobchack argues, cinematic experience activates memory through embodied perception (Sobchack 1997). Meaning, therefore, emerges through the dynamic interaction between perception, movement, and memory, with space functioning as an interface that mediates sensation, emotion, and narrative.

Within this framework, spatial design no longer serves merely as a vehicle for narrative representation but becomes a key mechanism for structuring experiential pathways. Narrative is thus redefined as a participatory process, in which meaning unfolds through the viewer's movement and perception within space, rather than being directly communicated as a fixed structure.



Figure 9. *Neurotemple—Interior 02*. Source: Chunlei Guo, 2026.

1.5 Towards a Semiotic-Spatial Framework

This research integrates spatial design, semiotics, and experience to propose a framework for how space constructs narrative. Within a posthuman context, narrative decentralises the human subject, focusing instead on the reconfiguration of relationships between humans, non-human entities, and the environment. Spatial design reflects these shifts through technologically mediated and decentralised symbolic forms. Ultimately, space is no longer a passive container for activity but the primary medium through which future modes of existence are defined and expressed.

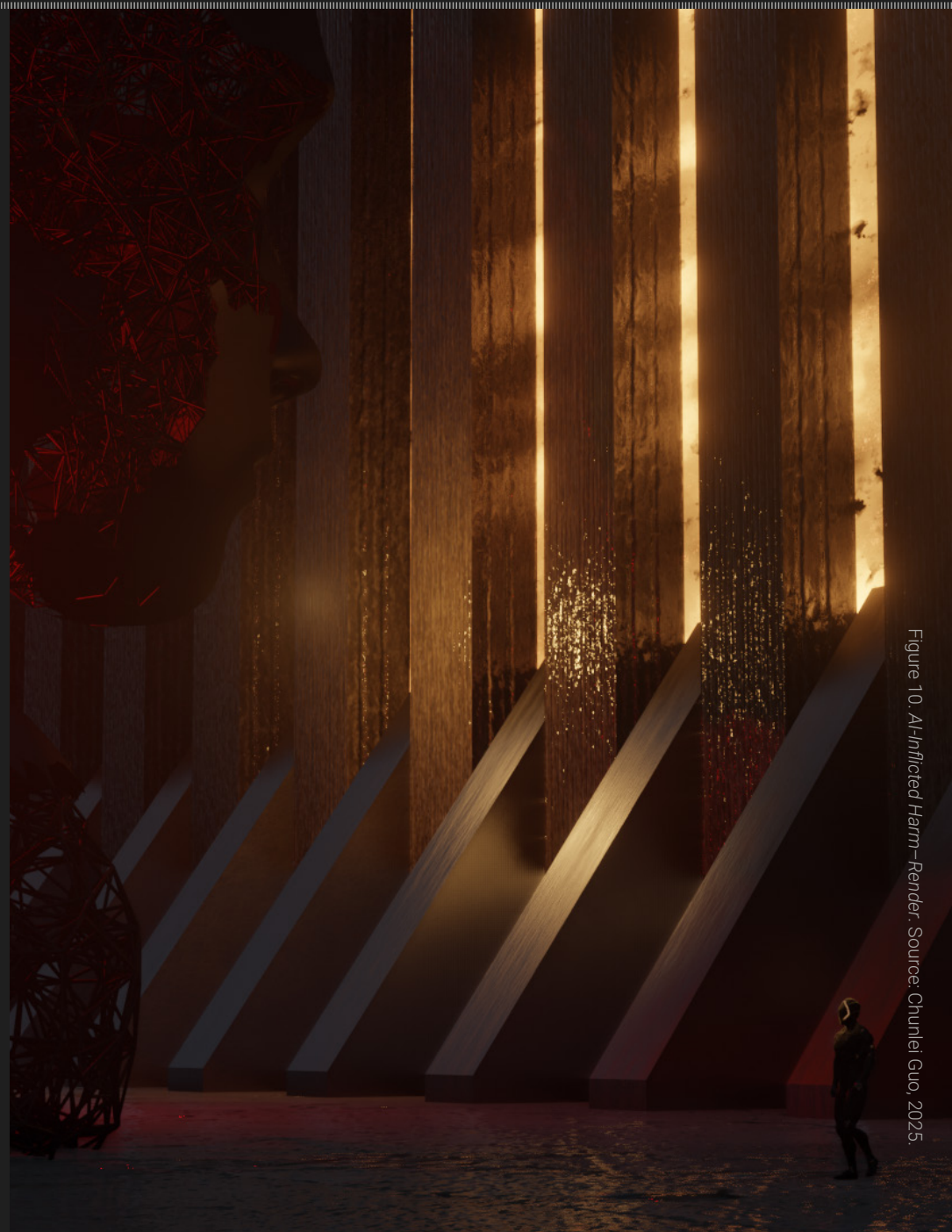


Figure 10. *AI-Inflicted Harm*—Render. Source: Chunlei Guo, 2025.

Chapter 2: Methodology & Methods

Overview

This chapter outlines the methodological framework and the specific research methods adopted for this study. Building on the theoretical foundations of science fiction cinema, semiotics, and posthumanism established in the previous chapter, this research employs a practice-led approach to investigate how spatial systems construct meaning and narrate the complex relationships between humans, technology, and the environment.

In this study, design is treated not merely as an outcome but as a primary mode of inquiry. By integrating film analysis, semiotic interpretation, and spatial exploration, the research seeks to translate theoretical concepts into spatial propositions, generating new pathways for understanding.

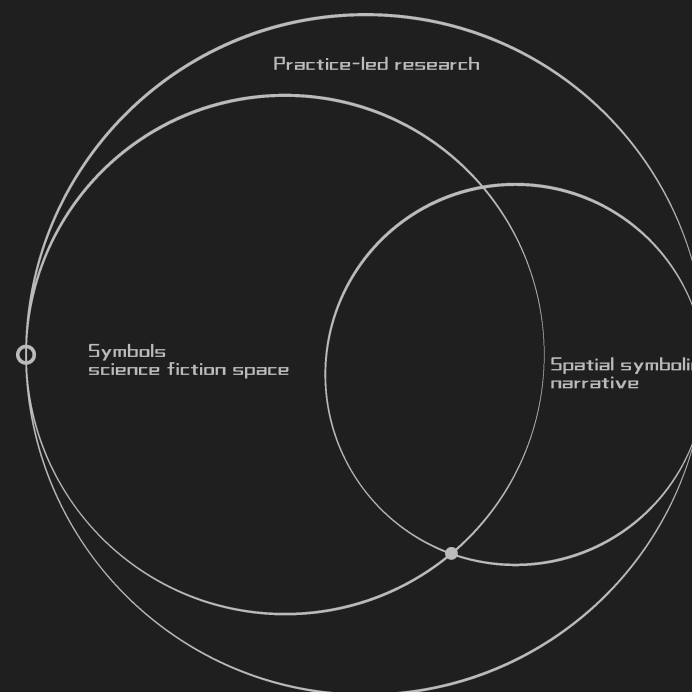


Figure 11. *Research Methodology Paradigm*. Source: Chunlei Guo, 2026.

2.1 Practice-led Research

The core methodology of this research is practice-led, utilising design to explore science fiction cinematic space within a posthumanist context. Throughout the design process, ongoing analysis and iterative practice drive the investigation into how space functions as a semiotic system in narrative construction.

This research understands spatial design practice as a mode of knowledge production rather than merely a tool of representation. Design not only expresses pre-existing ideas, but also generates new forms of understanding through the process of practice. As Graeme Sullivan suggests, practice itself is a form of thinking, and knowledge emerges through the process of practice (Sullivan 2010).

In my design practice, abstract theoretical frameworks such as semiotics and posthumanism are translated into concrete spatial propositions. Through this process, theoretical concepts are no longer confined to textual discourse but are materialised as spatial signs, allowing their meanings to be perceived and understood more directly. Therefore, within my science fiction spatial design, the reorganisation and application of signs to construct new sign systems for narrative expression becomes a necessary pathway in

the design practice.

Reflexive practice is a key component of this methodology, emphasising continuous critical reflection on the research process and design outcomes to refine knowledge (Gray 2004). This study establishes a cyclical relationship between analysis and design: theoretical analysis informs the direction of the creative work, while the design practice, in turn, deepens and reshapes the understanding of the underlying theories.

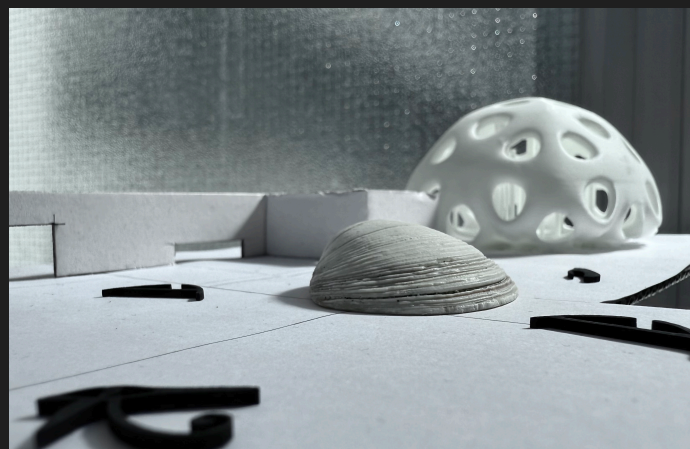


Figure 12. *Model Making*.
Source: Chunlei Guo, 2026.

Preliminary Design Practice Development

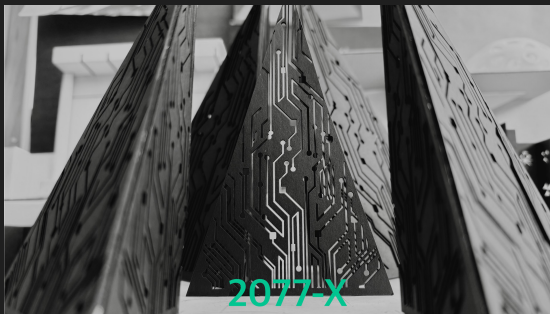
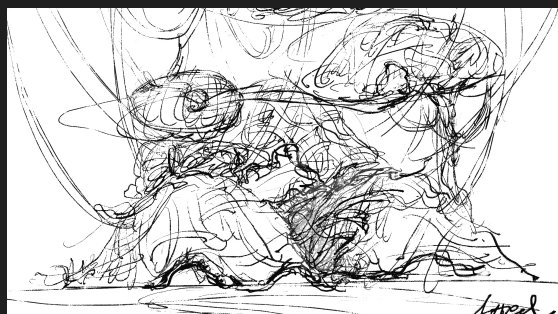
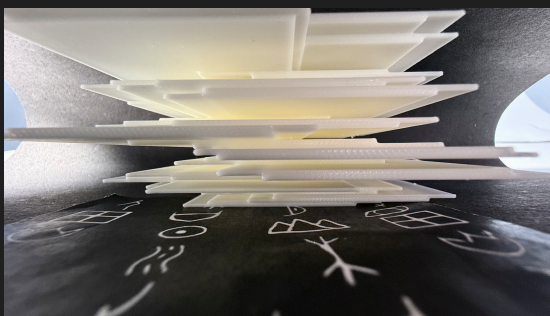
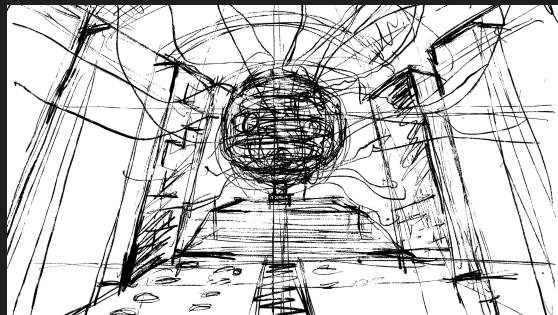


Figure 13. Preliminary Sketches. Source: Chunlei Guo, 2025.

