Movement as spatial investigation

in Landscape Architecture



Synthetic Crystallisations *– Lorenz Pammer, courtesy of Synthetic Landscape Lab*

FALL 2026

At the Synthetic Landscape Lab at the University of Innsbruck, we approach the alpine environment not as a static field, but as a living, dynamic territory continuously shaped and reshaped through the intersecting movements of humans, animals, weather systems, machines, and unseen ecological flows. This course, developed for the academic year 2026–2027, investigates movement—specifically human-powered, embodied movement through alpine landscapes—as a tool for spatial inquiry and design innovation in landscape architecture.

Traditional methods of site analysis often privilege visual, static, and data-driven understandings of space, neglecting the dynamic, multisensory, and temporal nature of landscape experience. This project addresses this gap by exploring movement as a generative method for engaging with and understanding spatial environments. Through walking, climbing, running, skiing or other intensive forms of mobility adapted to mountainous or urban terrain, movement becomes both a perceptual lens and a design strategy.



@Field Trip *– courtesy of Synthetic Landscape Lab*

We ask a fundamental question: how does movement—human and nonhuman, visible and invisible—shape our perception of space, and how might it reconfigure the way we design landscapes?

Drawing from ecological, cultural, and artistic frameworks, the studio engages historical and contemporary references such as the *Dérive* of the Situationist International, the performative trajectories of land artists like Richard Long, the migratory logics of animals and wind-dispersed seeds, and the spatial systems of nomadic societies. These practices remind us that space is not simply occupied but continuously produced through motion, rhythm, and relation.

By positioning movement at the core of landscape practice, we aim to cultivate new forms of architectural imagination—ones that emerge from bodily engagement, that negotiate terrain through effort and rhythm, and that embrace impermanence, adaptation, and ecological entanglement. In this light, design becomes not an intervention into static space, but a response to a moving world—a choreography of materials, species, energies, and affects in motion.



:: **Fixity::** A critique of stillness, and a call for embodied reentry



@ MycoHabitat *– courtesy of Synthetic Landscape Lab*

Cities are widely seen as the pinnacle of human settlement, yet in many ways they represent a **compensation for our lost capacity to migrate**. The invention of air conditioning, heating systems, vertical farming, and even parks are cultural prosthetics—designed to stabilize our existence in places where our bodies might otherwise move with the seasons, with animals, or with shifting climatic conditions. **Zoning, centralization, and infrastructural fixity make us still. Stillness then makes us blind to the metabolic flows that sustain us.**



