

# 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

~ = “LLM agent”



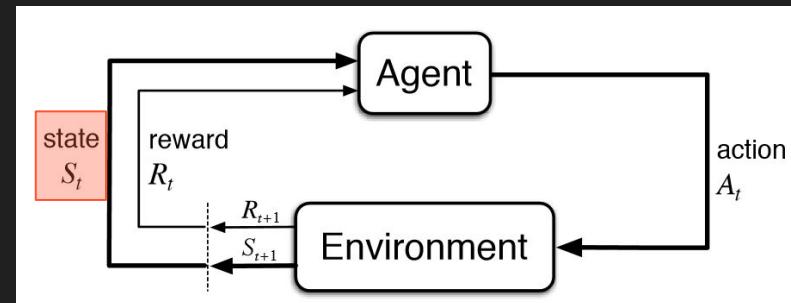
What about **state**?

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?

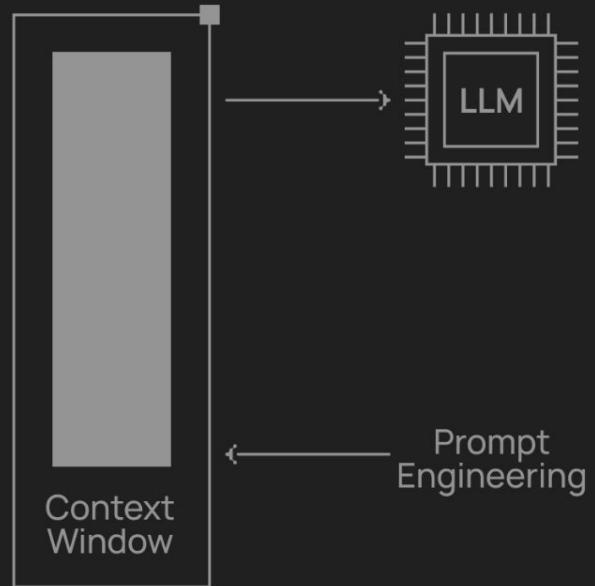
Humans form new memories and learn over time, **LLMs don't**



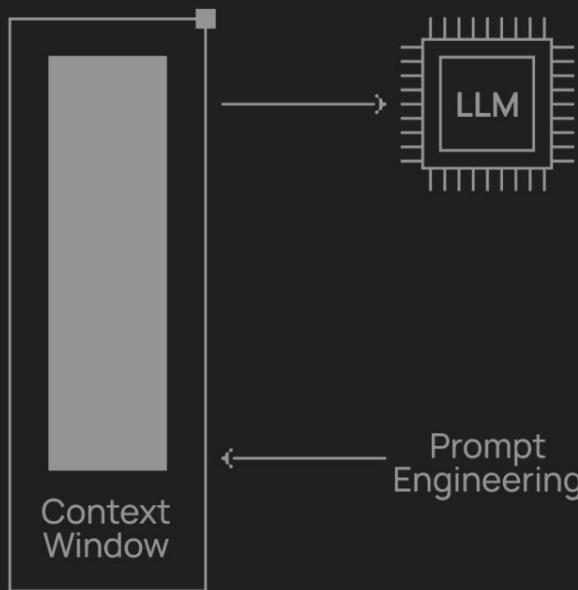
# How can we build stateful agents?

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

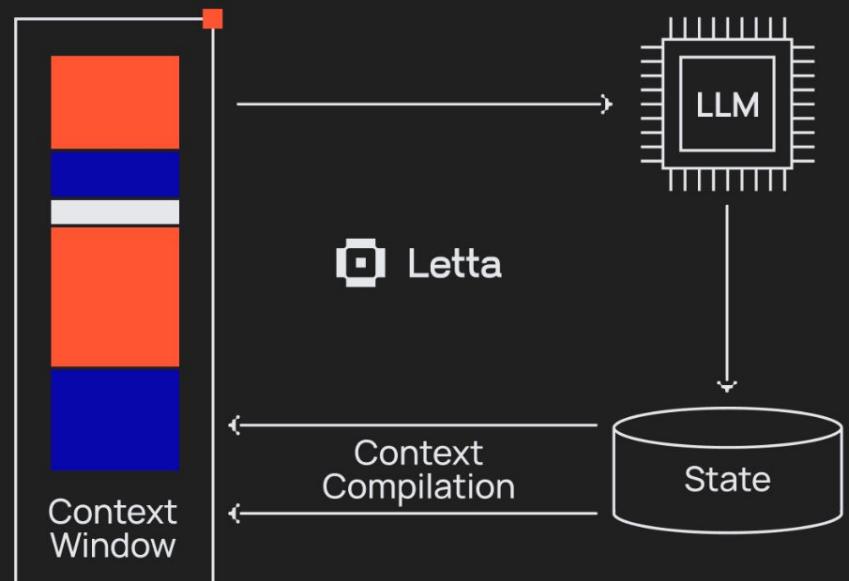
# Stateless Agent



## Stateless Agent



## Stateful Agent



Useful agents maintain state and learn over time



# Why do I want stateful agents?

Agents that can learn from experience

February 14

How's James doing? Any special plans today?