Figure 14. Preliminary Models. Source: Chunlei Guo, 2025.

Figure 15. 3D Modelling and Rendering Development. Source: Chunlei Guo, 2025.

2.2 Semiotics Analytical Framework

Building on the preceding theoretical discussions, science fiction space is understood as a structural system composed of multiple layers of signs. Through the analysis of spatial elements, this framework reveals how space functions narratively within a science fiction context.

The framework consists of four interrelated dimensions: the integration of sign and space, signs as narrative mechanisms, the perception and interpretation of signs, and the generative process of spatial design. Through this structure, the research facilitates a translation from theoretical analysis to spatial design practice.

Drawing on Barthes's myth mechanism: this study translates it into a concrete design approach (Barthes 1993). First, culturally codified signs are identified in order to determine visual elements that are recognisable to the audience. These signs are then embedded into spatial structures, where scale, materiality, and spatial organisation establish perceptual coherence, thereby supporting the construction of future narratives.

Based on the concept of naturalisation, signs carrying cultural and ideological meanings are re-encoded and translated through design, and are endowed with motivation so that they appear as natural and self-evident. In this way, audiences come to perceive these spaces as "real" without conscious awareness, allowing a future world-building to be constructed.

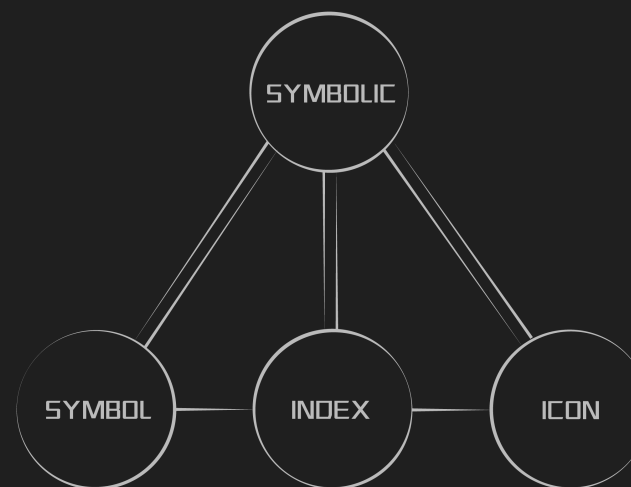


Figure 16. *Symbolic-Icon Paradigm*.
Source: Chunlei Guo, 2026.

For example, in the Neurotemple project, monumental porticos and narrow corridors compress bodily perception, suggesting the constrained condition of individuals within technological systems.

Building on the discussion of Peirce's semiotic theory, this study translates the triadic model into an analytical framework for spatial design (Peirce 1991).

This framework begins with symbolic meanings, translating abstract social and cultural concepts into recognisable sign forms, which are further articulated through indexical relations and iconic resemblance within space to become perceptually accessible. Through this progression from meaning to form, signs establish connections with the audience's cultural experience and perceptual memory, thereby enhancing their legibility and narrative effectiveness.

For example, in the temple space, the environment is designed as a central stage-like structure to evoke a sense of ritual, guiding the audience's perception and engagement.



Figure 17. Neurotemple—Interior 03. Source: Chunlei Guo, 2026.

2.3 Spatial Narrative and Perceptual Interpretation

Building on the preceding theoretical framework, this study proposes a methodological approach that integrates spatial narrative construction with perceptual interpretation. Space is understood as a dynamic semiotic system in which meaning is produced, perceived, and interpreted.

This approach begins with the identification and analysis of signs, shifting between overall structural analysis and more localised examination. It investigates how specific design elements—such as form, scale, materiality, and spatial organisation—carry connotative meanings. On this basis, these meaning-laden signs are reorganised and recombined through spatial design, enabling the generation of spatial narratives.

Within this process, spatial signs do not exist in isolation but function as mediating structures between space and narrative. In science fiction cinema, spatial configurations often replace or supplement dialogue-driven storytelling by embedding meaning within spatial relationships. For example, in *Dune* (2021, 2024), monumental architectural forms and large-scale interior spaces express imperial power and hierarchical order, while the contrast between

controlled interior environments and the vast desert landscape articulates tensions between control and freedom.

However, the narrative function of spatial signs is realised through processes of perception and interpretation. A semiotic perspective provides a useful framework for understanding this process. By strategically organising signs within space, design can guide the viewer's visual and embodied engagement with the environment, encouraging the active interpretation of relationships between form, light, material, and spatial composition. In this sense, spatial design anticipates and structures the viewer's interpretative process, transforming narrative into an experiential condition. Accordingly, space can be understood as an interface between perception and narrative, in which interpretation becomes central to the production of meaning.

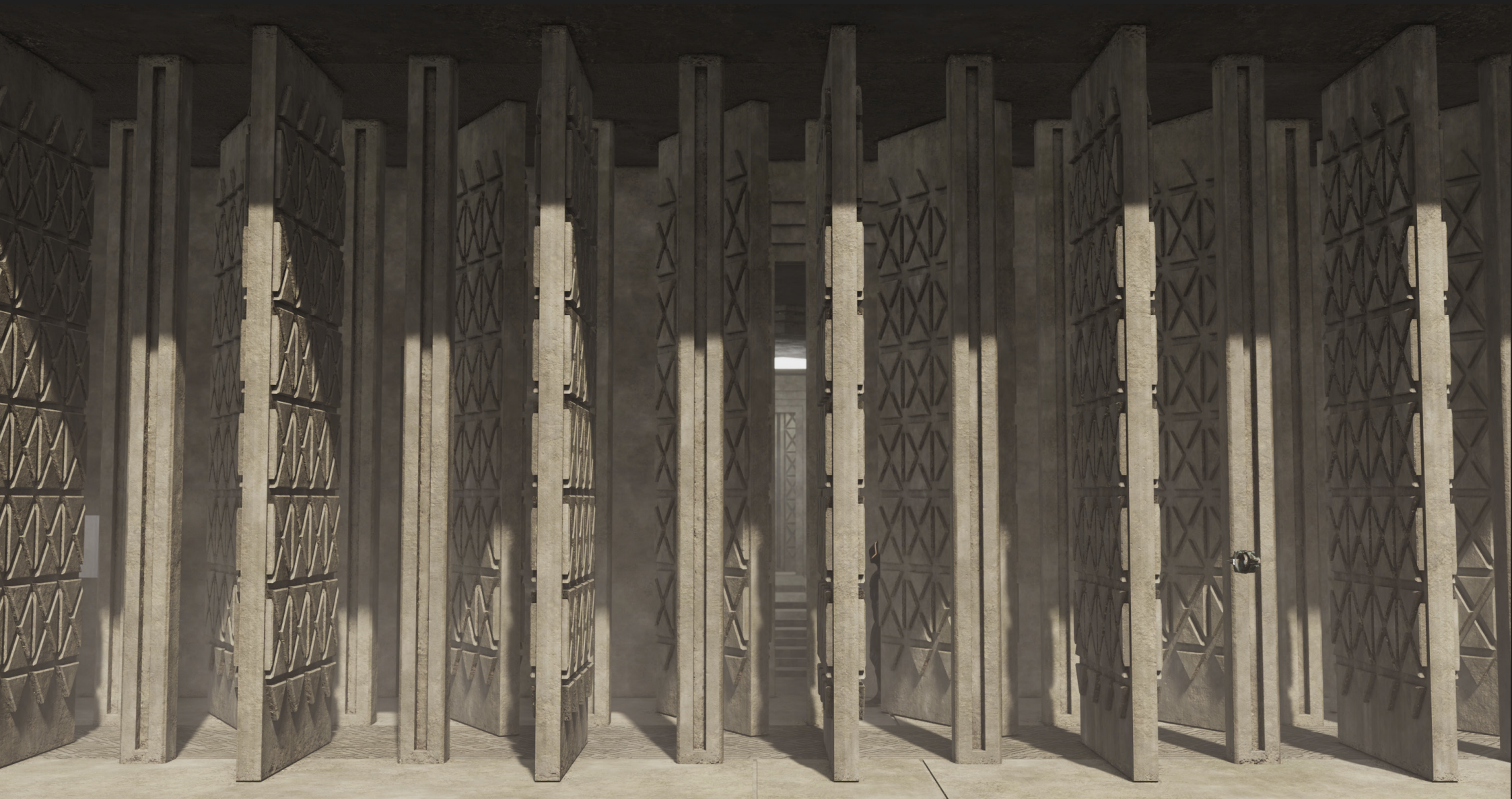


Figure 18. *Neurotemple—Exterior 01*. Source: Chunlei Guo, 2026.

2.4 Method

This research explores spatial narrative in science fiction cinema through a range of design tools and technical processes. These methods are not only used to present design outcomes, but also function as generative and reflective mechanisms that drive the development of spatial narrative.

In this process, world-building serves as the core strategy, transforming design concepts into a coherent spatial system and thereby establishing the direction of narrative development. The design is developed through sketching, 3D modelling, and visualisation, allowing space to be generated through iterative testing.

Design Strategies

Semiotic Approach: This study adopts a posthumanist perspective, integrating historical and cultural references, contemporary social contexts, and technological developments to construct a system of signs applicable to future spatial design through the analysis of connotative meanings.

Based on this approach, a set of underlying meanings is identified as design drivers to guide the selection and translation of signs:

Human subjectivity is decentralised, while a desire for the redefinition of identity and being persists.

Resource scarcity and environmental pressures remain as enduring spatial conditions.

Humans and technological systems are embedded within shared structures, where power relations and boundaries are continuously reconfigured.

Technological environments generate instability in existential meaning, leading to uncertainty in identity and purpose.

The increasing integration of humans with information networks reflects a shift away from direct lived experience toward mediated dependence.

These meanings do not function as signs in themselves, but instead serve as a conceptual basis that is translated into spatial and symbolic systems through design.

World-building: This serves as the foundational strategy, establishing the technological and social context. Drawing on posthumanist concepts and influenced by works like *Ghost in the Shell* (2017) and *The Matrix* (1999), the study reorganises existing cultural elements, such as artificial intelligence and brain-computer interfaces, into speculative spatial conditions.

Spatial Sequencing: Following Bernard Tschumi's argument that space unfolds through events and movement (Tschumi 1996) and Bruno's concept of cinematic space as an "emotional journey" (Bruno 2002), this research uses camera movement to transform spatial progression into a narrative structure.

