

A/B/C - Agent Builder's Club

ReAct



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<https://tinyurl.com/5ecjnfpb> (slides)

Goals

Meet other folks

How does X work?

Motivation to make other Agents and Workflows

You?

Learn | Make | Run | Talk ?

Now: Talk > Demo > Code > Chat

Resources

Repo: <https://github.com/atobe/abc>



Paper: <https://arxiv.org/abs/2210.03629>

Simon's Blog Post (<https://til.simonwillison.net/llms/python-react-pattern>)

Motivation

Coding

Open Interpreter

E2B INTEGRATION

Maige

RUNNING ON E2B

Sweep AI

WorkGPT Vanna.AI DemoGPT AutoPR

Aide Smol Developer bloop. Automata

Continue GPT Migrate GPT Engineer CodeFuse

Stackwise Sourcegraph Cody AI cody

ReactAgent GPT Pilot English Compiler

phind

Airplane
Autopilot

Factory

Deepnote AI

Copilot X

PiDNA

Hex Magic

codium

GitLab Duo

GitWit

MakeDraft

Dosu

REACTEVAL
RUNNING ON E2B

CodeWP

grit

Input

Kusho

SECOND

mutable.ai

Butternut AI

Cursor

Codegen

Duckie AI

DevGPT

Productivity

+ Daily Life

Local GPT

Alice

PromethAI

Agent4Rec

Zapier
Central

COGNOSYS

RUNNING ON E2B

Gumloop

RUNNING ON E2B

Moone

Claros AI Shopper

Lindy

AgentScale Spell

iMean.AI

Cykel

FL DE

Otherside Assistant

Wispy

ollie

MultiOn

Raycast

Promptly

Auto
gpt

BeeBot

ChatArena

Examples




Q/A

Code Interpreter



Fact Checking


Coding

Tool Use

GPT 4 Got Upgraded - Code Interpreter (ft. Image Editing, MP4s, 3D Plots, Data Analytics and more!)   


Model: Code Interpreter ALPHA

 I sent 231 CVs, got 32 responses, 12 phone interviews, 3 follow-up face-to-face interviews, and 1 job offer, which I rejected. Output a downloadable sankey diagram of this data. 

 Sure, I can help you create a Sankey diagram using this data. A Sankey diagram is a type of flow diagram where the width of the arrows is proportional to the flow rate.


Let's first generate this diagram.


I will use the Python library `'plotly'` to create a Sankey diagram, and then I will save it as an HTML file which you can download and view in any web browser. The plotly library is quite powerful for creating interactive plots, and this includes Sankey diagrams. Let's proceed with creating the diagram.


Finished working 







The Sankey diagram has been created and saved as an HTML file. You can download it using the link below:

[Download Sankey diagram](#)

 Make it more beautiful, with different shades of colour at every stage, bolded text with a different font, and a button to launch the process from start to finish.

 Regenerate response

 Send a message.

