SGS.ai

A New Kind of AI: Understanding How a System Can Learn, Act, and Evolve

How is SGS.ai Different?

Traditional AI

Learns from massive, static datasets (like a textbook).

Often a "black box," repeating patterns (and biases) from its training data.

Needs millions of human-provided labels.

SGS.ai

Learns by *doing* and *experiencing* (like a child).

Builds its own understanding of the world from the ground up.

Creates its own context and meaning.

The Three Main Parts

1. The Senses (Perception)

Sees, hears, or senses the world. This is the input, just like any other AI.

2. The Brain (Cortex)

Thinks, remembers, and *connects* ideas. This is where the magic happens.

3. The Hands (Actuation)

Acts on the world. This can be a physical action or a digital one (like sending a message).

The Core Learning Loop

1. PERCEIVE

The AI "sees" a new object or event in the environment.

2. THINK

It creates a unique "Digital Fingerprint" for that concept.

3. ACT

It interacts with the concept or logs it in its memory.

4. CHANGE

The action changes the world, creating a new, updated perception. The loop repeats.

What's a "Digital Fingerprint"?

In this system, a thought or concept is called an "HLLSet." Think of it as a unique, highly compressed **Digital Fingerprint**.

- It's not just raw data, it's **context**.
- The fingerprint for "Dog" is mathematically *linked* to the fingerprints for "Furry," "Barks," and "Animal."
- This allows the AI to build a web of connected ideas, all on its own.

The Brain as a "Living Diary"

The AI's memory isn't just a database. It's a coherent story of its own experiences, written as it lives.

Keeping the Story Consistent

Making Memories

The AI "glues" new experiences to old ones.

Example:

(Past) "I saw a furry thing."

+ (Present) "That thing just barked."

= (New Memory) "That's a Dog."

Spotting "Plot Holes"

The AI's main goal is to keep its "story" consistent.

If a new memory doesn't fit (a "dog" meows), it feels "dissonance." It *must* act to fix the plot hole (e.g., "Maybe that's a *new* thing?").

A Cool Result: Inventing Language

SGS.ai doesn't *learn* language from a textbook. It *invents* it from scratch by interacting with others.

How SGS.ai "Translates" a Word

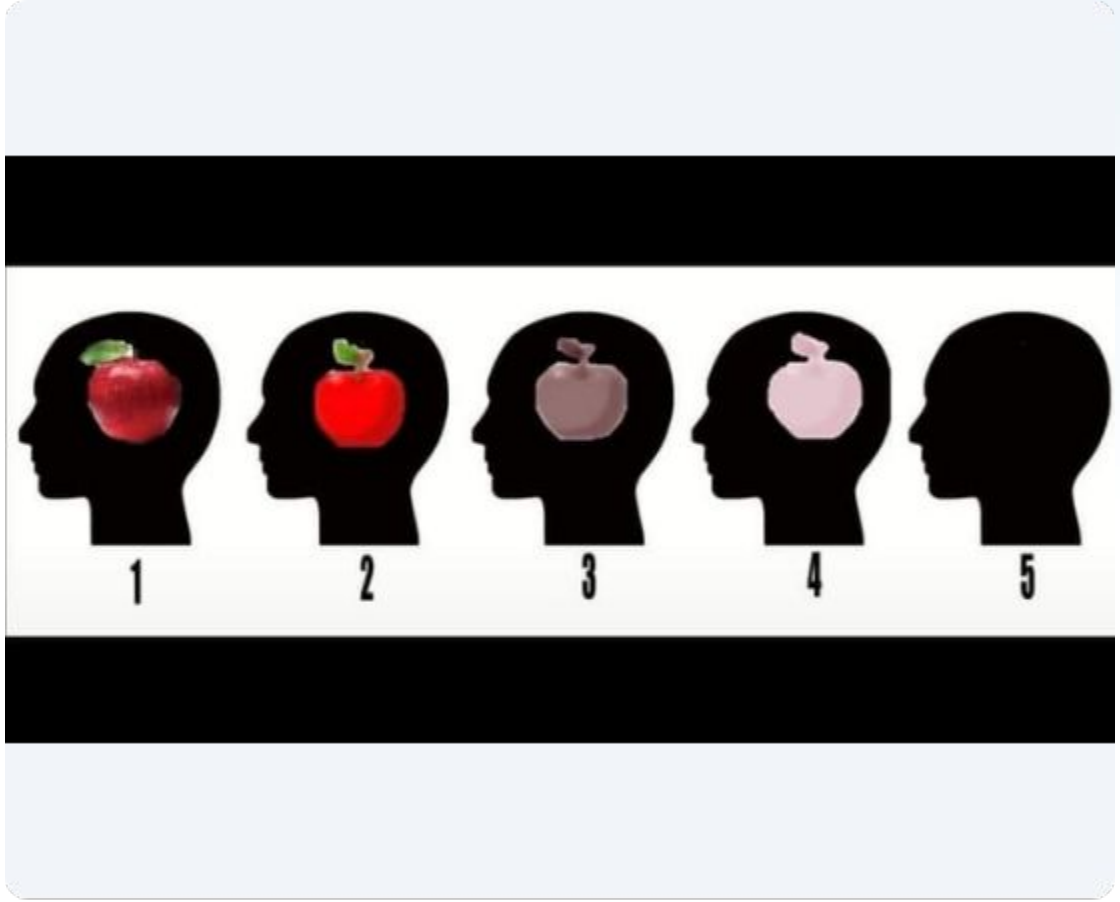
How do you learn the word "Apple"?

Bad Way (Dictionary):

'Apple' = 'Manzana'. This has no real-world context.

SGS.ai Way (The "Pointing" Method):

1. Agent A *points* at an [Apple Object] and says its word, "Apple."
2. Agent B *sees* the *same* [Apple Object] and says its word, "Manzana."
3. Both now know: "Apple" and "Manzana" refer to the **same real thing**.



What This Means for AI Language

Grounded

Words are tied to real objects and shared experiences, not just statistics.

Embodied

Language is learned through the same "Senses" and "Hands" used for all other tasks.

Social

Language only emerges in a community. It's a shared tool that agents build *together*.

Why This Matters

- **Less Bias:** AI builds its own understanding of the world, rather than just repeating biases from human web data.
- **More Robust:** It can handle new, never-before-seen situations by relating them to its past experiences.
- **True Understanding:** It's a move from simple "pattern matching" to "building a consistent model of the world."
- **Better Collaboration:** AI can learn to communicate and collaborate with humans (and other AIs) in a more natural, grounded way.

Questions?

Thank you.

Image Sources

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