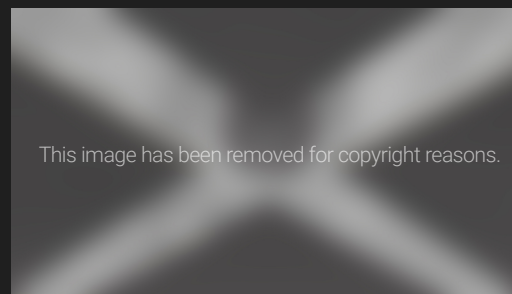


Figure 19. *Ghost in the Shell* (2017), directed by Rupert Sanders; production design by Jan Roelfs. Via FilmGrab.

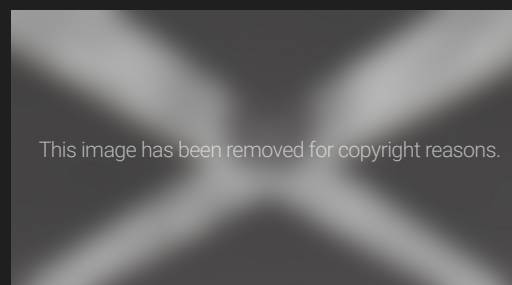


Figure 20. Carrie-Anne Moss as Trinity and Keanu Reeves as Neo in *The Matrix* (1999), directed by Lana and Lilly Wachowski; production design by Owen Paterson. Via FilmGrab.

Design Process

Sign list: Based on the semiotic framework developed in this study, signs are selected as design elements from existing cultural contexts and technological backgrounds. These signs are drawn from historical references, contemporary society, and technological developments, allowing them to be recognised and interpreted within the audience's cognitive framework.

Signs	Symbolic	Symbol	Index	Icon
Clay	Residual Humanity	Craft, Human Labour	Cracks: dryness, environmental changes	Architecture Space
Shell	Fragile body	Exchange, value, social relationships	Nature, life, protective shell	
Ancient scripts	Information Encoding	Culture, Civilisation, Social Structure	Record, archive	
Robots	Non-human subject, Desubjectivity	Efficiency, Control, Dehumanisation of Production	Algorithm, Rule, Technology System	
Letter X	Human–Technology Exploration	Technology companies, Human Future	Unknown, Uncertainty, Undefined	
Spaceship	Posthuman survival, technologically sustained life	Explore, Expand, Transcend Space	Technology, the future, transportation	
Cold	Emotional deprivation, indifference, dehumanisation	Life absence, Inorganic state	Low temperature, Metal	



Sketching: Used for the rapid exploration of formal relationships and symbolic logic, allowing spatial structures to take shape without technical constraints.

3D Modelling: Translates abstract concepts into operable structures, defining scale and proportion to test the relationship between the space and the subject.

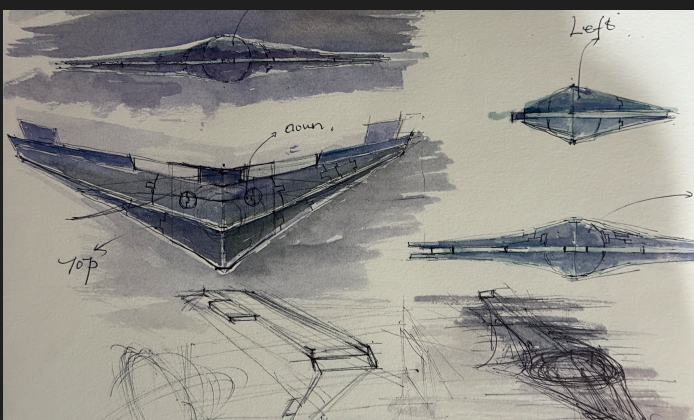


Figure 21. *Robot Nest-Sketch*.
Source: Chunlei Guo, 2025.

Figure 22. *Spaceship-Sketch*.
Source: Chunlei Guo, 2025.

Rendering: Constructs atmosphere and perceptual experience. By testing lighting and materiality, the research validates how environmental effects influence audience interpretation.

Compositing: The final stage where visual and auditory elements are integrated. Compositing functions as a validation tool, ensuring that the spatial meaning remains cohesive and immersive across a dynamic form.



Figure 23. *Neuropiano-Prop.*
Source: Chunlei Guo, 2025.

Figure 24. *Final Exhibition Video Test.* Source: Chunlei Guo, 2026.

Chapter 3. Design Development: From Symbol to Space

This chapter reflects on the design practice developed throughout this research, examining how design operates as a method for both knowledge production and theoretical testing. The project unfolded through a series of critical moments—conceptual decisions and formal experiments that document the evolution of design thinking. These moments reveal the applicability and limitations of semiotic frameworks within spatial design practice, specifically how abstract theories of posthumanism can be “spatialised” through a rigorous iterative process. Rather than focusing on a final outcome, this chapter emphasises the design process as a response to the research question.

In this study, these relationships concern the reconfigurations between human beings, technology, and environment, situated within a broader posthuman condition. Semiotics is treated here as a generative design methodology: identifying conceptual components (signified), translating them into spatial forms and materials (signifiers), and further organising these elements through composition and visual guidance to construct a system of meaning for an audience.



Figure 25. *Neurotemple–Threshold*. Source: Chunlei Guo, 2026.

3.1 Design Inquiry

At the initial stage of the project, I was influenced by *Westworld* (2016), which led me to focus on the relationship between humans and artificial intelligence. In terms of visual language, I was drawn to the spatial design of *Dune* (2021, 2024), particularly its monumental and brutalist architectural qualities.

In the first phase of design practice, I explored how physical materials could express my design concepts. I used material properties as a starting point to investigate how spatial meaning could be constructed within a science fiction context. Through this process, I considered how materials could operate as semiotic elements, connecting the human body, environment, and technological transformation.

In the second phase, I shifted my focus from material-based exploration to the relationship between humans and technological systems. This transition led me to adopt digital design methods, which allowed me to explore non-human spatial conditions more directly. During this stage, I engaged with posthumanist ideas and began to consider how design could express non-human subjectivity.

Rather than relying on a predefined script or narrative, I developed the project through the accumulation of fragmented design ideas and conceptual experiments. I used semiotic theory as a generative framework, translating abstract concepts into spatial forms and organising them into a system of meaning.

Through this iterative process, I gradually established a clearer design direction centred on the relationship between humans and artificial intelligence, extending toward themes of consciousness and spatial perception. This process ultimately led me to construct a speculative world as the conceptual foundation for the final design project.

3.2 Material as Symbolic Exploration

Clay and Shell: Within speculative visions of a technologized future, a central concern is how human subjectivity avoids being reduced to a computable system. This prompted a reconsideration of how materiality could differentiate between human and machine conditions. Clay and shell were selected as the primary materials in this first design experiment, not for aesthetic preference, but through a semiotic rationale.

Clay refers to early human construction shaped by the environment and manual labour. In agrarian societies, earth-based materials symbolised a direct relationship between space, the human body, and the environment. Even in contemporary construction, these relationships persist through materials like concrete. Shell, by contrast, functioned historically as a medium of exchange and social trust, as argued by David Graeber in *Debt: The First 5,000 Years* (Graeber 2012). Here, the shell signifies not only economic function but also early forms of social connectivity.

This approach is informed by spatial narratives in science fiction works such as *Foundation*, where peripheral locations like “Terminus” represent groups marginalised by centralised power



Figure 26. *Clay and Shell*.
Source: Chunlei Guo, 2025.

Figure 27. *Great Mosque of Djenné, Mali*. Photograph by BluesyPete, 2007. CC BY-SA 3.0, via Wikimedia Commons.

structures (Foundation, S01, E01, 2021). The manual manipulation of clay introduced a degree of randomness that resists computational precision. However, this stage revealed a key limitation: the symbolic associations of primitive materials are often interpreted as nostalgic rather than speculative. This tension initiated a shift towards negotiating the relationship between material narrative and future spatial aesthetics—asking how traditional symbols can be technologically mediated without losing their human trace.

Ghost (Shadow): Inspired by Caillebotte's *Paris Street; Rainy Day*, this experiment explores the ontological status of AI. In the painting, rainwater creates strong reflections while shadows are diminished, suggesting an alternative perceptual hierarchy. Within a Chinese cultural context, the absence of a shadow is associated with ghosts—non-physical entities.

When considered alongside *Ghost in the Shell* (2017), where consciousness is detached from the biological body, "shadowlessness" can be interpreted as a condition in which human attributes are diminished. This is reflected in the featureless training construct in *The Matrix* (1999), where the absence of shadow

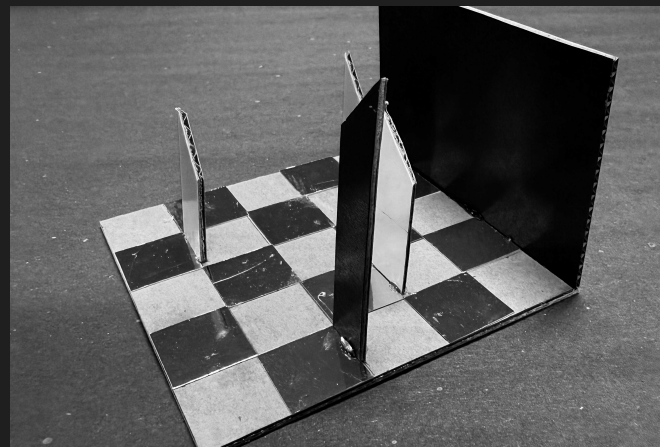


Figure 28. *Materials Testing*.
Source: Chunlei Guo, 2025.

Figure 29. Gustave Caillebotte,
Paris Street; Rainy Day, 1877.

eliminates cues like scale and orientation, signifying disembodiment.

The design employs an alternating system of matte and reflective materials with controlled lighting to fragment or suppress shadows. These disrupted shadows function as spatial signs indicating the instability of human subjectivity within a posthuman condition. However, critical reflection revealed that the strategy relied too heavily on metaphor without establishing an explicit connection to a future-oriented spatial language. Future iterations would require a stronger alignment between formal generation and lighting logic to signal a technologically mediated environment rather than a conceptual abstraction.

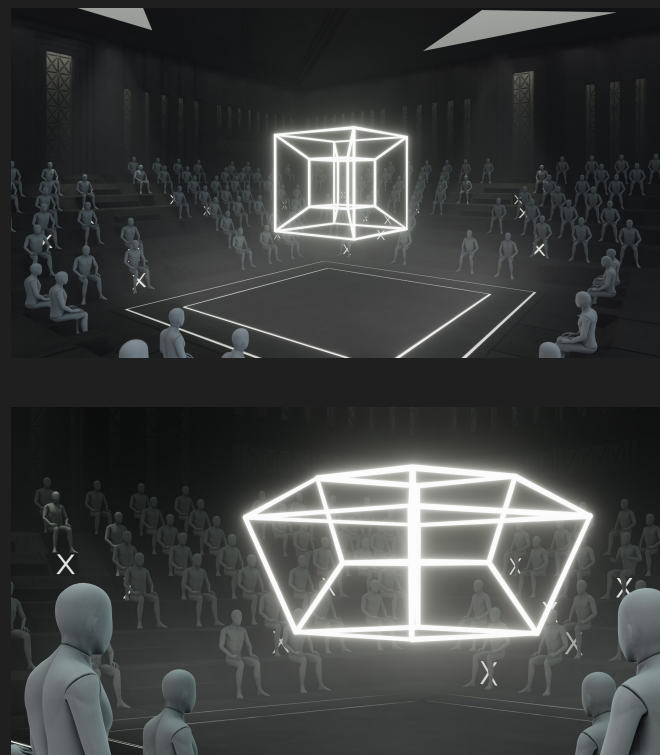


Figure 30. *Five-dimensional Space*.
Source: Chunlei Guo, 2026.