8:25 / 24:22  OFF • 7. Video Editing >     

Examples

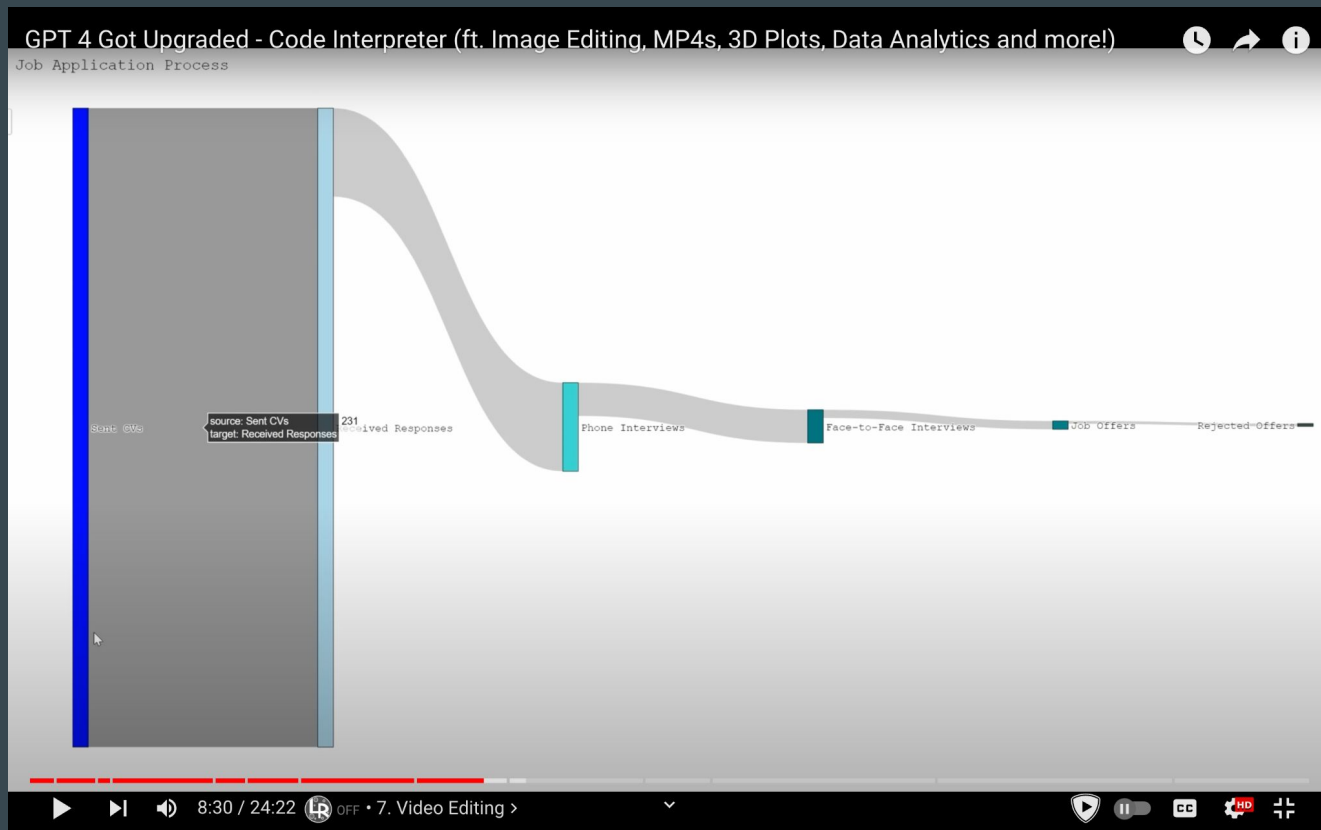
Q/A

Code Interpreter

Fact Checking

Coding

Tool Use



Examples

Q/A

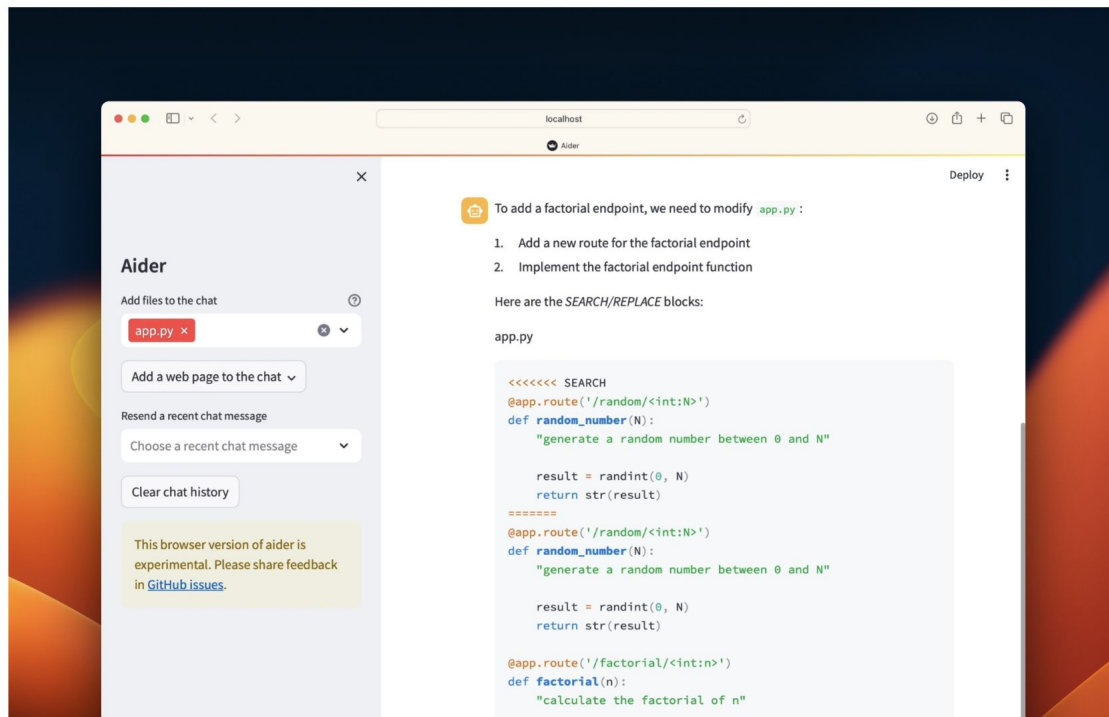
Code Interpreter

Fact Checking

Coding

Tool Use

Aider in your browser



Examples

Q/A

Code Interpreter

Fact Checking

Coding

Tool Use

Devon: An open-source pair programmer

CONTRIBUTORS

10

FORKS

120

STARS

1.7K

ISSUES

13 OPEN

LICENSE

AGPL-3.0

DISCORD

JOIN US

demo.mp4

```
edit_file <<<
--- /Users/nhirschintawar/game_of_life.py
+++ /Users/nhirschintawar/game_of_life.py
@@ -55,6 +55,11 @@

