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Visual Thought AGI — Conceptual Research Archive

By Derek Van Derven | June 2025

What is Visual Thought AGI?

Visual Thought AGI is a conceptual framework for human-level general intelligence, inspired by how humans think using internal visual simulations and scenario modeling.

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Core Principles

This architecture emphasizes:

1. Structured multimodal representation of reality 2. Visual and spatial reasoning

3. Scenario simulation and counterfactual analysis

4. Integrating memory, prediction, and decision-making Why It Matters

conceptual, research-oriented framework.

Goal of the Blueprint

Existing AI systems are limited in simulating physical causality or introspecting on their own reasoning. Visual Thought AGI addresses these gaps in a

The blueprint provides a safe, transparent framework for researchers and policy leaders to explore human-level AGI in theory, without enabling deployment or

experimentation on real-world AGI systems. **About This Archive**

Visual Thought AGI represents a personal exploration into cognitive architectures, visual thought simulation, and mnemonic-symbolic design. This work is purely

conceptual and does not constitute a functioning AGI system. All materials here are preserved for archival, educational, and research reference. They are not intended for commercial or operational deployment.

Research Purpose

The original research aimed to explore ideas around:

- Simulating visual thought processes Meta-cognitive reflection loops
- Mnemonic and symbolic memory structures
- Conceptual frameworks for cognitive modeling **Important Notes**

- This work was generated largely with AI assistance (ChatGPT) for ideation and documentation. • I personally did not create a working AGI system or any executable code for one.
- As of September 2025, I am retiring from this line of research and no further updates will be made.

preventative interventions.

Potential Benefits of Partial AGI

Even if partial AGI is implemented based on the Visual Thought AGI blueprint, current AI would **improve** in the following ways, assuming responsible, ethical deployment:

- 1. **Medical Research Efficiency:** Faster computational hypothesis testing, drug discovery suggestions, and planning support for clinical research.
- 2. **Scientific Experimentation:** Simulation of complex experiments to prioritize promising approaches before real-world testing.
- 3. Climate & Environmental Modeling: Improved modeling of climate and environmental interventions to support policy and sustainability research.
- and individualized feedback systems. 5. Accessibility Technologies: Enhanced tools for people with disabilities, including cognitive, sensory,

4. Education & Personalized Learning: Adaptive learning pathways, real-time tutoring assistance,

- and assistive support applications. 6. Early Disease Detection: Analysis of large-scale health data to flag potential risks and inform
- 7. **Policy & Governance Simulations:** Scenario modeling to explore potential societal interventions and minimize unintended consequences.
- 8. **Cognitive Enhancement Research:** Safe augmentation of human problem-solving, learning, and decision-making strategies through Al-assisted insights.
- Note: These projections are cautious estimates. Real-world outcomes depend on ethical oversight, regulatory compliance, collaborative deployment, and limitations inherent to partial or conceptual AGI

systems.

The Visual Thought AGI blueprint conceptualizes 42 modular components, 30 of which will enhance

Core Modules of Visual Thought AGI

current AI capabilities across perception, reasoning, memory, and decision-making. Each module could theoretically improve performance in its domain by **20-50%**, assuming responsible, ethical deployment. 1. **Visual Scene Simulation:** Improves spatial reasoning and mental model generation — enabling Al to

- plan in richer visual contexts.
- 2. **Predictive Scenario Modeling:** Enhances planning and foresight for decision-making by simulating multiple outcomes internally.
- 3. Mnemonic-Symbolic Memory: Boosts structured long-term knowledge storage and retrieval, improving recall and consistency.
- 4. **Meta-Cognitive Reflection Loop:** Enables self-assessment and adaptive learning, reducing errors over repeated tasks.
- 5. **Attention Modulation:** Focuses on relevant inputs, increasing efficiency in complex, noisy environments.
- 6. **Temporal Sequencing Module:** Improves reasoning over time, aiding in forecasting and sequential
- 7. **Contextual Embedding Layer:** Enhances situational understanding, leading to more accurate
- predictions and responses. 8. **Counterfactual Analysis:** Supports "what-if" evaluations, reducing trial-and-error mistakes.
- 10. **Emotion Simulation Layer:** Models affective states, improving human-like decision making and empathy simulation.

9. **Goal Hierarchy Planner:** Optimizes multi-step problem solving by prioritizing sub-goals effectively.

- 11. Conceptual Abstraction Engine: Generalizes patterns to novel situations, boosting transfer learning capabilities.
- 12. **Perceptual Grounding Module:** Aligns symbolic reasoning with sensory inputs for more accurate interpretations.
- 13. Attention-to-Memory Mapping: Links perception to stored knowledge, improving rapid decisionmaking. 14. **Novelty Detection:** Identifies anomalies or unusual patterns, enhancing safety and innovation
- detection. 15. **Internal Hypothesis Testing:** Simulates outcomes before external implementation, reducing
- experimental risk. 16. **Language-Visual Integration:** Bridges text and imagery for richer, multimodal reasoning.
- 17. **Long-Term Predictive Memory:** Retains temporal patterns to improve forecasting and planning. 18. **Ethical Constraint Layer:** Guides Al behavior within safe and moral boundaries.
- 19. **Attention-Guided Learning:** Focuses learning resources where they have the most impact.
- 20. **Multi-Agent Simulation:** Models interactions among agents, improving societal or team-level prediction accuracy. 21. Spatial Reasoning Module: Enhances navigation, object manipulation, and environmental
- 22. **Creative Synthesis Engine:** Combines concepts to generate novel ideas or solutions. 23. **Probabilistic Reasoning Layer:** Handles uncertainty more effectively, improving decision
- robustness. 24. **Pattern Recognition Enhancer:** Detects subtle trends in complex data, improving predictive accuracy.
- 25. **Adaptive Feedback Module:** Continuously refines internal parameters, increasing learning

26. **Cross-Domain Transfer Engine:** Applies learned knowledge to new domains, accelerating

- generalization. 27. **Simulation Validation Layer:** Compares predictions with outcomes for iterative improvement.
- 28. **Hierarchical Planning Module:** Breaks complex goals into actionable sub-tasks, improving task efficiency.
- 29. **Attention-to-Action Pipeline:** Links perception, memory, and reasoning to decisions, reducing lag and errors.
- reliability.

Actual improvements depend on real-world testing, ethical oversight, and resource allocation.

30. **Self-Monitoring Module:** Tracks performance and errors, adapting behavior to maintain high

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Note: These modules are conceptual and illustrate how a partial AGI could enhance current AI systems.

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understanding.

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AGI Blueprint Primer: 42 Modules Analogy Sheet

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