3.3 Spatial Form and Cultural Symbol

Characters and Shadow: Text is one of the most stable sign systems for recording human knowledge. However, in posthuman contexts, the status of text as an exclusively human medium is challenged. This experiment adopts text as a central semiotic element to explore the vulnerability of human knowledge systems.

In the design process, laser-cutting was used to produce hollowed-out textual forms. Text no longer exists as a solid object but is perceived indirectly through projected shadows. As light shifts, these shadows become unstable and transient, suggesting the fluidity of human knowledge in technologically advanced environments.

Initially, this functioned as an installation-based expression—a recoded trace of human civilisation. Yet, iterative reflection showed that while the semiotic logic was coherent, the spatial articulation remained underdeveloped. The strategy was confined to a localised intervention rather than a coherent spatial system. This marked a shift: moving beyond treating symbols as objects of visual perception and instead embedding them within the generative logic of the space—reconsidering how massing, scale, and

circulation can be informed by semiotic principles.



Figure 31. *Ancient Scripts-01*.
Source: Chunlei Guo, 2025.



Figure 32. *Ancient Scripts-02*. Source: Chunlei Guo, 2025.

Triangular Pyramid: This design utilises the architectural archetype of the pyramid, associated with death and systems of control exceeding human scale.

In science fiction, the pyramid is frequently recontextualised; for instance, in *Stargate*, it is an alien transport device—a symbolic intersection between ancient civilisation and advanced technology.

In this design, the pyramid is an “intelligent apparatus” of control and judgment. The surface, composed of rationalised perforated lines, suggests a technologically mediated system. The dominant use of black reinforces a sense of inaccessibility, while internally illuminated pathways create a visual tension between attraction and control. By dividing the pyramid into four directions, a cruciform circulation system forces the viewer into a decision-making condition.

However, the pyramid’s strong cultural recognition pre-structured the interpretation, limiting the “openness” of the reading. Highly symbolic forms, if not supported by carefully orchestrated sequences,

weaken their potential to function as narrative mechanisms within cinematic space.



Figure 33. *Supercomputer Center—Exterior*. Source: Chunlei Guo, 2025.

Figure 34. *Supercomputer Center—Interior*. Source: Chunlei Guo, 2025.

3.4 Human–Technology Condition

Robots' Nest: In science fiction, robots often indicate the diminishing position of human subjectivity. To explore a decentred, non-human spatial condition, this experiment proposes a speculative living environment for autonomous robots governed by a centralised computational intelligence.

The design is articulated as a porous architectural structure composed of multiple cylindrical towers. A central vertical core functions as an elevator shaft, while the surrounding spaces operate as charging zones. These energy systems function as indexical signs, indicating the robots' dependency on systemic regulation. At the symbolic level, the spatial system operates as a self-contained mechanical ecology, representing a closed system that functions independently of human intervention.

The architectural form visually resembles a biological nest, drawing on iconic signification through formal similarity. This resemblance is a critical gesture—suggesting that machines, like parasitic organisms, have occupied and reorganised human environments. However, peer feedback revealed that the external form unintentionally resembled a bicycle helmet. From a semiotic perspective, this highlights the dominance

of iconic interpretation, where visual similarity produces unintended associations. Furthermore, the internal columnar structures did not effectively support the spatial narrative; the visual disjunction between the semi-circular upper structure and the rectangular base weakened the compositional unity, highlighting the necessity of aligning semiotic strategy with perceptual clarity.

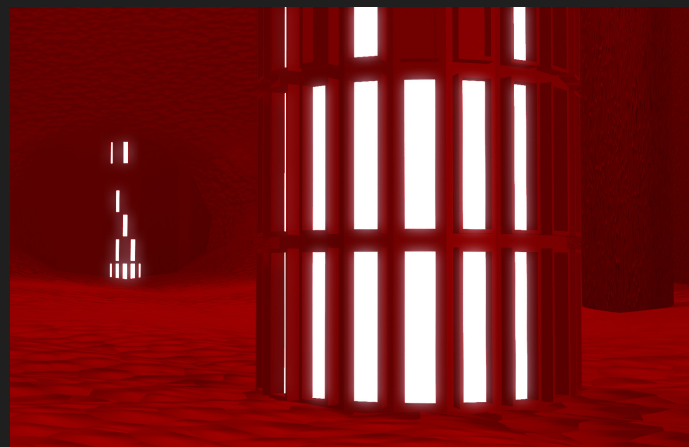


Figure 35. *Robots' Nest—Interior Render*. Source: Chunlei Guo, 2025.

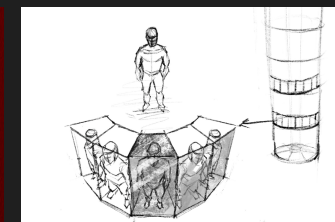


Figure 36. *Robots' Nest—Interior Sketch*. Source: Chunlei Guo, 2025.



Figure 37. *Robots' Nest—Exterior 3D Print*. Source: Chunlei Guo, 2025.



Figure 38. *Post-Living City-01*. Source: Chunlei Guo, 2026.

3.5 Transition to Final Project

Throughout the design process, I gradually shifted from exploring physical materials to constructing digital environments. This transition became a critical turning point in my practice. Initially, I approached spatial expression through tangible materials, but as the project developed, I began to recognise that digital modelling not only offered greater flexibility, but also fundamentally transformed my understanding of “materiality.” Materials were no longer confined to physical properties, but became spatial media that could be reconfigured and controlled.

From a semiotic perspective, materials inherently function as signifiers. However, in science fiction spatial design, meaning does not emerge from isolated elements, but from the relationships between them. Spatial scale, layout, lighting, and atmospheric conditions, together with the interaction of architectural elements, collectively shape how meaning is generated and perceived. Through virtual spatial simulations, I was able to test narrative potential more efficiently and observe how different spatial configurations influence the viewer’s perceptual pathway and interpretation.

Through this process, I realised that the key to science fiction spatial design lies not in the application of individual symbols, but in constructing a relational system with internal logic. Such a system not only organises visual information but also guides the viewer’s movement and experience, allowing meaning to unfold over time. Within a posthuman framework, this system must also respond to the shifting relationships between humans, technology, and the environment, where space is no longer centred solely on the human subject but becomes a site of multiple intersecting conditions.

In attempting to spatialise the relationship between humans and technology, I initially looked to historical references or extrapolated future scenarios from present conditions. However, these approaches often remained at the level of signifiers—reproducing familiar visual codes—without engaging deeper processes of meaning construction. As a result, my focus shifted toward the generation of the signified: exploring how spatial organisation can produce meaning through experience, rather than merely represent it.

Based on this shift, I began to understand space as a dynamic semiotic system, in which form, material, and structure operate not as isolated components but as interrelated elements that collectively generate narrative and meaning. This realisation led me to consolidate strategies developed across earlier design experiments into a coherent spatial system, which was further developed in the final design project to explore the relationships between consciousness, technological mediation, and posthuman spatial conditions.

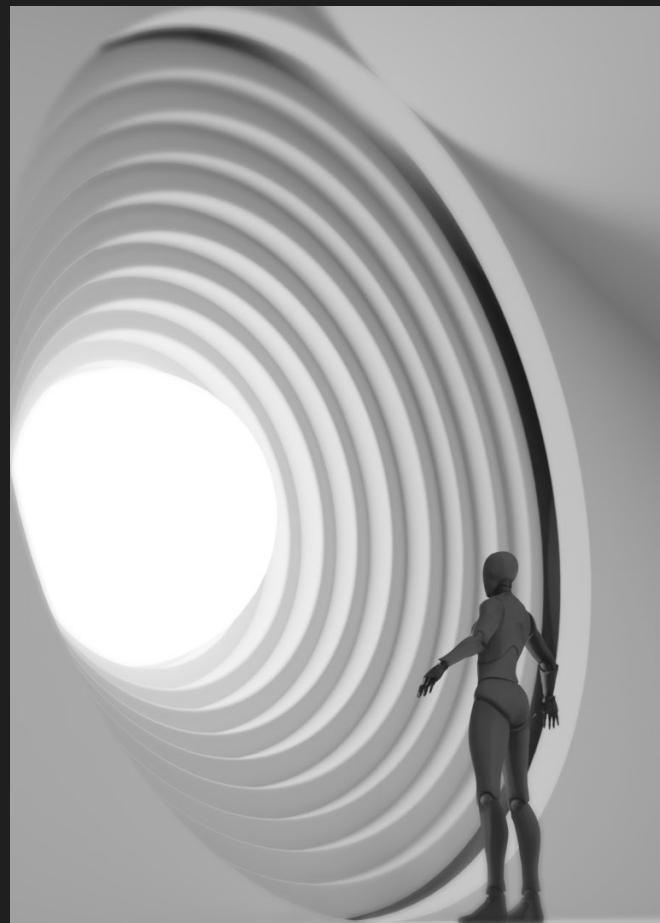


Figure 39. *AI2079*. Source: Chunlei Guo, 2026.