```

```
# Render game state
screen.fill(BLACK)
for row in range(ROWS):
    for col in range(COLS):
        if grid[row][col] == 1:
            rect = pygame.Rect(c
            pygame.draw.rect(scr

pygame.display.flip()
clock.tick(60)
>>>

```

> Successfully edited file(s): /Users/nh

Devon is thinking...

The game of life simulation using Pygame

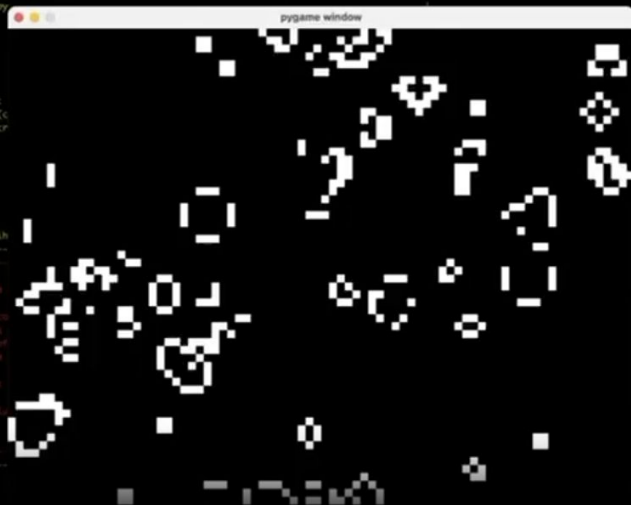
1. Initializing the grid with a random va
2. Counting the number of live neighbors
3. Updating the grid based on the game of
4. Rendering the game state using Pygame

I've implemented all the necessary logic

To verify everything is working correctly,

considered complete.

0:00 / 0:30



Examples

Q/A

Code Interpreter

Fact Checking

Coding

Memory



MemGPT

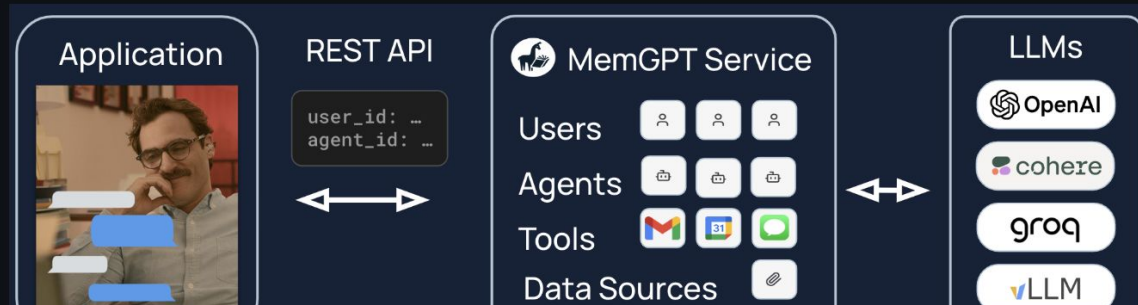
MemGPT allows you to build LLM agents with long term memory & custom tools

[Discord](#) [rate limited by upstream service](#) [follow @MemGPT](#) [arXiv 2310.08560](#) [Documentation v0.3.15](#)

MemGPT makes it easy to build and deploy stateful LLM agents with support for:

- Long term memory/state management
- Connections to [external data sources](#) (e.g. PDF files) for RAG
- Defining and calling [custom tools](#) (e.g. [google search](#))

You can also use MemGPT to deploy agents as a *service*. You can use a MemGPT server to run a multi-user, multi-agent application on top of supported LLM providers.



Examples

Q/A

Code Interpreter

Fact Checking

Coding

Tool Use



crewAI

🛠️ **crewAI**: Cutting-edge framework for orchestrating role-playing, autonomous AI agents. By fostering collaborative intelligence, CrewAI empowers agents to work together seamlessly, tackling complex tasks.