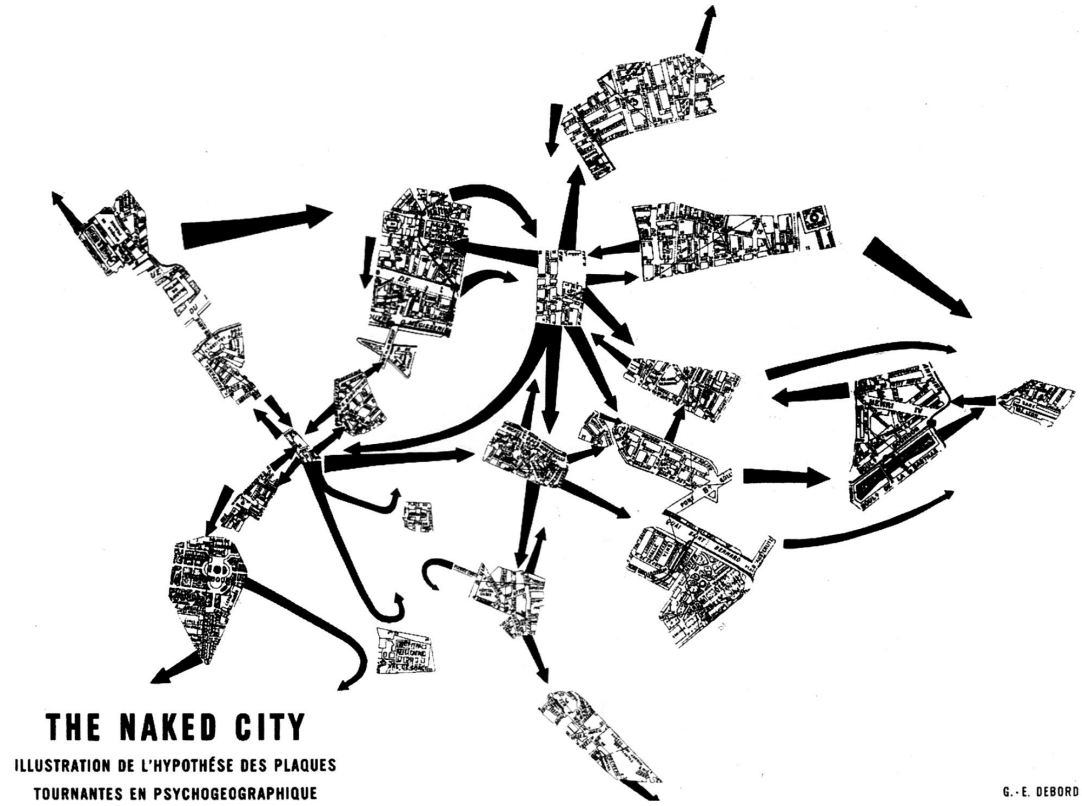
@ the Divide *– Lachlan Morton*

This condition has only intensified in the digital age. **Online platforms offer frictionless access to services, erasing the need for physical presence. Movement is no longer necessary to procure food, meet people, or explore space.** The screen becomes the new site; the click, the new gesture of consumption. While this logic transforms economies and social relations, its effects on the body, on perception, and on spatial design are more insidious. It renders us disconnected from the environment, disengaged from the affective, sensory, and ecological dimensions of place.

This course seeks to challenge these disconnections by **returning to the body**—not only as a user of space, but as a **sensor, navigator, and constructor** of space. **Movement** is not merely the act of traversing terrain; it is the primary modality through which **life makes sense of its environment**. From migrating birds to nomads, from drone scans to the metabolic flows of microbial life, movement is a spatial logic—an embodied form of **distributed intelligence**. It connects bodies to terrain, perception to ecology, and time to space. To move is to **re-enter relationship**: with land, with weather, with other species, and with the memory and rhythm of our own

bodies.

:: **Motion** :: Movement, Perception, and Embodied Space



@the Naked City *– Guy Debord and Asger Jorn, Situationist International*

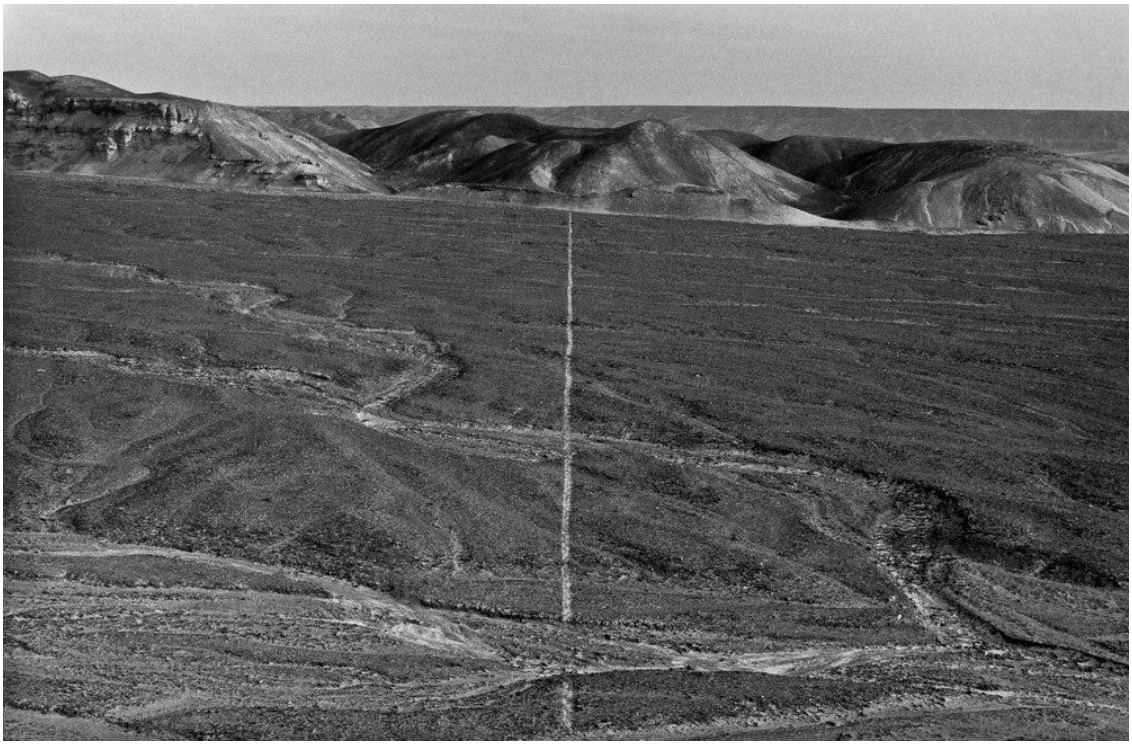
This research draws inspiration from artistic and philosophical movements that foreground the body as a central instrument of spatial exploration. The **dérive**, developed by the Situationist International, proposed drifting through urban environments as a form of radical spatial critique—disrupting habitual paths and revealing the psychological, political, and affective contours of the city. The dérive invites a sensitivity to the rhythms, textures, and ambiances of space as it is lived and experienced, rather than merely seen or measured. Translating this method into the alpine landscape offers a powerful tool for reimagining terrains typically analysed

