From Context to Contextualize: Why AI Needs Playgrounds, Not Playbooks

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Buying a home is, for most people, the single most context-rich choice they ever make. That complexity pulled me into building a real-estate-auction simulation last week: a sandbox for studying how autonomous bidding agents grapple with context.

I cycled from hand-written heuristics to reinforcement learning to LLM chat—only to hit the same wall. Reinforcement learning demanded fussy reward shaping; LLM orchestration ballooned into a thicket of states, each hungry for hand-picked clues. The more logic I wrote, the dumber the system felt.

LangGraph's recent post, "**How to Think About Agent Frameworks**", argues that reliability hinges on feeding each agent the *right* context at the *right* time. But that recipe is still passive: humans curate, agents consume. Designing *what* to give them is labor-intensive and, by imitation-learning math, caps performance at our own ceiling. We need to teach agents **how**—not what—to contextualize.

A memory from high-school history snapped this into focus. "Historical contextualization," our teacher insisted, was a *verb*: actively framing events inside bigger forces. It is the cornerstone of critical thinking. If we want agents that reason and evolve, we must let them contextualize for themselves.

Andrej Karpathy echoed this at YC's AI-School Summit, sketching agents that rewrite their own prompts mid-run—reflection turned into executable code. That, not token limits, is the true bottleneck.

Viewed through this lens, three observations converge:

1. **Yann LeCun:** Today's LLMs ingest $\sim 10^{13}$ bits; by age four, a child's eyes alone have seen $\sim 10^{15}$ bits. LLMs have sampled barely 1% of a toddler's raw experience.
2. **My dear CS Professor Hakim Weatherspoon** asked two decades ago, "How do we *store* an *Avogadro* number of files?" That moon-shot seeded modern cloud storage, and now I ask: "How can we enable AI agents to ***contextualize*** an *Avogadro* number of bits on the fly?"
3. **Richard Sutton & David Silver, "Welcome to the Era of Experience":** Once agents act in rich environments, "there will be no shortage of grounded signals"—experience itself becomes the reward.

Active contextualization is the lever that unites these threads. We are not building smarter

multi-agent workflows; we are laying out an **agentic playground**—a boundless space where agents learn to choose their own spotlights, weave their own narratives, and in doing so, outgrow their authors. When agents master the verb *contextualize*, they will turn Avogadro-scale data into intuition—and the next era of intelligence will begin.