[Homepage](#) | [Documentation](#) | [Chat with Docs](#) | [Examples](#) | [Discord](#)

Stars 15k License MIT

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- [Getting Started](#)
- [Key Features](#)
- [Examples](#)
 - [Quick Tutorial](#)

Examples

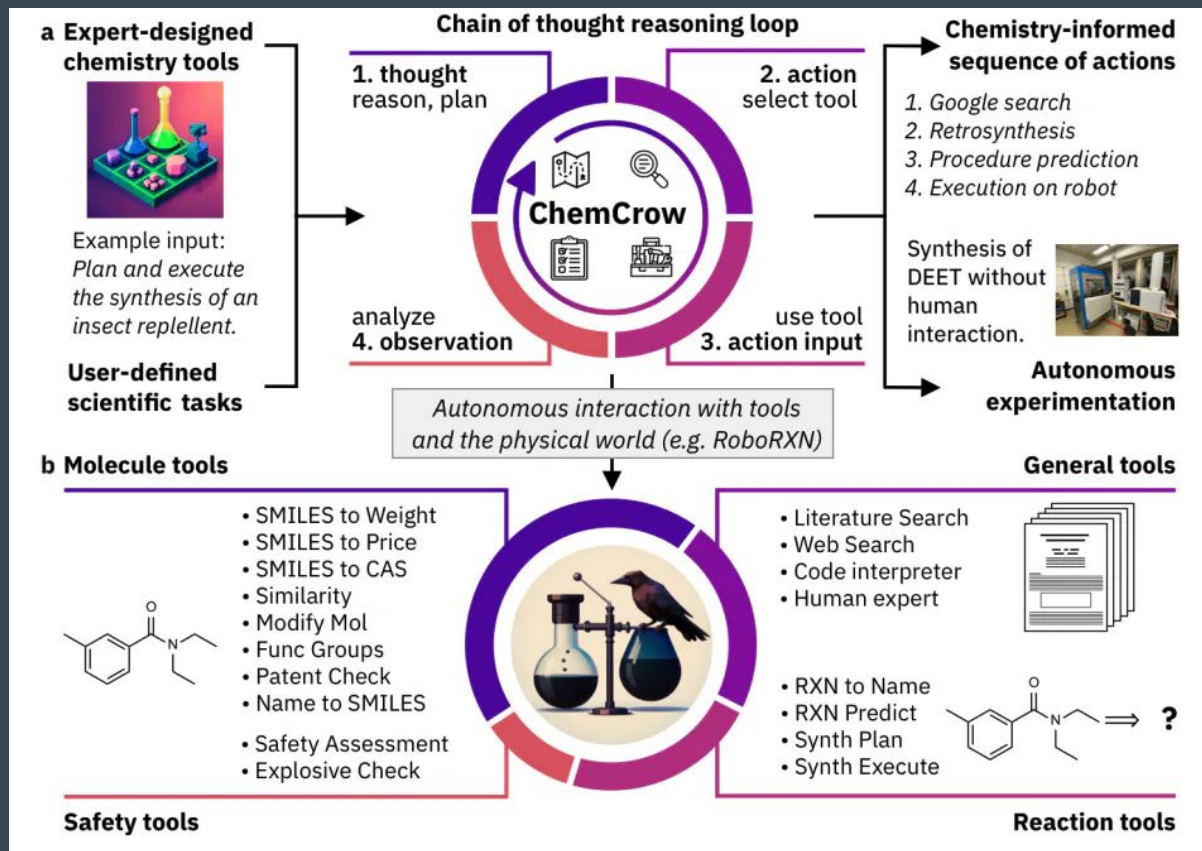
Q/A

Code Interpreter

Fact Checking

Coding

Tool Use



Reasoning, Acting

HotPotQA

Question: Seven Brief Lessons on Physics was written by an Italian physicist that has worked in France since what year?

(a) Standard

Answer: 1986



Reasoning, Acting

Large Language Models are Zero-Shot Reasoners

<https://arxiv.org/abs/2205.11916>

(b) Few-shot-CoT

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 balls. 2 cans of 3 tennis balls each is 6 tennis balls. $5 + 6 = 11$. The answer is 11.

Q: A juggler can juggle 16 balls. Half of the balls are golf balls, and half of the golf balls are blue. How many blue golf balls are there?

A:

(Output) The juggler can juggle 16 balls. Half of the balls are golf balls. So there are $16 / 2 = 8$ golf balls. Half of the golf balls are blue. So there are $8 / 2 = 4$ blue golf balls. The answer is 4. ✓

(d) Zero-shot-CoT (Ours)

Q: A juggler can juggle 16 balls. Half of the balls are golf balls, and half of the golf balls are blue. How many blue golf balls are there?

A: **Let's think step by step.**

(Output) There are 16 balls in total. Half of the balls are golf balls. That means that there are 8 golf balls. Half of the golf balls are blue. That means that there are 4 blue golf balls. ✓

Reasoning, Acting

(b) Few-shot-CoT

Q: Roger has 5 tennis balls. He buys 2 more cans of tennis balls. Each can has 3 tennis balls. How many tennis balls does he have now?