through top-down or cartographic approaches.



@ Five Stones *– Richard Long*

Similarly, the **land art** of **Richard Long** repositions movement as both medium and message. His walks—recorded through maps, photographs, or minimal interventions in the landscape—highlight the dialogue between body, time, and terrain. Long's work reveals how traversing a space can inscribe meaning, create narratives, and evoke ecological awareness without imposing upon the land. His practice demonstrates a tactile, ethical, and poetic mode of inhabiting landscape, one that informs this project's ambition to make design more responsive to embodied knowledge.



***@ Walking a Line** – Richard Long*

At the core of this investigation is the belief that **space is not a passive container but an active field of bodily engagement**. An **embodied experience of space**—where perception arises from movement, breath, fatigue, orientation, and touch—offers a way to reconnect with the primal, corporeal dimensions of landscape. This stands in contrast to the increasingly disembodied habits fostered by digital interfaces and sedentary urban life. Crucially, these habits often extend into our relationship with the landscape itself—for example, in alpine tourism, where ski resorts enable physical movement across terrain but disconnect it from any meaningful, sensory, or ecological interaction. Here, the landscape becomes a consumable backdrop, not a space of dialogue or encounter. By foregrounding the body in motion, this research seeks to reclaim landscape as a **lived, dynamic medium**, where design begins not just with observation, but with presence, participation, and an ethic of engagement.



::Introduction brief

Movement as Spatial Investigation

From Embodied Observation to Landscape Systems

At the Synthetic Landscape Lab, landscape is approached not as a static background or fixed composition, but as a living and dynamic territory continuously

shaped by **human** and **nonhuman movement**, environmental forces, material processes and ecological change.

This course sequence investigates movement as a method of spatial inquiry and design generation. Walking, tracing, scanning, modelling and making are

understood as interconnected forms of engagement through which students observe, interpret and transform landscape. Movement becomes both a

perceptual lens for understanding the site and a design strategy for generating new spatial and ecological relationships.