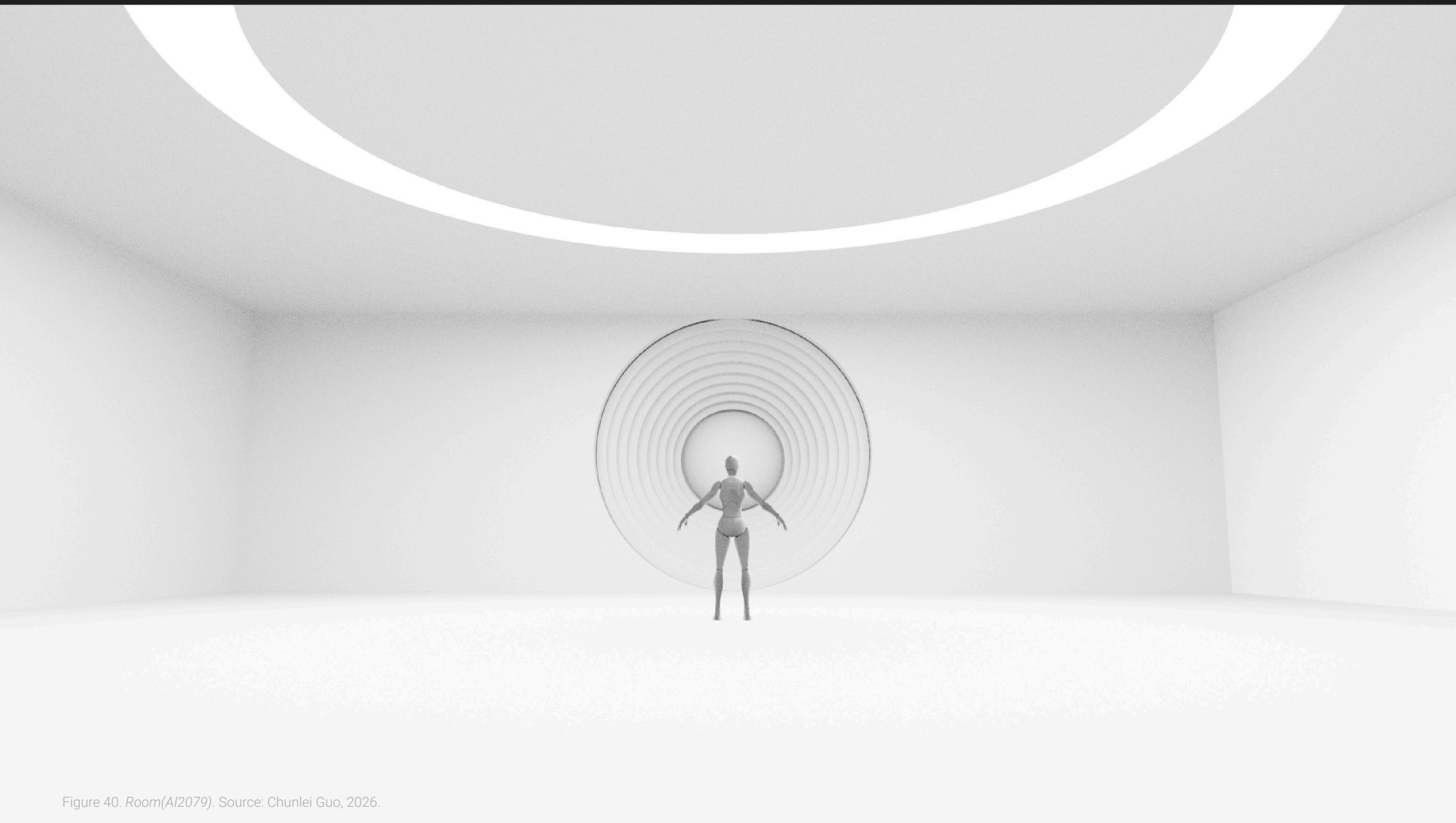


Figure 40. *Room(AI2079)*. Source: Chunlei Guo, 2026.

Chapter 4: We Were Once Human

The world-building in this project is not derived from a single narrative source, such as a novel or script, but emerges from the design process itself as a synthesis of spatial experimentation and narrative reflection. This practice-led approach allows the world to function as the “narrative signified,” where the speculative context is built directly through the development of spatial signifiers.

4.1 World Description

The project is situated in a future context beyond 2079, where artificial intelligence has replaced human labour and reorganised society into a highly integrated technological system. As humans increasingly rely on AI-driven infrastructures for survival, subjectivity becomes destabilised, leading to a loss of purpose and meaning. Drawing on Elon Musk’s views in discussions of automation (Musk n.d.), in a post-work era, the central challenge for humanity may shift from survival to the construction of meaning.

In this study, this scenario does not function as a narrative background, but as a design driver that informs the construction of spatial and symbolic systems. By introducing a virtual environment, human consciousness is translated into data and embedded within the system, allowing it to remain engaged in technological processes. Within this feedback loop, human behaviour is converted into data to generate non-human entities, further blurring the boundary between biological and technological systems. As a result, space is understood not as a neutral container, but as a signifying system that expresses posthuman conditions.

Within this context, the Neurotemple functions as a transitional architectural system that connects the human body with computational networks. It serves not only as an entry point to the virtual world but also as a spatial mechanism through which a system of signs constructs a narrative of the relationships between consciousness, data, and environment.

This world-building framework provides the conceptual foundation for the final design, enabling the spatial system to articulate relationships between consciousness, control, and posthuman conditions of existence.



Figure 41. *Neurotemple—Exterior 02*. Source: Chunlei Guo, 2026.

4.2 Spatial System

This design is inspired by the work of Renato Nicolodi, whose practice utilises archetypal structures to foreground the viewer's own state of consciousness. This strategy of de-functionalised space shifts the viewer's attention from "use" to "perception," foregrounding awareness of their own state of consciousness. Based on this research, this study translates this strategy into a spatial design method by weakening functional logic and strengthening the symbolic attributes of space, allowing it to operate as a perceptual field that points toward consciousness and existence.

A robotic flying device is introduced within the space, moving through the entire environment. In a posthuman context, this non-human subject is integrated into the spatial system, functioning as a narrative agent that links spatial sequences.



Figure 42. *Neurotemple—Interior 04*. Source: Chunlei Guo, 2026.

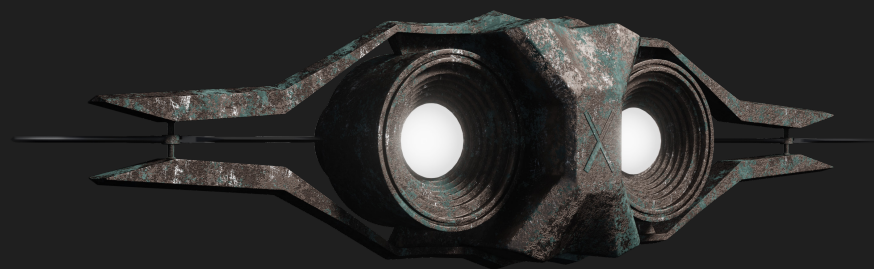
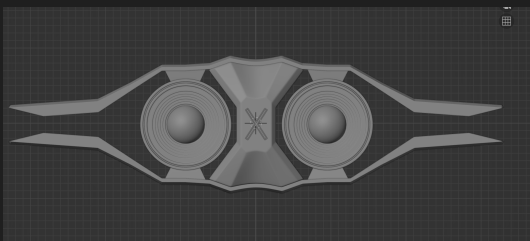
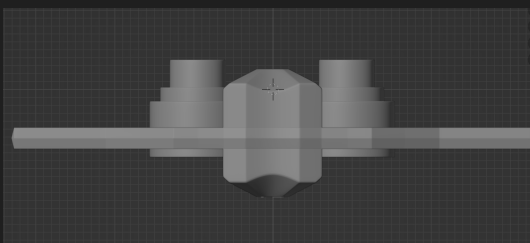
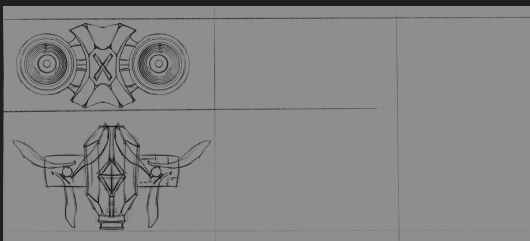


Figure 43. *Robotic Flying Device*. Source: Chunlei Guo, 2026.

The architectural space is organised into **three** sequential zones:

The Exterior: Placed within an empty landscape, symbolising the isolation and the detachment of emotion in a posthuman era.

The Interior Corridor: A narrow passage that creates a sense of oppression. The cold grey concrete walls function as indexical signs reflecting the continuation of human culture within a future social structure.

The Core Zone: A central stage constructs a ritualised spatial structure. This circular stage acts as an icon of a “central stage,” positioning the human as an object of observation. This organisation reinforces the relationship between collective gaze and power, allowing viewers to become part of the observed condition.

The four walls incorporate ancient scripts from four early civilisations. This is a design strategy grounded in semiotics, where ancient scripts—as early systems of human encoding—are placed alongside digital and technological environments. This arrangement reflects the coexistence of cultural identities and suggests a

continuity between different modes of information construction, pointing to the blurred boundary between humans and technology.

The “X” symbol runs throughout the design as a central symbolic strategy. At a symbolic level (as defined by Peirce), X points to the “unknown” in mathematics and references the influence of technological powers like SpaceX and xAI. Through the spatialisation of this symbol, abstract states of consciousness are translated into a perceptible spatial order.

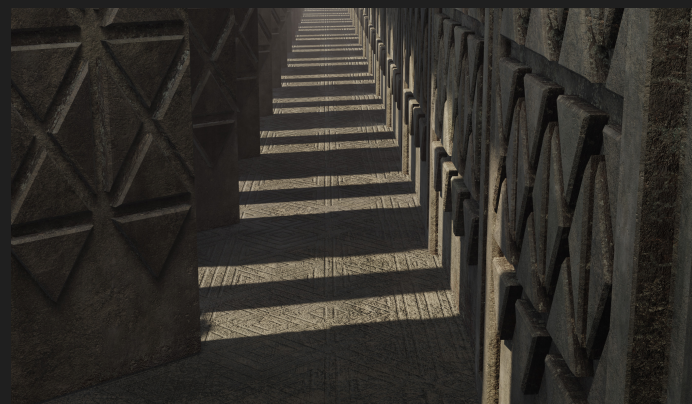


Figure 44. *Neurotemple—Interior 05*. Source: Chunlei Guo, 2026.

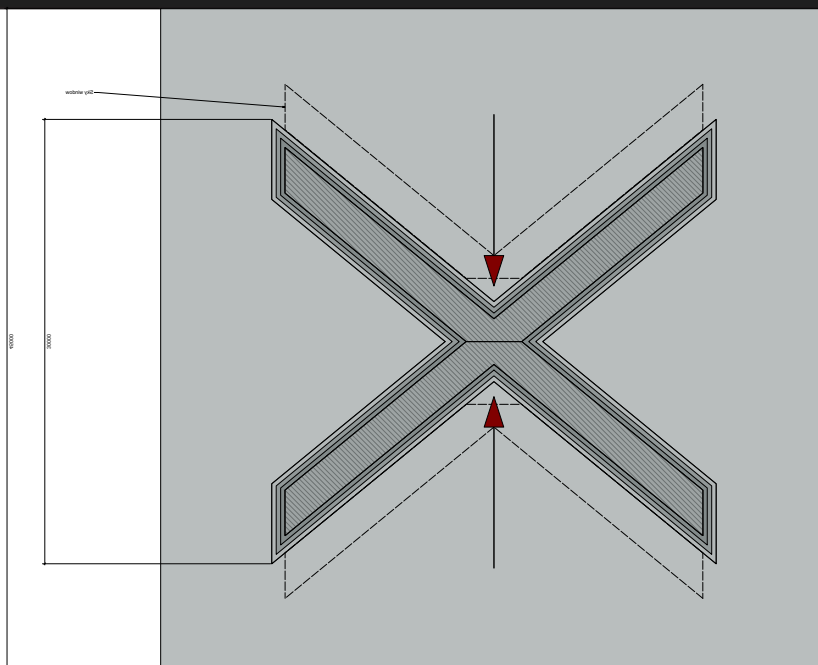


Figure 45. *Neurotemple-Skylight Detail*. Source: Chunlei Guo, 2026.