A: Roger started with 5 balls. 2 cans of 3 tennis balls each is 6

(b) Reason only

Thought: Let's think step by step. Seven Brief Lessons on Physics was written by Carlo Rovelli. Carlo Rovelli has worked in France since 1990.

Answer: 1990



Large Language Models are Zero-Shot Reasoners

<https://arxiv.org/abs/2205.11916>

Q: A juggler can juggle 16 balls. Half of the balls are golf balls, and half of the golf balls are blue. How many blue golf balls are there?

A: **Let's think step by step.**

(Output) There are 16 balls in total. Half of the balls are golf balls. That means that there are 8 golf balls. Half of the golf balls are blue. That means that there are 4 blue golf balls. ✓

Reasoning, Acting

(c) Act only

Act 1: **Search**[Seven Brief Lessons on Physics]

Obs 1: Seven Brief Lessons on Physics (Italian: Sette brevi lezioni di fisica) is a short book by the Italian physicist Carlo Rovelli. Originally published in Italian in...

Act 2: **Lookup**[Carlo Rovelli]

Obs 2: (Result 1 / 1) Seven Brief Lessons on Physics (Italian: Sette brevi lezioni di fisica) is a short book by the Italian physicist Carlo Rovelli.

Act 3: **Finish**[1983]



Reasoning, Acting

(d) ReAct

Thought 1: I need to search Seven Brief Lessons on Physics, find its author, then find when the author has worked in France since.

Act 1: `Search`[Seven Brief Lessons on Physics]

Obs 1: Seven Brief Lessons on Physics (Italian: Sette brevi lezioni di fisica) is a short book by the Italian physicist Carlo Rovelli. Originally published in Italian in...

Thought 2: The author of Seven Brief Lessons on Physics is Carlo Rovelli. I need to search Carlo Rovelli next and find when he has worked in France since.

Act 2: `Search`[Carlo Rovelli]

Obs 2: Carlo Rovelli is an Italian theoretical physicist and writer who has worked in Italy, the United States and, since 2000, in France.[1] He is also currently a Distinguished Visiting Research Chair at the Perimeter Institute...

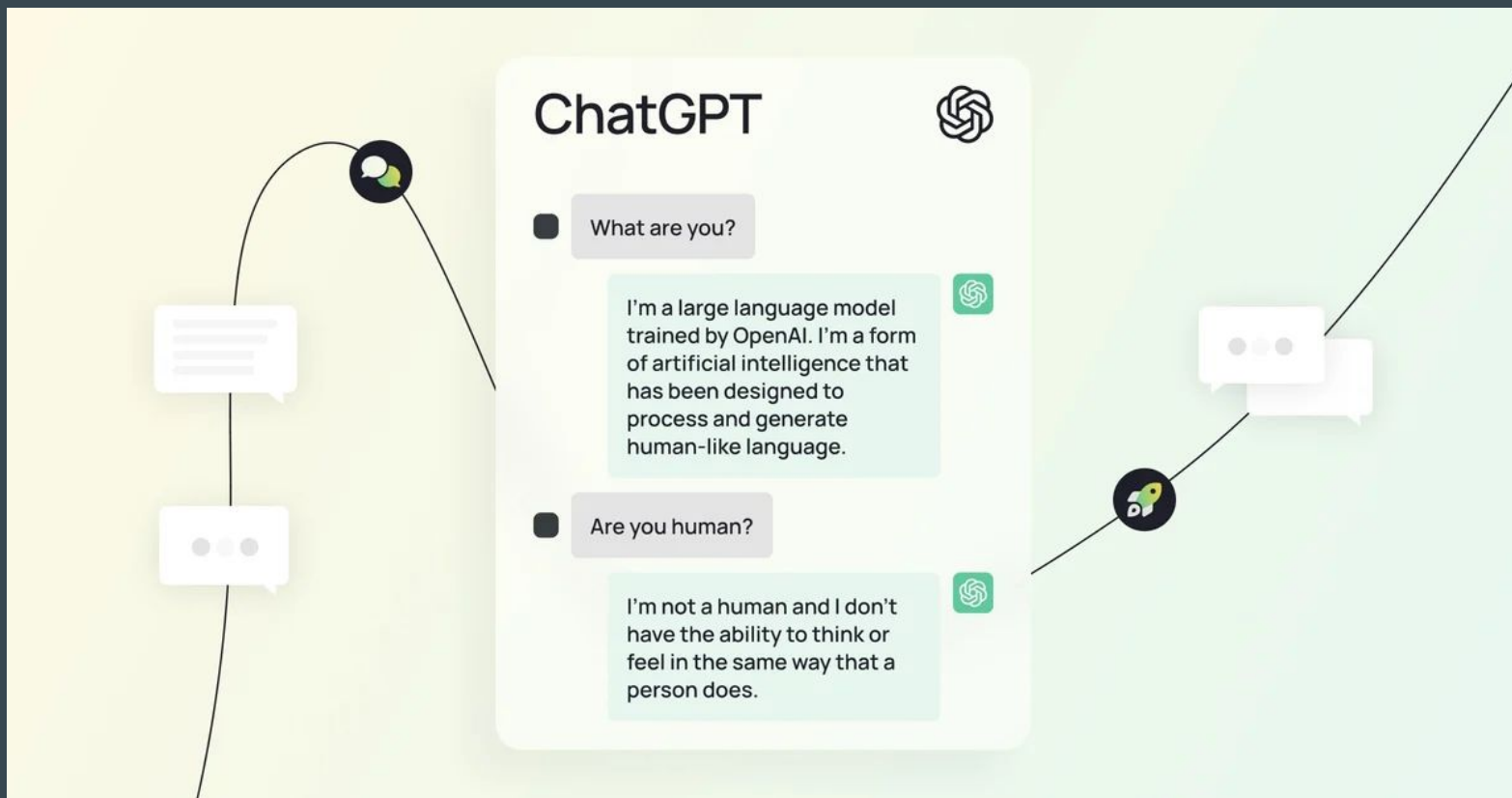
Thought 3: Carlo Rovelli has worked in France since 2000. So the answer is 2000.