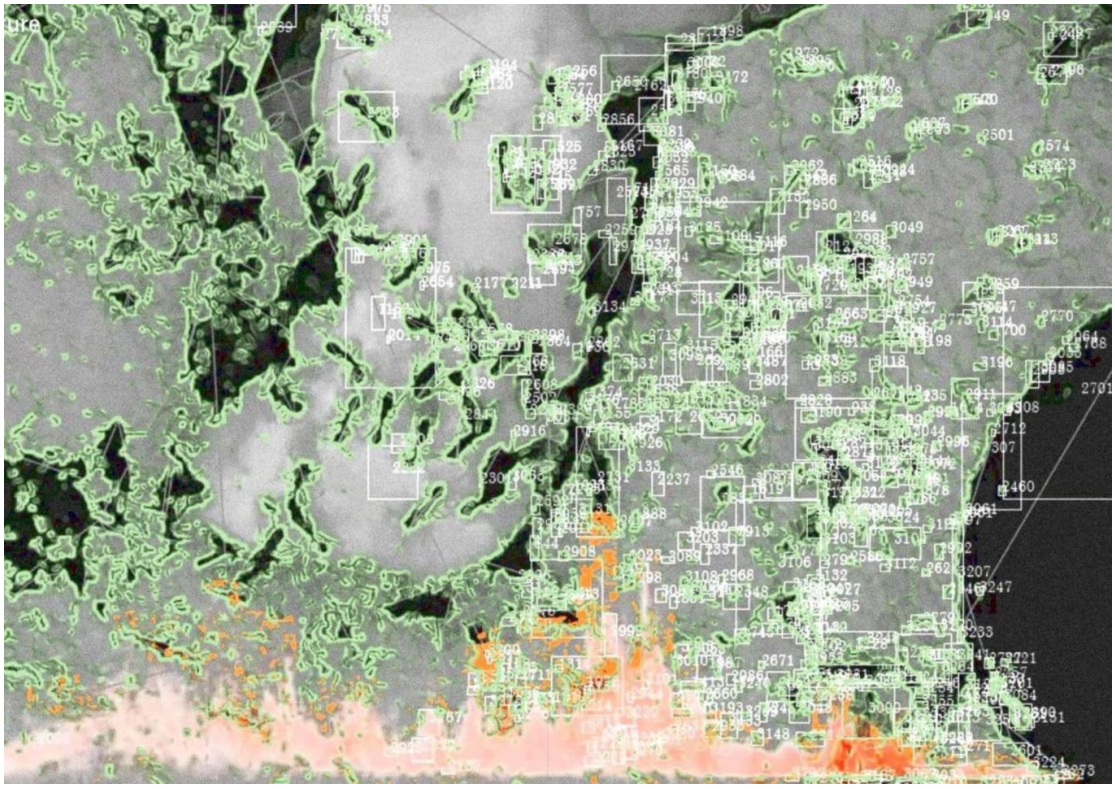
Traditional site analysis often prioritises static maps, visual representation and top-down data. While these methods provide important information, they can

overlook the temporal, sensory and embodied dimensions of landscape experience. This course therefore begins with the body and the act of moving

through space. The body operates as a sensor, navigator and recorder, revealing rhythm, speed, direction, density, resistance, repetition and change.

The central question of the course is:

How can movement—human and nonhuman, visible and invisible—be recorded, translated and transformed into spatial and landscape design?



Tracing ants movment

In Entwerfen 2 — Landscape System, the spatial proposal is expanded into an integrated landscape strategy. Ecology, vegetation, hydrology, material cycles, infrastructure and patterns of use are developed as interconnected systems capable of adapting over time.

:: Methodology

Observation-Tracing-Computation-Prototyping-Spatialize Building on the conceptual foundation of movement as a spatial method, thisresearch integrates a range of digital and analogue tools to capture, analyse, andtransform embodied experiences into design insights. These techniques are selectednot for their precision alone, but

for their capacity to translate perception intopatterns, effort into data, and movement into meaningful design gestures.

1. Movement Observation

Tools： Reality Capture, 3D Scan, Photoshop,Rhino, Blender

1. Movement Observation and Digital Tracing Experiments

Tools: Video recording devices, TouchDesigner for movement tracing and data visualisation, RealityCapture

for 3D scanning and point-cloud generation, and AI-assisted pattern analysis. Purpose: To conduct a series of controlled movement experiments and investigate how movement generates

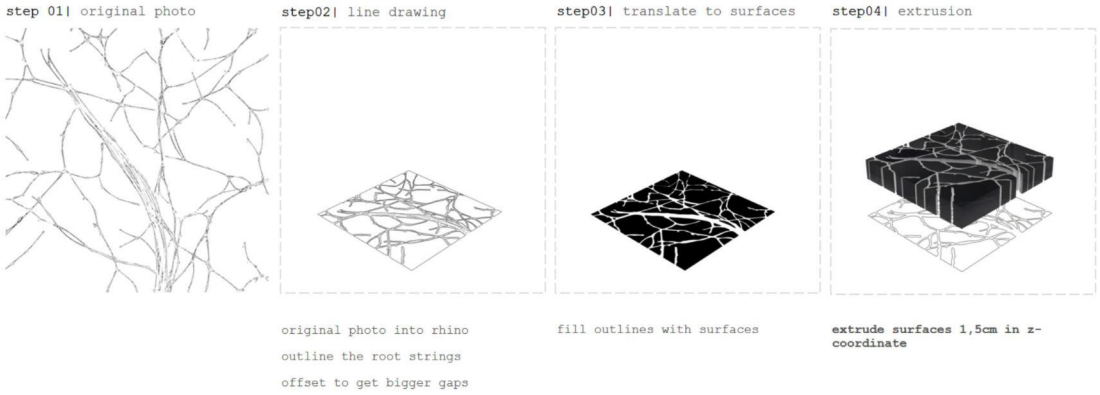
spatial patterns. Students record and analyse variations in trajectory, direction, speed, rhythm, density and

interaction, translating observed behaviour into digital drawings and three-dimensional site data. Experimental Method: Each experiment introduces different movement conditions, scales or behavioural rules. The recorded trajectories are processed in TouchDesigner and overlaid with point-cloud models generated in