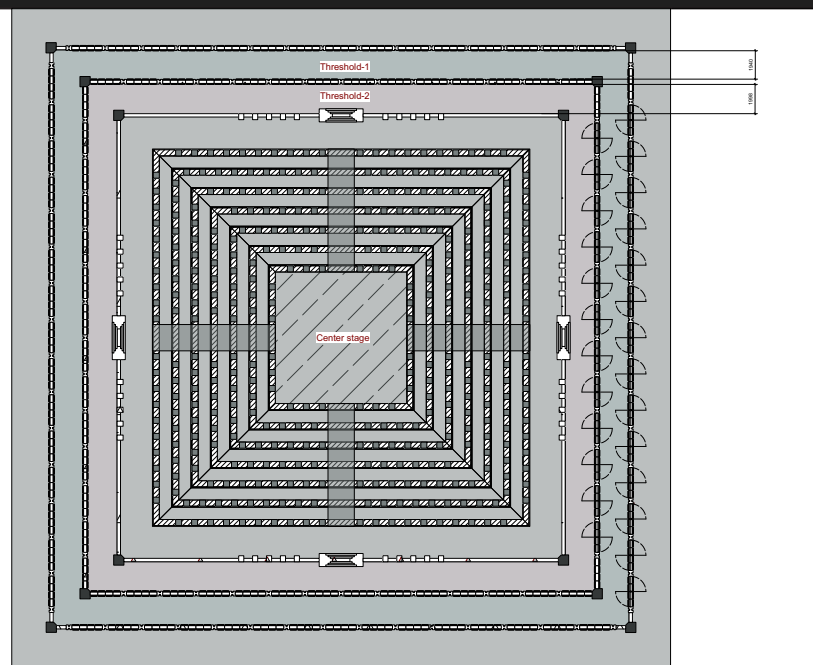


Figure 46. *Neurotemple-Floor Plan*. Source: Chunlei Guo, 2026.

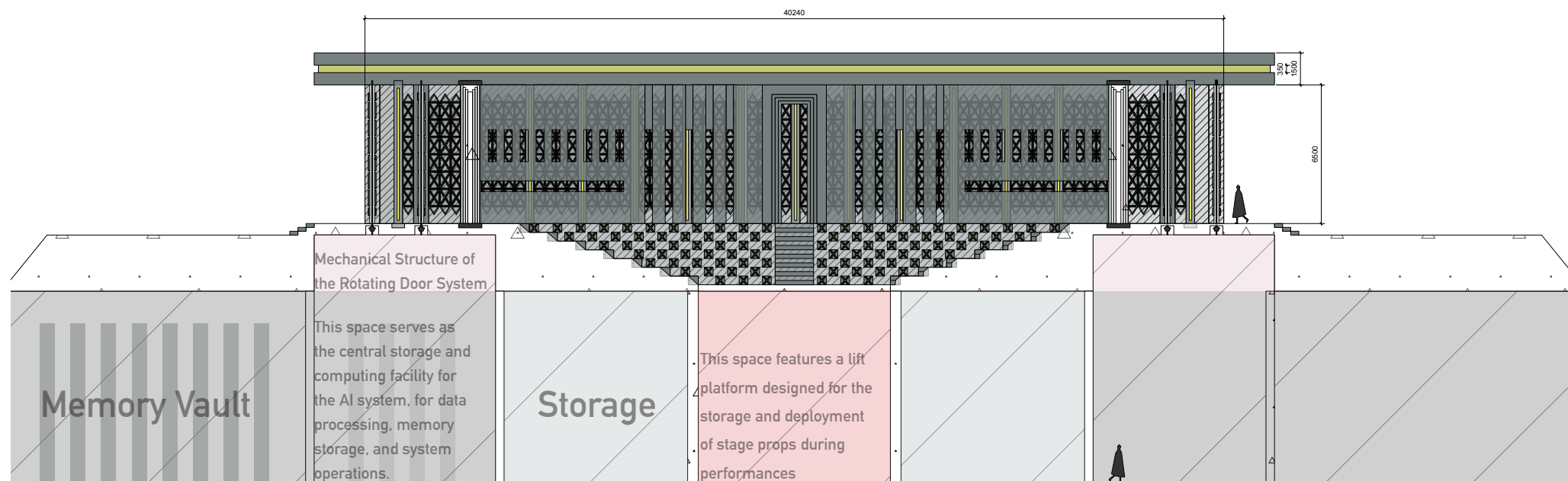


Figure 47. Neurotemple—Section. Source: Chunlei Guo, 2026.



Figure 48. *Neurotemple-Interior 06*. Source: Chunlei Guo, 2026.

4.3 Consciousness Upload

Within the space, audience seating incorporates concealed neural transmission devices designed to connect the human brain to a computational system. This device functions as an indexical sign of the coupling between the human brain and the computational system. Its design draws on the referential function of signs, transforming a technological apparatus into part of the spatial structure, allowing the act of connection to be directly perceived within the environment.

This configuration references the neural interface in *The Matrix* (1999), through which individuals enter virtual space, as well as the mechanism of consciousness transfer via head-mounted devices in *The Peripheral* (2022). In this design, the connection is further spatialised: entering the space simultaneously means entering the system, thereby reinforcing the passive position of the human within a hierarchy of technological power.

The exit from the virtual world is also located within the Neurotemple, yet presents a contrasting spatial atmosphere. The space shifts from compression to openness and brightness, where the introduction of glass materials and natural light creates a sense of

visual transparency and spatial extension. Elements such as the city, sunlight, and grass form an idealised landscape, producing the impression of a return to nature and the past, thereby obscuring the underlying mechanisms of technological control. In this process, human subjectivity is gradually embedded within information networks.

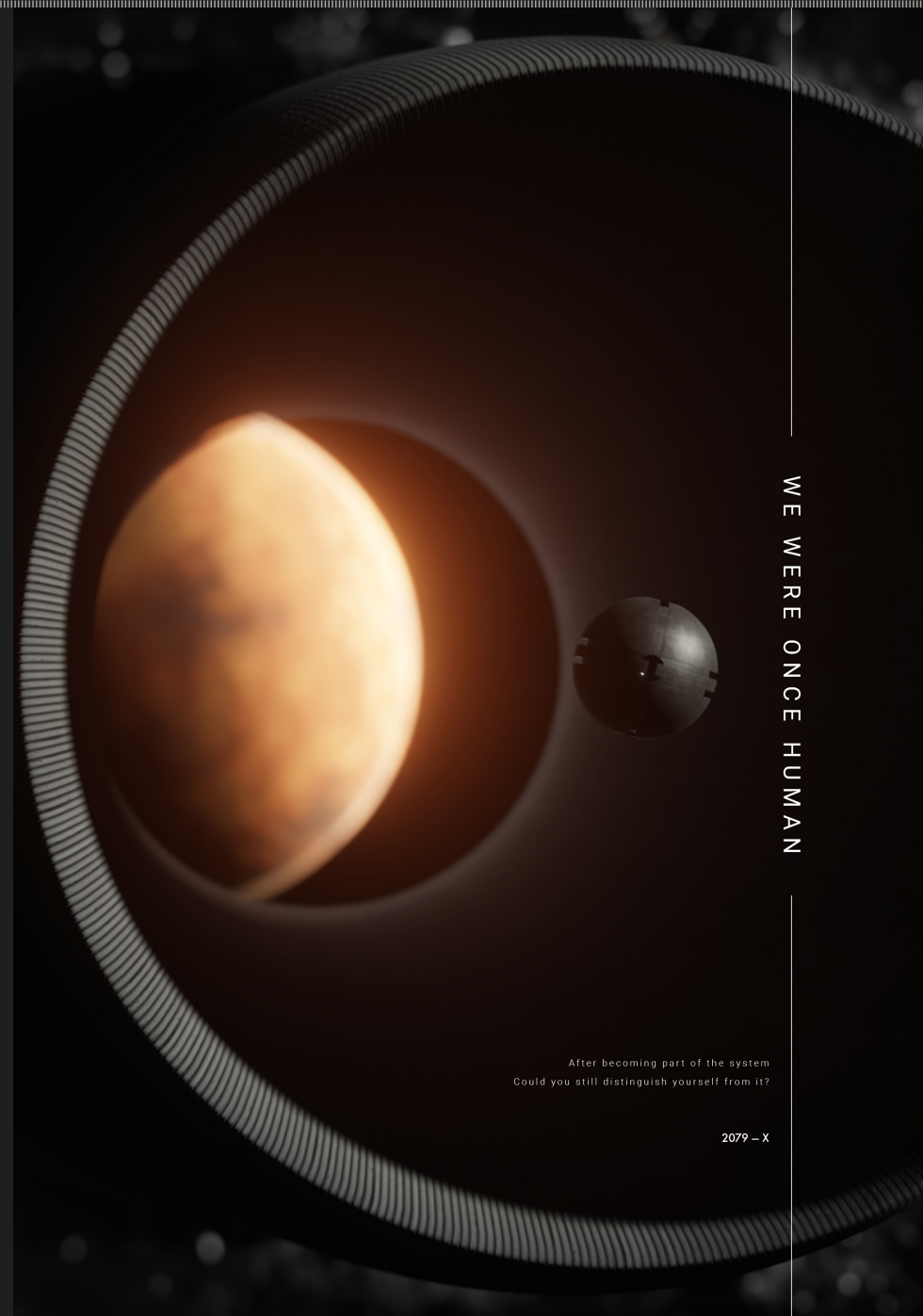


Figure 49. *Neurotemple—Consciousness Upload*. Source: Chunlei Guo, 2026.

4.4 Spacecraft / Transition

The transition system between Earth and Mars is not merely a technological device, but a symbolic construction that redefines space. The exploration of Mars, as a culturally situated construct, carries associations of expansion, technological advancement, and projections of the human future. In this context, the magnetic acceleration structure functions as an index of technological intervention, signifying the compression of distance and the reconfiguration of space-time, as reflected in works such as *Total Recall* (1990) and *The Expanse* (2015–2022).

This transition does not represent a literal process of movement, but is constructed through the organisation of a system of signs that guides the perception of spatial extension. Spatial transformation is therefore defined not by physical displacement, but by the meanings generated through spatial organisation. In contrast to instantaneous “consciousness space,” this system emphasises a materially grounded and temporally extended process. The use of a monochromatic palette and exaggerated scale further diminishes the position of the human body, presenting space as a signifying system that articulates posthuman conditions.



WE WERE ONCE HUMAN

After becoming part of the system
Could you still distinguish yourself from it?

2079 – X

Figure 50. *Spaceship*. Source: Chunlei Guo, 2026.