Act 3: `Finish`[2000]



Chat Review

Chat



LLMs predict the next token(s)

Image

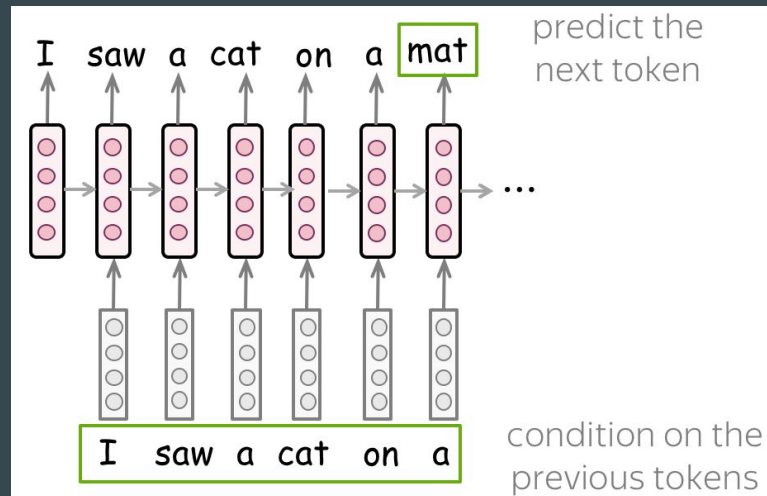
The cat sat on the **mat**

The cat sat on the **mat** and?

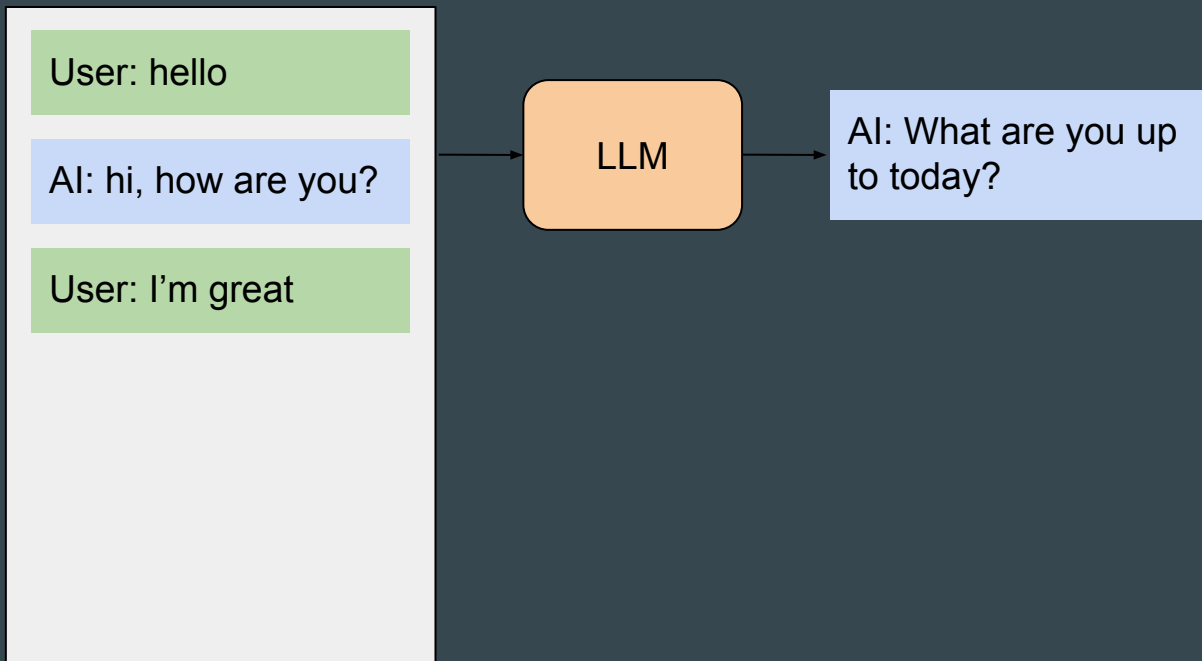
The cat sat on the **mat** and? **the mat was warm and cozy.**