actually james and i broke up

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

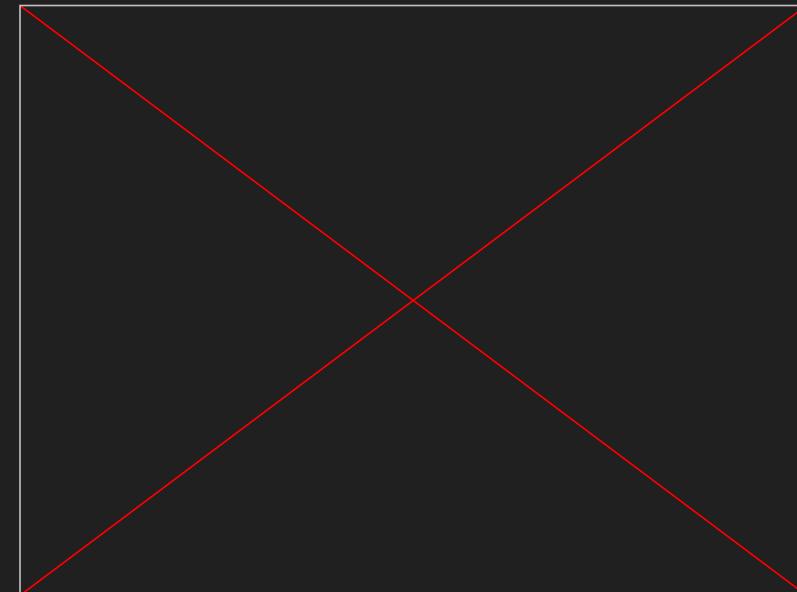
Sorry to hear that - hope you're OK 💔

*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)

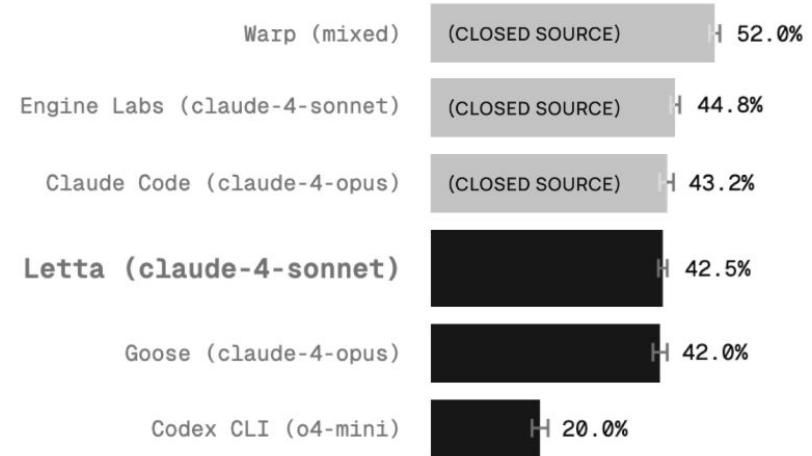




# Why do I want stateful agents?

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

A large, rugged, light-colored rock formation, possibly sandstone, with many ledges and crevices. It is set against a clear, pale blue sky. The lighting suggests a bright, possibly morning or afternoon, sun.

# 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?

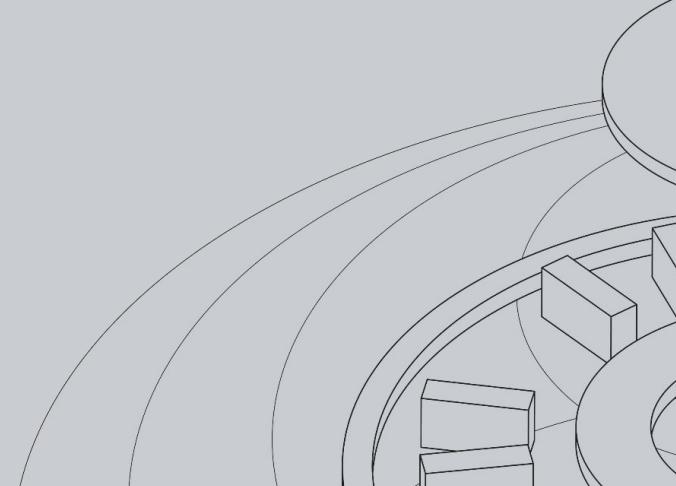
- | Autonomous systems that conduct complex research independently
- | Goes beyond chat - plans, searches, analyzes, and synthesizes findings
- | Compresses hours of human research into minutes
- | Goes beyond chat - plans, searches, analyzes, and synthesizes findings





# 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](https://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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