

Stateful Agents

Meetup Series



The Problem

In 2025, “agent”
no longer means anything



“agents are just
LLMs in a loop”

“agentic
workflows”





Defining agents

An agent is an AI application consisting of a **model** equipped with **instructions** that guide its behavior, access to **tools** that extend its capabilities, encapsulated in a **runtime** with a dynamic lifecycle.

OpenAI (Feb 2025)

Agent =

- + Model
- + Instructions
- + Tools
- + Runtime



model
+ instructions
+ tools
+ runtime

$\sim =$ “LLM agent”



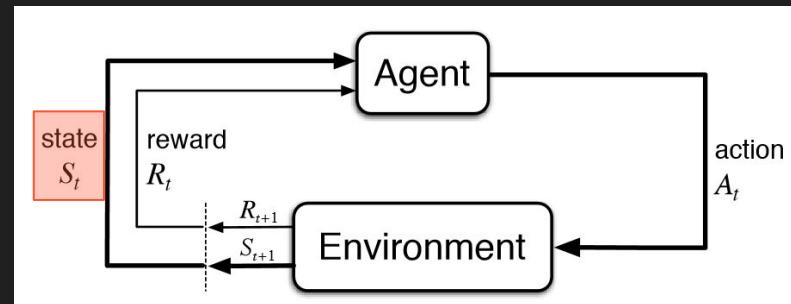
What about **state**?

What about **memory**?

What about the ability to **learn**?



“an agent must
be able to **learn**
from its own
experience”





If LLMs are stateless

...how can we build (LLM) agents that learn?



If LLMs are stateless

...how can we build (LLM) agents that learn?

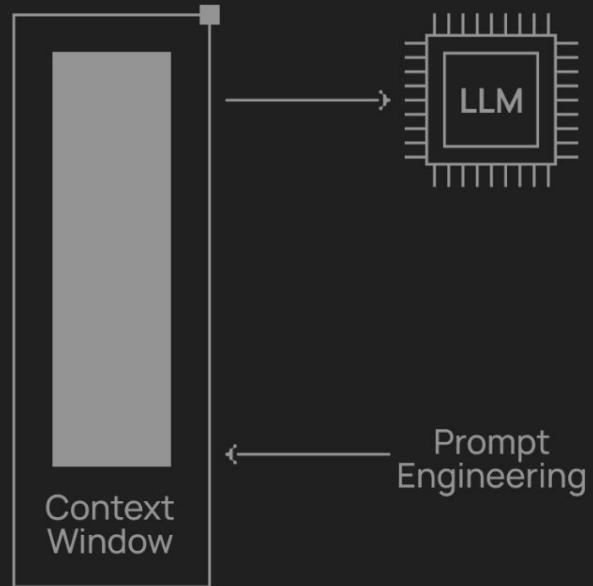
Humans form new memories and learn over time, **LLMs don't**



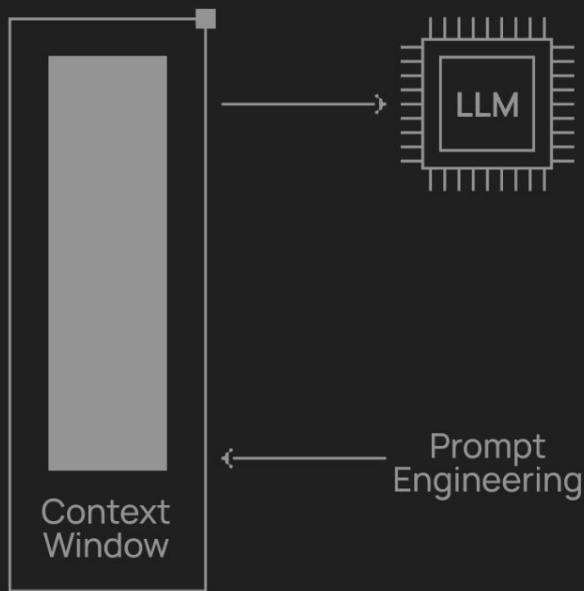
How can we build stateful agents?