LLM as a function

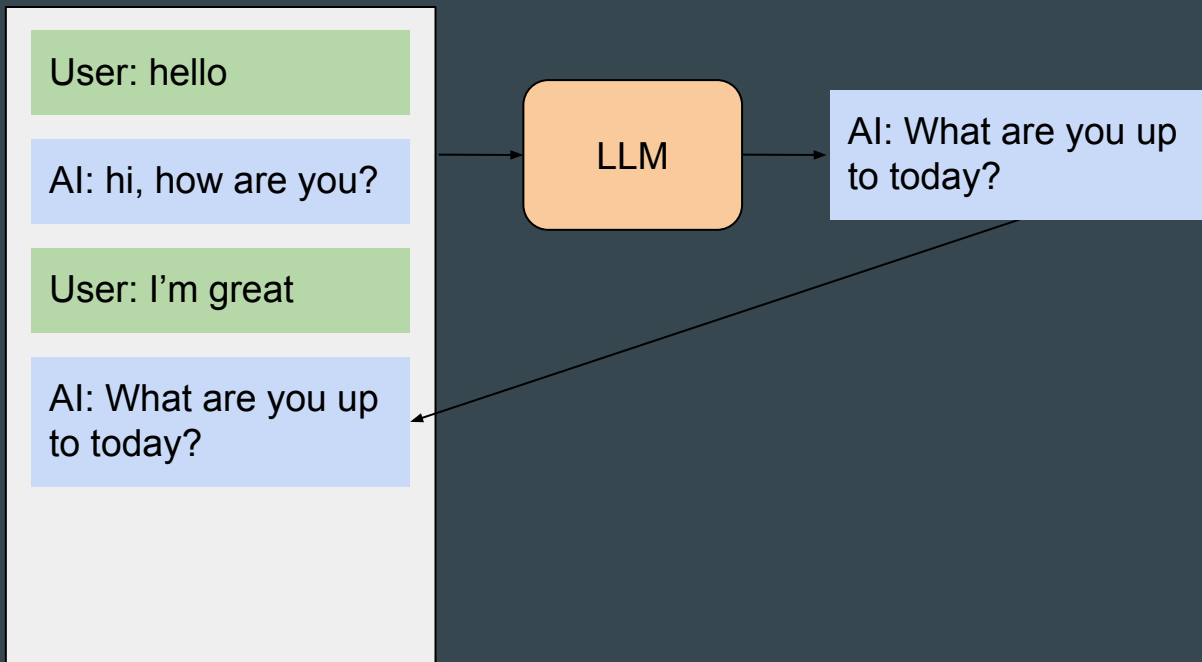
The cat sat on the → LLM → **mat**



And the next chat response



And the next chat response



And the next chat response

User: hello

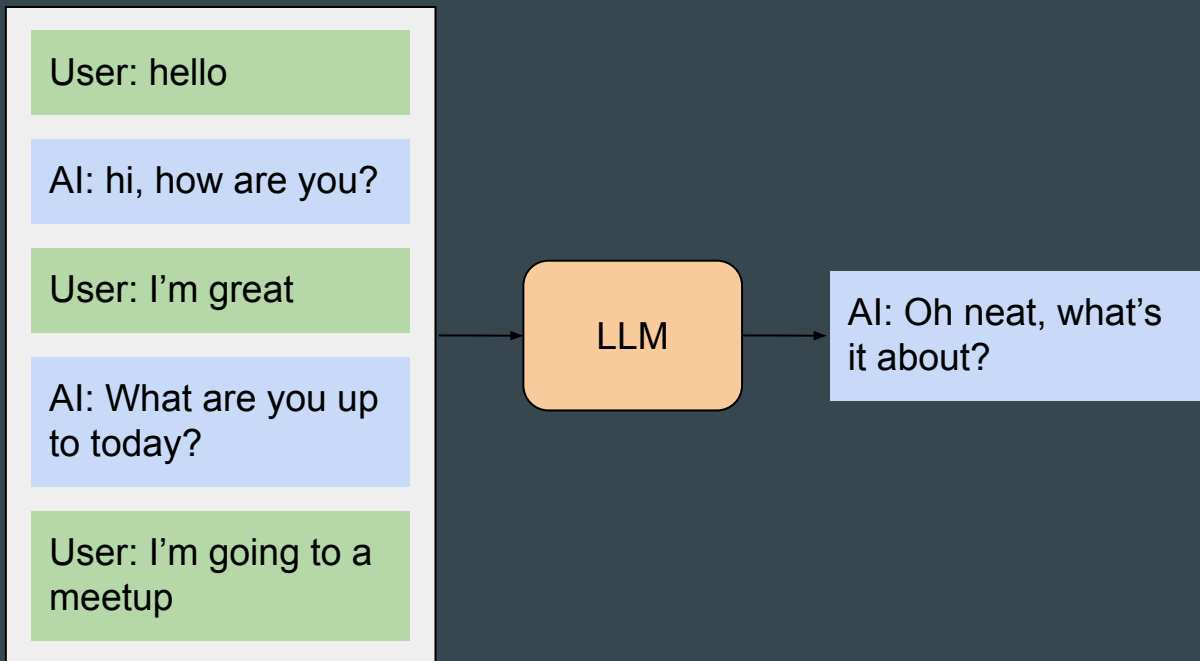
