3D World Model AI

NMCA — A Neurosymbolic Multimodal Cognitive Architecture

3DWorldModelAI.com is the focused technical entry point for the concept of a true 3D World Model AI based on the NMCA architecture. The complete specification, development history, tests, and supporting materials are maintained at VisualThoughtAGI.com. Visual Thought Site Mirror

128-module specification · 42-module cognitive core · Final edition May 2026

What This Architecture Means by a 3D World Model AI

Most current systems can describe a scene or generate an image of a scene. That is not the same as maintaining a private spatial model that survives after the original description disappears and then using that model as the working state of thought.

NMCA was designed around this distinction. The core idea is simple:

- Construct and keep an internal 3D / spatial scene
- Attach symbols, memory, and beliefs to objects inside that scene
- Plan, simulate, and reflect by operating on the scene itself
- Re-enter the same scene later without needing the original text prompt

Language is an interface into the scene. The scene is where cognition occurs.

Key Architectural Claims

The original public disclosure (20 April 2025) specified:

- A persistent internal visual/3D scene used for reasoning
- Memory that stores scenes for later re-entry
- Internal simulation synchronized with observation
- Symbolic representations bound to scene entities
- Contradiction detection and belief updating inside the spatial model
- Planning and multi-branch simulation performed in the scene
- An explicit loop: Input → Internal Simulation → Action → Reflective Update

The final design uses an **implicit structured spatial representation** (not a continuously rendered photorealistic world) for speed and resource reasons. A visual render is optional and available on demand for inspection or human viewing.

The Decisive Tests

Persistent Scene Test

Give the system a scene description (e.g., a blue vase and red apple on a wooden table). Remove the original text. Later require it to re-enter the scene, report relative locations, change viewpoint, move objects, take another perspective, and preserve object identity — all without new sensory input.

Systems that only retrieve stored sentences fail this test. The objects must still be in a place.

Scientist Test

Present a genuinely novel, unsolved problem. If verbal reasoning and search are insufficient, the system must construct a new spatial working model and reason from it.

How This Differs from Current Approaches

- **Scaling + agents** — strong prediction and tool use, but presence is reconstructed from records.
- **World models / JEPA-style systems** — better dynamics prediction, yet re-entry and scene-pegged identity are not first-class by default.
- **Neurosymbolic hybrids** — more structure, but the predictive engine usually remains primary.
- **NMCA** — makes the internal spatial scene the substrate. Symbols are attached to scene entities. Identity, reflection, and planning live in the same loop.

Full Specification & Records

This page is a focused summary. The complete technical record is the 471-page NMCA blueprint.

Main project site: VisualThoughtAGI.com
Full NMCA Blueprint (Zenodo): 10.5281/zenodo.23417247
Original 46-page disclosure (April 20, 2025): 10.5281/zenodo.15313197

Site Mirror

Author: Derek Van Derven
Original public release: 20 April 2025
Final version: May 2026

Independent architectural claim. Not a running system and not intended for autonomous deployment.