RealityCapture. By comparing multiple iterations, students identify recurring patterns, spatial relationships and

transformation rules. Applications: Producing trajectory drawings, movement maps, point-cloud models and pattern catalogues that

provide the analytical and geometric foundation for physical prototyping and later spatial design.



Grasshopper /Rhino/ BlenderObservation, Synthetic Landscape Lab





Design Experiments (Catelogue/Algrithem



Rootsystem transformation (AI+Computation experiment)

2. Digital Tracing Experiments

Tools: Video recording devices, TouchDesigner for movement tracing and data visualisation, RealityCapture f2. Digital Tracing Experiments

Tools: Video recording devices and TouchDesigner for frame analysis, motion detection, optical flow, trajectory

extraction and data visualisation. Purpose: To transform recorded movement into readable spatial information. Digital tracing reveals patterns

that are difficult to perceive through direct observation, including direction, speed, frequency, density, repetition,

interaction and changes over time. Experimental Method: Students record a selected movement process and import the video sequence into

TouchDesigner. By comparing frames and tracking changing positions, the movement is converted into points,

lines, fields and layered diagrams. Different parameters and time intervals are tested to produce multiple

interpretations of the same behaviour. Applications: The resulting trajectory drawings, density maps and temporal diagrams are compared to identify

recurring patterns and spatial relationships. These outputs provide a digital pattern catalogue and a set of

transformation rules for subsequent 3D modelling, physical prototyping and site-based design.or 3D scanning