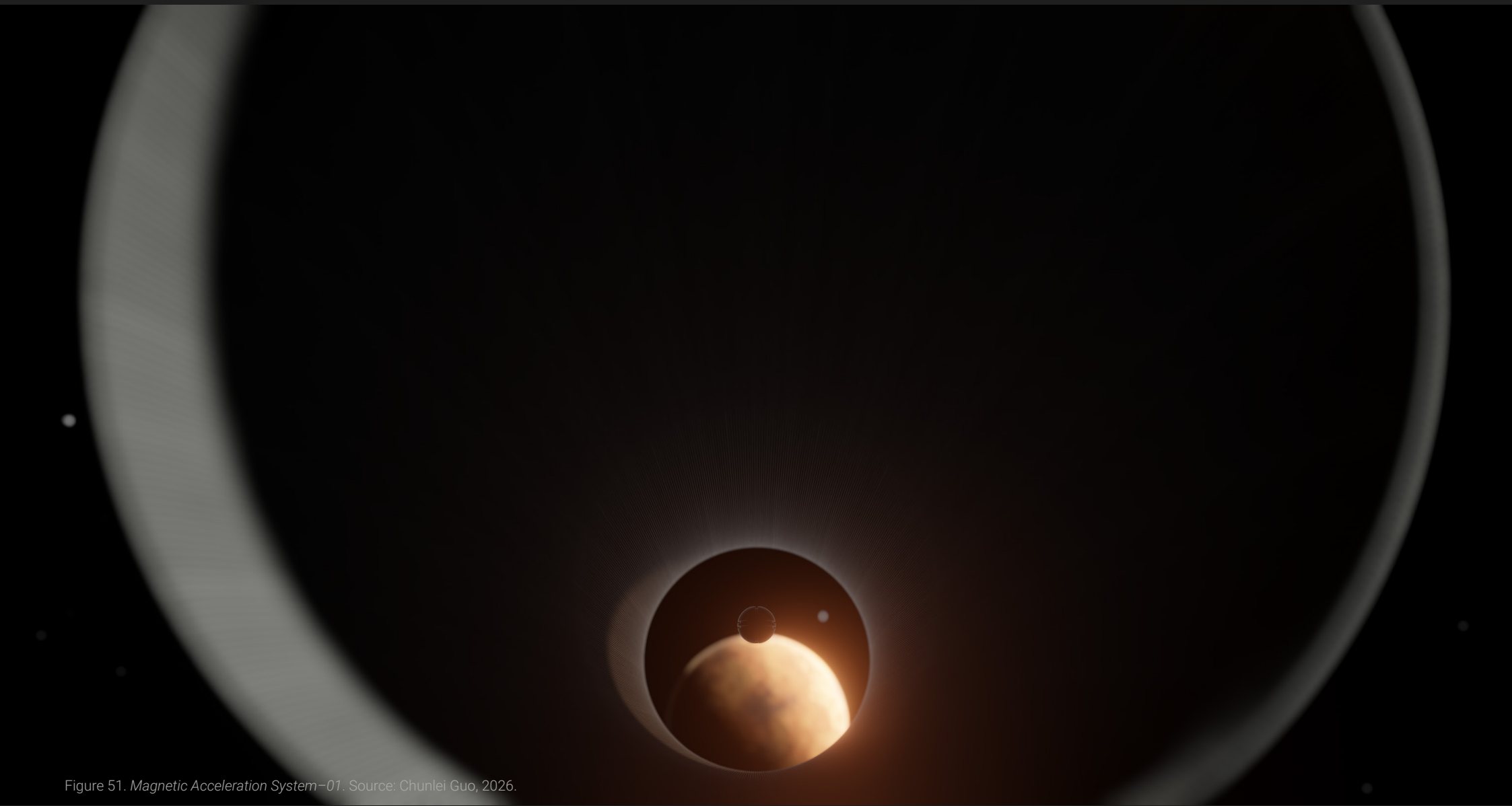


Figure 51. *Magnetic Acceleration System-01*. Source: Chunlei Guo, 2026.

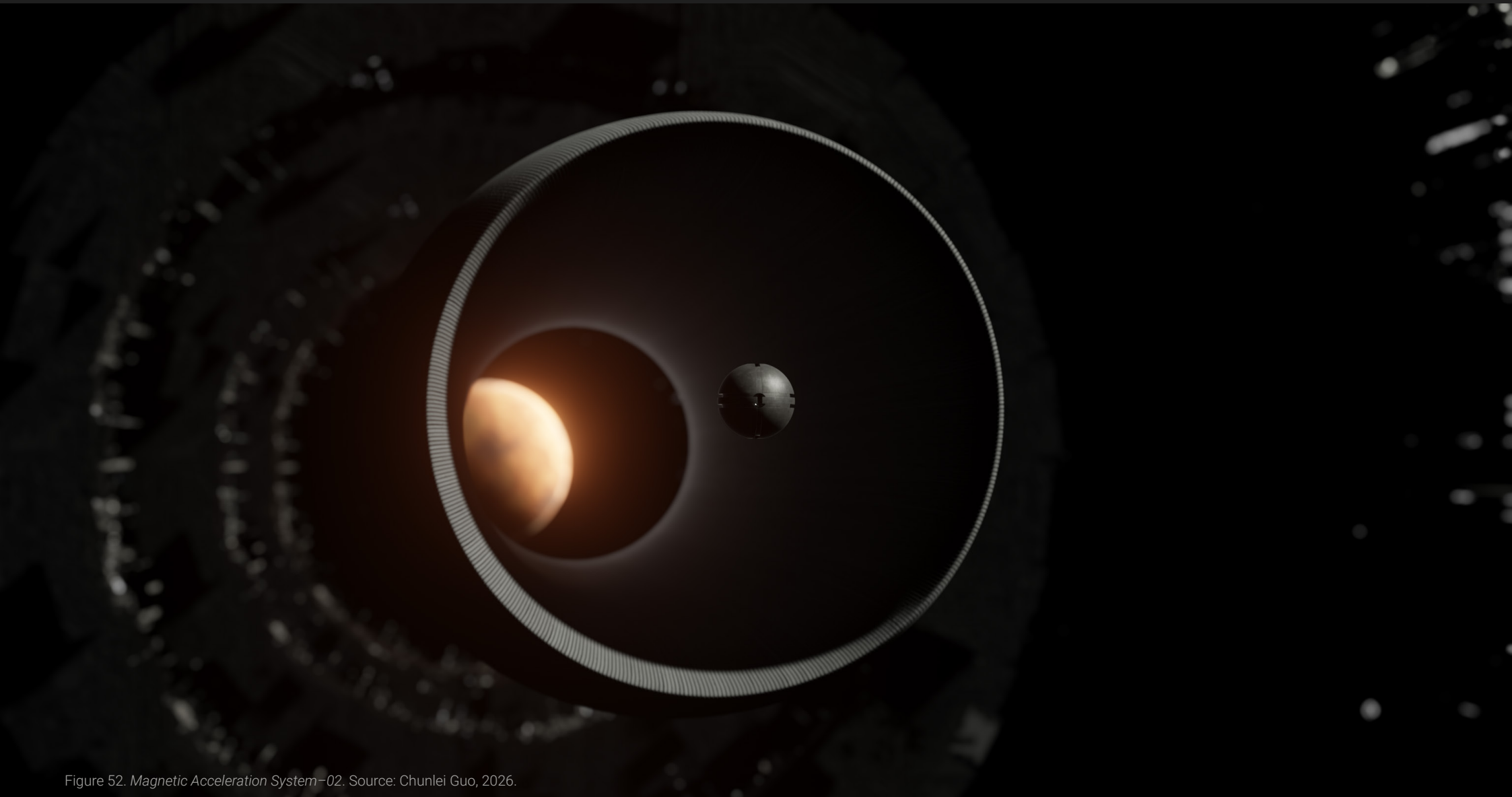


Figure 52. *Magnetic Acceleration System-02*. Source: Chunlei Guo, 2026.

4.5 Reflection and Future Possibilities

This project constructs a posthuman field of consciousness through a ritualised spatial language, expressing the symbiotic relationship between humans, technology, information, and the environment. The design emphasises the perception of signs through change, allowing spatial meaning to gradually emerge through the act of viewing, thereby shifting signs from simple denotative meanings to more complex, affective connotations.

In this process, the configuration of spatial experience plays a critical role in shaping narrative outcomes. The sequencing of spatial conditions influences how signs are perceived and interpreted, thereby affecting the coherence of the spatial narrative. This indicates that further refinement is required to establish stronger alignment between spatial progression and narrative development.

Future design practice can be extended to environments beyond Earth, such as Mars. Under the constraints of extreme climate and material requirements, Mars functions as a symbolic condition that reveals the instability and fluidity of spatial meaning. Due to the absence of familiar environmental references, the audience's modes of

perception would also be challenged, requiring spatial systems to be redefined through symbolic elements.



Figure 53. *Neurotemple—Interior 07*. Source: Chunlei Guo, 2026.

Figure 54. *Neurotemple—Interior 08*. Source: Chunlei Guo, 2026.

Chapter 5: Discussion & Conclusion

This chapter revisits the research question based on the preceding analysis and design practice, summarises the key findings, and clarifies the theoretical and practical contributions of the study. It also further discusses the implications of the results for science fiction spatial design practice, thereby responding to the overall aims of this research.

5.1 Revisiting the Research Question

This study examines how spatial design in science fiction cinema functions as a semiotic system for the construction of narrative meaning. The findings indicate that spatial narrative emerges dynamically through the organisation of signs, the configuration of spatial experience, and the processes of audience perception and interpretation. Within this framework, space operates not only as a medium for conveying meaning but also as an interface between perception and narrative, through which narrative unfolds progressively through the interaction between the viewer and the spatial environment.

5.2 Key Findings

Spatial design in science fiction cinema can be understood as a signifying system that actively participates in narrative construction. By integrating historical, contemporary cultural, and technological signs, future-oriented sign systems are constructed, through which meaning is encoded in spatial design. These spatial signs not only describe environmental conditions, but also reflect social structures, power relations, and technological contexts.

Space plays an autonomous role in narrative construction. It not only supports narrative but also generates narrative structures through spatial sequencing. Grounded in the cultural dimension of signs, space can be understood as a medium for the unfolding of memory, thereby enhancing affective engagement.

Within a posthuman context, spatial design operates at a philosophical level. Space no longer serves solely the human subject, but instead reflects the reconfiguration of relationships between humans, technology, and the environment.

The study also finds that, although the interpretation of signs depends on the audience's cultural knowledge, newly constructed signs can likewise function as carriers of ideology. Particularly within artistic practice, symbolic strategies enable the critique and communication of social ideologies.

5.3 Contribution to Knowledge

At the theoretical level, this study integrates spatial design with semiotics, proposing a framework for a spatial sign system. By linking the decoding of signs with spatial experience, this approach enables space to be imbued with perceptual meaning.

At the methodological level, the research establishes a clear pathway for translating signs into spatial design. This approach emphasises not only the interpretive capacity of space, but also its generative potential, positioning design as a form of knowledge production. In doing so, it offers new perspectives for film designers and students.

Through design practice, this study engages with posthumanist concepts and invites reflection on human values in relation to technological development and ecological challenges.

Furthermore, by integrating science fiction cinema, semiotics, and spatial design into a unified framework, the study establishes interdisciplinary connections and provides a foundation for future research.

5.4 Implications for Design Practice

Design should not only focus on function and form but also on the expressive capacity of space as a semiotic system. Through the design of space itself and the organisation of spatial sequences, designers can actively construct meaning and narrative, forming a guiding design approach that directs audiences toward an intended interpretation.



Figure 55. *Neurotemple—Skylight*. Source: Chunlei Guo, 2026.

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Appendix: Final Exhibition

The final exhibition was designed to extend the research into cinematic spatial narrative and audience perception beyond a conventional screen-based presentation. The installation aimed to create an immersive spatial experience in which the audience could enter the world of the work both physically and psychologically.

After several rounds of testing, the final work was presented in the Visual Production Studio at Auckland University of Technology. The large screen strengthened the perception of architectural scale and atmosphere, while controlled lighting further supported the immersive experience.

The exhibition structure followed the spatial narrative of the project. The audience first encountered the work from outside and then gradually crossed thresholds into the interior system. This sequence reflected the installation's focus on spatial progression, audience movement, and the role of perception in constructing narrative.