Give LLM agents memory through *context management* (context engineering)

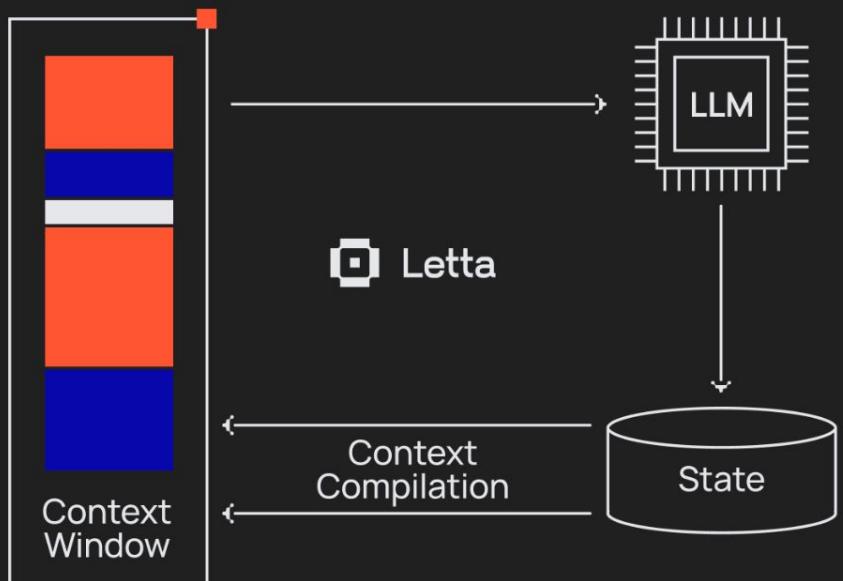
Stateless Agent



Stateless Agent



Stateful Agent



Useful agents maintain state and learn over time



Why do I want stateful agents?

Agents that can learn from experience

The screenshot shows a conversation between two users. The first user asks, "How's James doing? Any special plans today?" The second user responds, "actually james and i broke up". A code block then appears, showing the working context being updated:

```
working_context.replace(  
    "Boyfriend named James",  
    "Ex-boyfriend named James"  
)
```

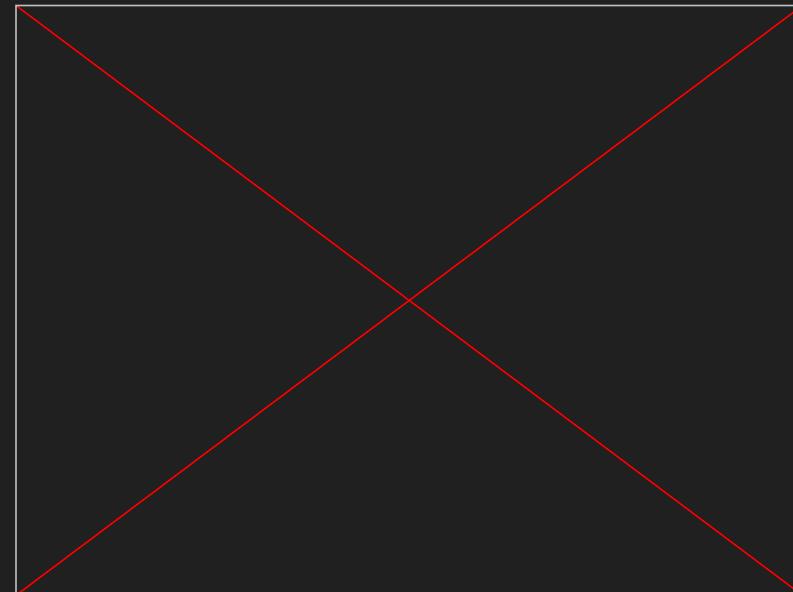
The final message is "Sorry to hear that - hope you're OK 💔".