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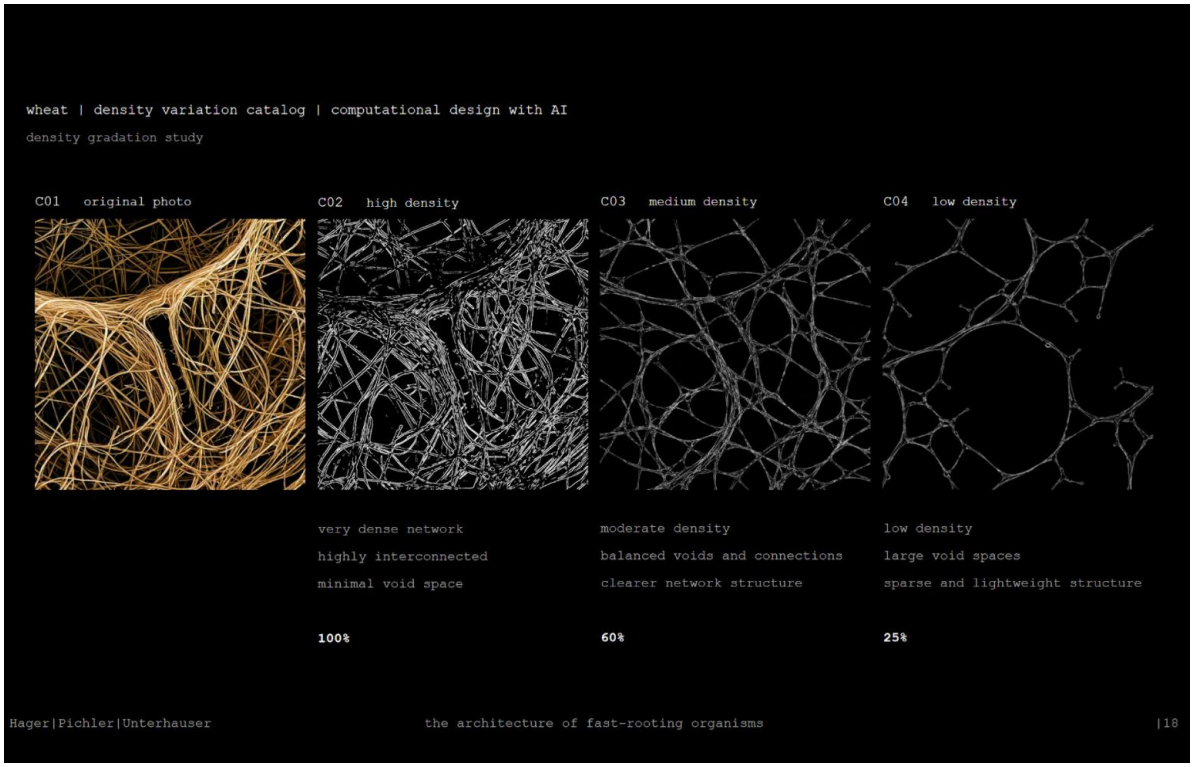
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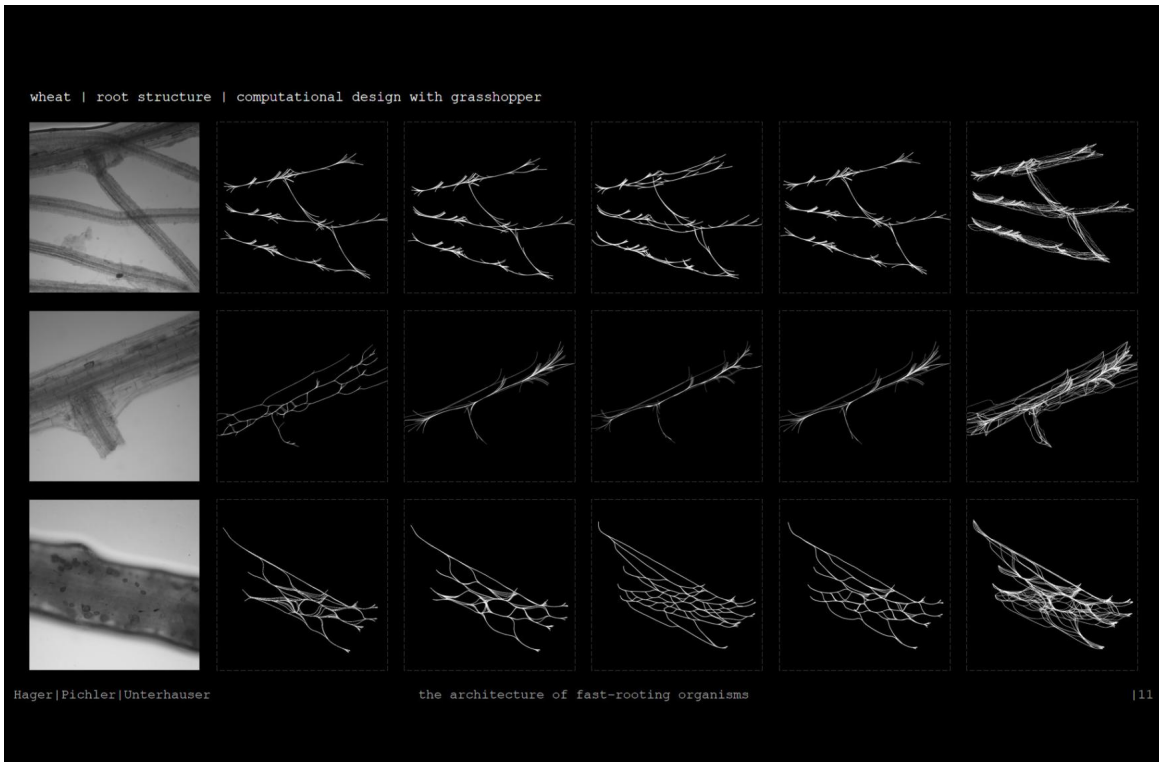
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Tracing root movment(Computaion tracing pattern)



Computation by AI

3. Generative and Predictive AI

- **Tools:** AI tools—including DeepSeek-R1 and GPT-4o for multimodal input, FLUX.1-dev on ComfyUI for image generation, and Microsoft's TRELLIS model for 3D design translation. Video outputs, animated via Kling AI, bring urban scenarios to life.
- **Purpose:** To simulate ecological futures, speculate on landscape scenarios, or transform movement data into 3D printable morphologies.
- **Applications:** Generating speculative renderings of future climate-adapted terrain, modelling animal migration in relation to human pathways, or merging sensor data with AI to create responsive design strategies.



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:: Bibliography, filmography and research links ::

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DeepGreen - Guatemala City VR Experience
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https://www.youtube.com/watch?v=i0nbTctiKUk

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