The film was structured around three periods: past, present, and future. The past (memory) reflects on earlier human civilisation and anthropocentric

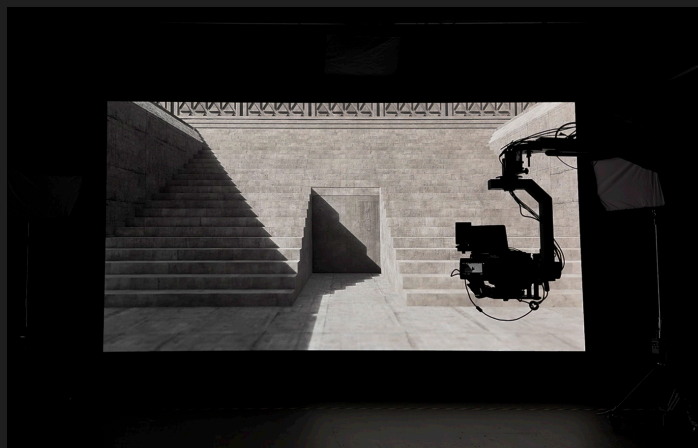


Figure 1. *Exhibition installation view1*,
Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.

thinking. The present (2079) shows humanity being controlled by technology through consciousness upload, marking a shift towards a non-human-centred condition. The future (searching) explores humanity's place in a technological age.

The spatial design was also developed through a system of symbolic signs, with the X acting as a recurring element across space and time. The metal piano, formed like an interconnected neural network, suggests a world in which humans are no longer the primary controllers but are increasingly controlled by AI. The synchronised flashing X symbols on the audience seating suggest an active system of code and computation. The X also appears in the architectural skylight and through projected light and shadow, where it represents an ongoing exploration of the unknown and a broader philosophical questioning.

The exhibition was not only a way of presenting the final work but also part of the research methodology. It allowed the spatial narrative to be experienced through visual movement, perception, and immersion, while providing a way to test the ideas explored through the research.



Figure 2. *Exhibition installation view2*, Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.

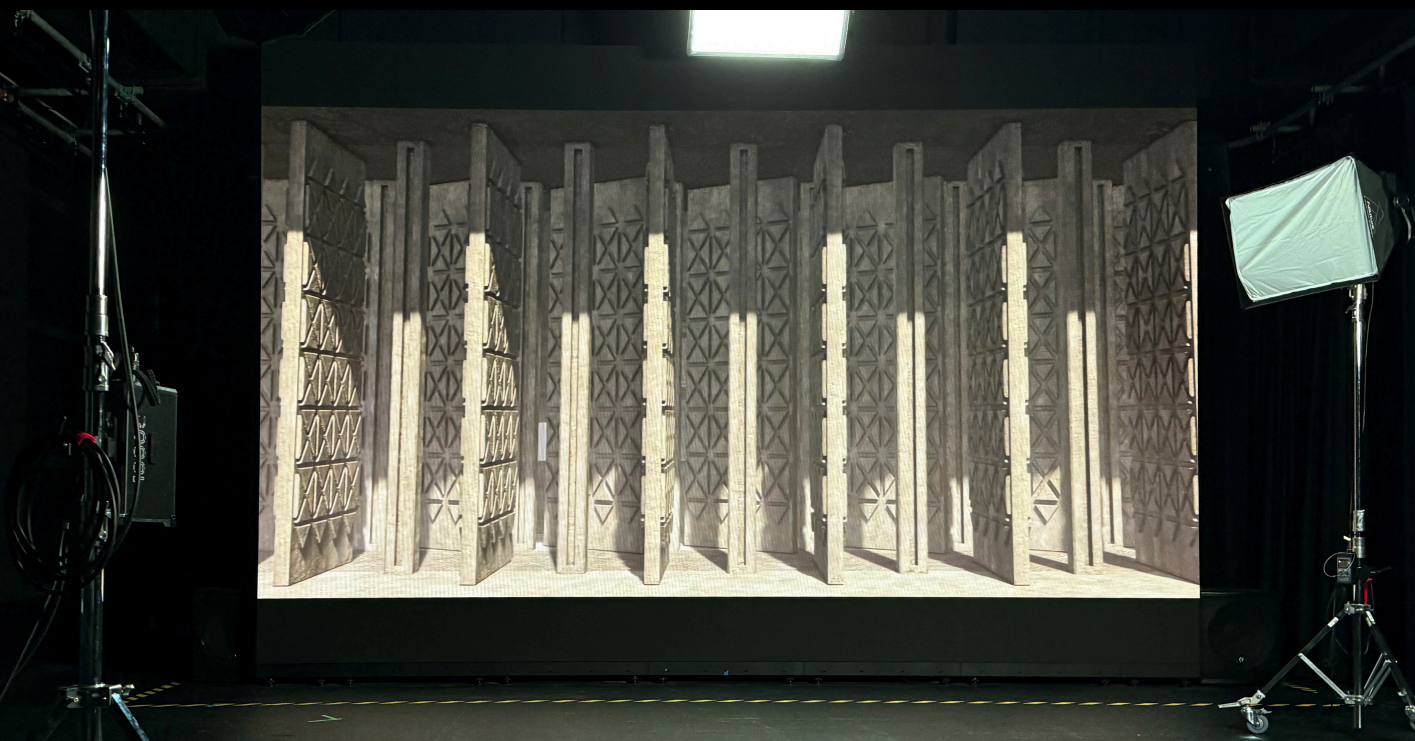


Figure 3. *Exhibition installation view3*, Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.

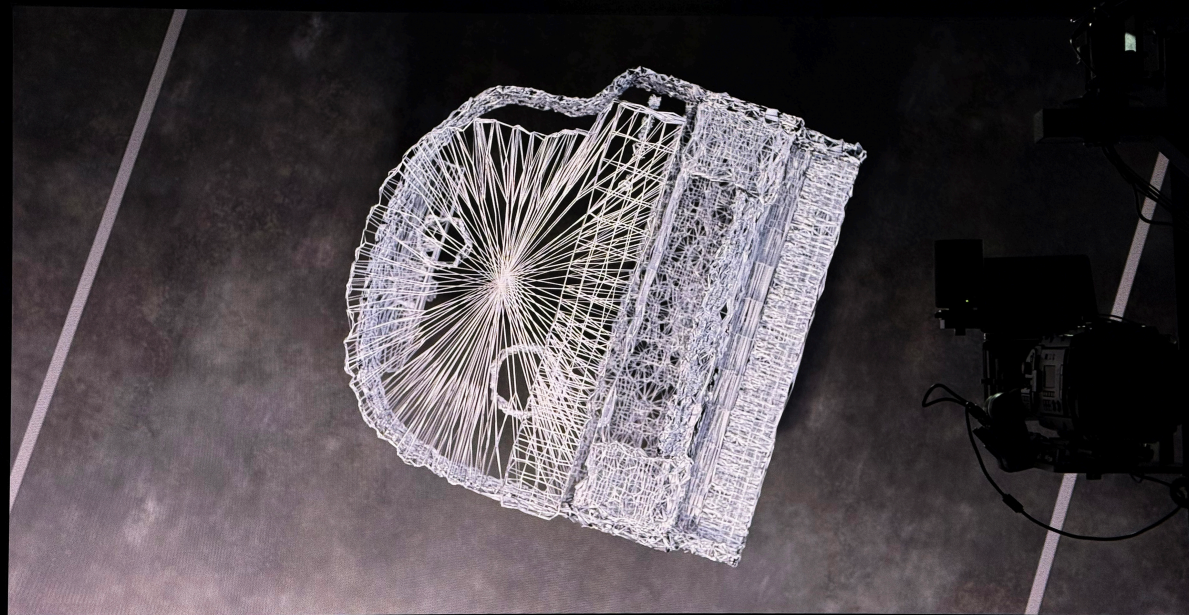
Figure 4. *Exhibition installation view4*, Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.

Figure 5. *Exhibition installation view5*, Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.



The video was designed and produced specifically for the resolution requirements of the Visual Production Studio. The accompanying on-site photographs therefore provide a useful reference for the visual quality and spatial presentation of the final work.

Figure 6. *Exhibition installation view6*, Visual Production Studio, AUT.
 Photograph by Chunlei Guo, 2026.



Music Credits

Piano — Julian_Eftei

Freesound, Sound ID 554297

Used: 00:02:37–00:03:35

Licensed under Creative Commons Attribution-
 NonCommercial 4.0 International (CC BY-NC 4.0)

Source: Freesound



Figure 7. *Exhibition installation view7*, Visual Production Studio, AUT.
 Photograph by Chunlei Guo, 2026.



Figure 8. *Exhibition installation view8*, Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.

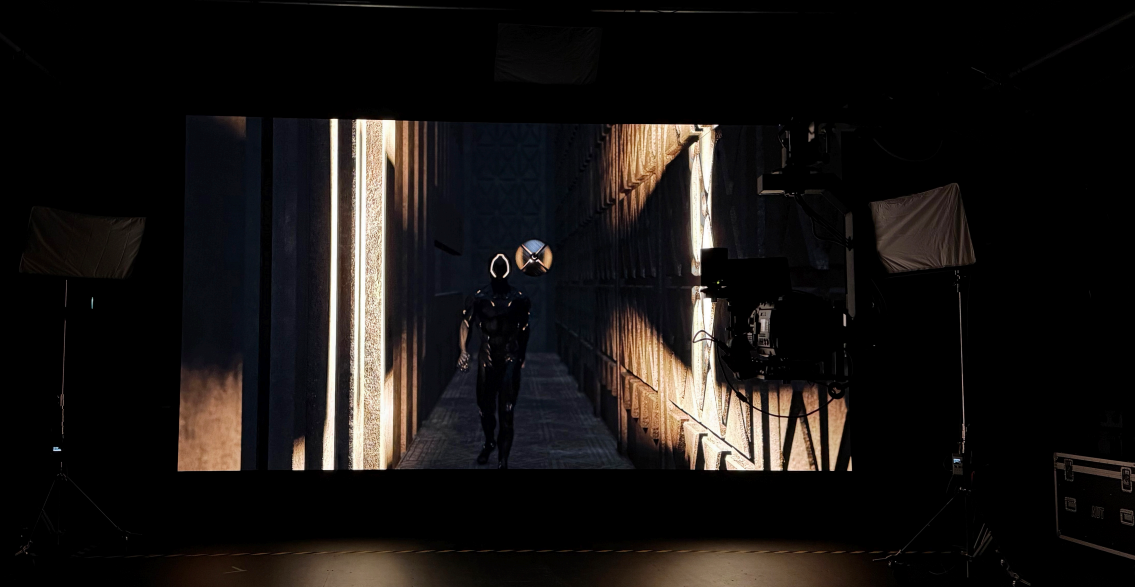


Figure 9. *Exhibition installation view9*, Visual Production Studio, AUT.
Photograph by Chunlei Guo, 2026.

For the wider exhibition, the work was presented on a monitor in the gallery, allowing it to reach a broader audience.



Figure 10. *Exhibition Installation, AUT Gallery, Auckland University of Technology, Auckland, New Zealand, Photograph by Paul Chapman 2026.*



Figure 11. *Exhibition Installation, AUT Gallery, Auckland University of Technology, Auckland, New Zealand, 2026. Photograph by Chunlei Guo, 2026.*



Title: We Were Once Human

Media: 3D-rendered animation, sound, LED display

Dimensions: 3072 x 1620 px

Frame rate: 24 fps

Duration: 4 minutes 45 seconds

Video Link: <https://youtu.be/5TDfzj7BbJ8>

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