Figure 4. An example conversation snippet where MemGPT (left) updates stored information. Here the information is stored in working context memory (located within the prompt tokens).



Why do I want stateful agents?

Agents that can learn from data
("training" your agents on your
enterprise data)

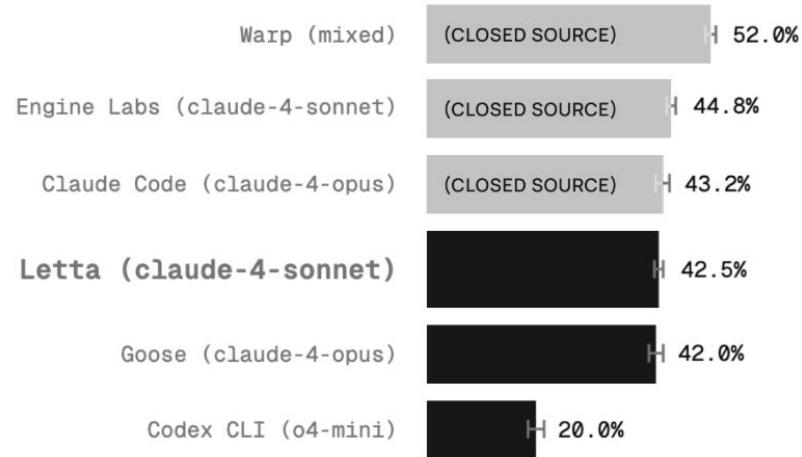




Why do I want stateful agents?

Agents that can effectively track their state and progress with complex, long-running tasks

>_ terminal-bench





Letta: the platform for stateful agents

Open-source agents service + cloud hosted platform

Visual ADE (Agent Development Environment)

Python + TS support



Agents API Service

Deep Research



Welcome to the
Stateful Agents
meetup



My name is
Cameron Pfiffer

I am a developer relations engineer here at Letta.



What is a deep research agent?

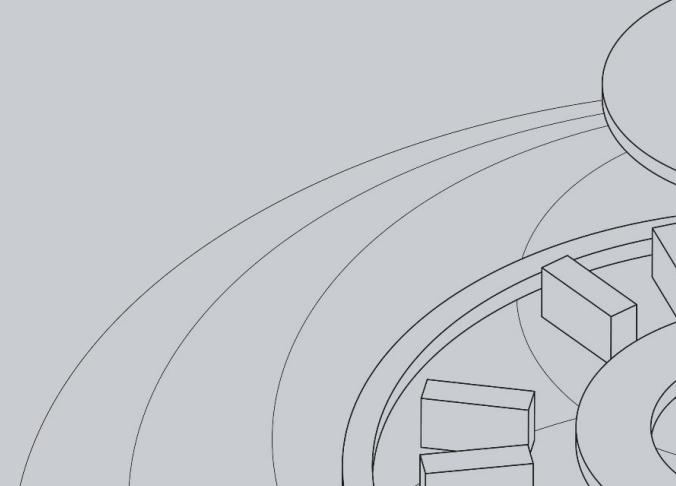
- | Autonomous systems that conduct complex research independently
- | Goes beyond chat - plans, searches, analyzes, and synthesizes findings
- | Compresses hours of human research into minutes
- | Goes beyond chat - plans, searches, analyzes, and synthesizes findings





Why would you build on Letta?

- | Open-source, self-hosted server
- | Transparent context – you're in control
- | Advanced memory management capabilities
- | First-class MCP server support
- | It's cool
- | Your agent can learn with every query





It's easier to just show you

We built an open agent for deep research.

Get your laptops out if you want to follow along.



Deep Thought

(not that one)



github.com/letta-ai/deep-research

Thanks for coming to the Stateful Agents Meetup, everyone!

Looking forward to seeing you next time.

Embedded Stateful Agents
September 18, 2025
Nokia, Sunnyvale CA



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