AI: hi, how are you?

User: I'm great

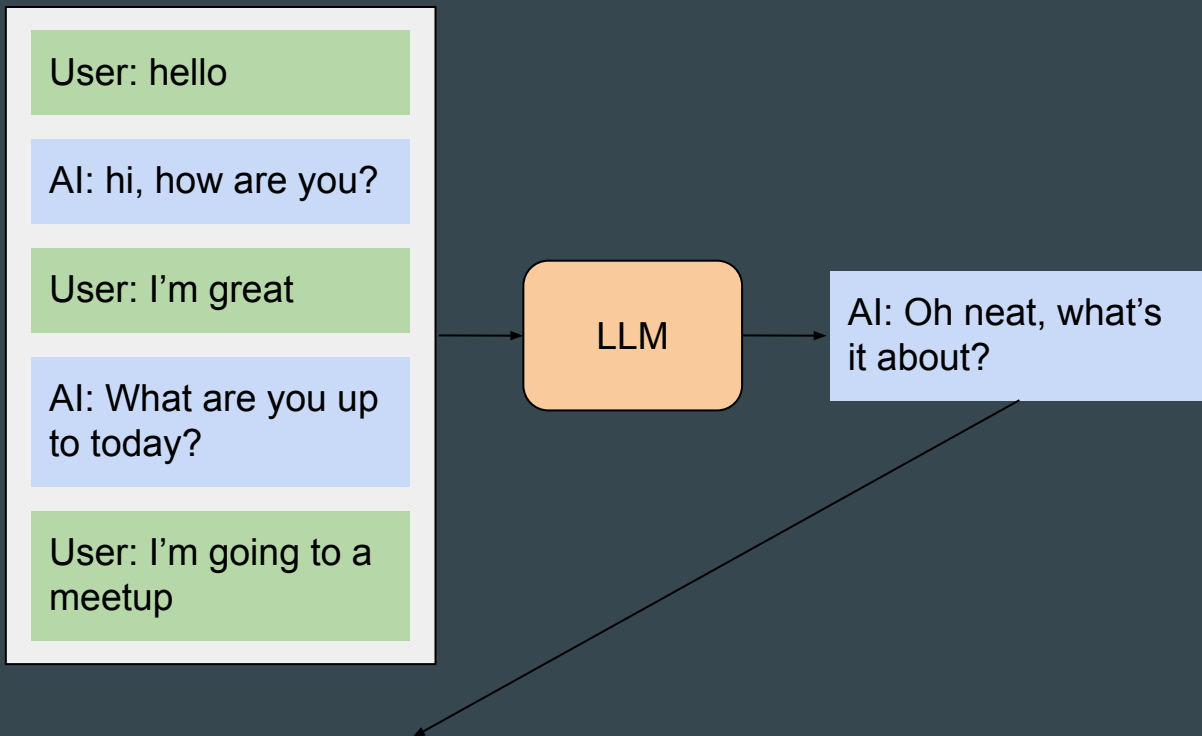
AI: What are you up to today?

User: I'm going to a
meetup

And the next chat response



And the next chat response



To Chat

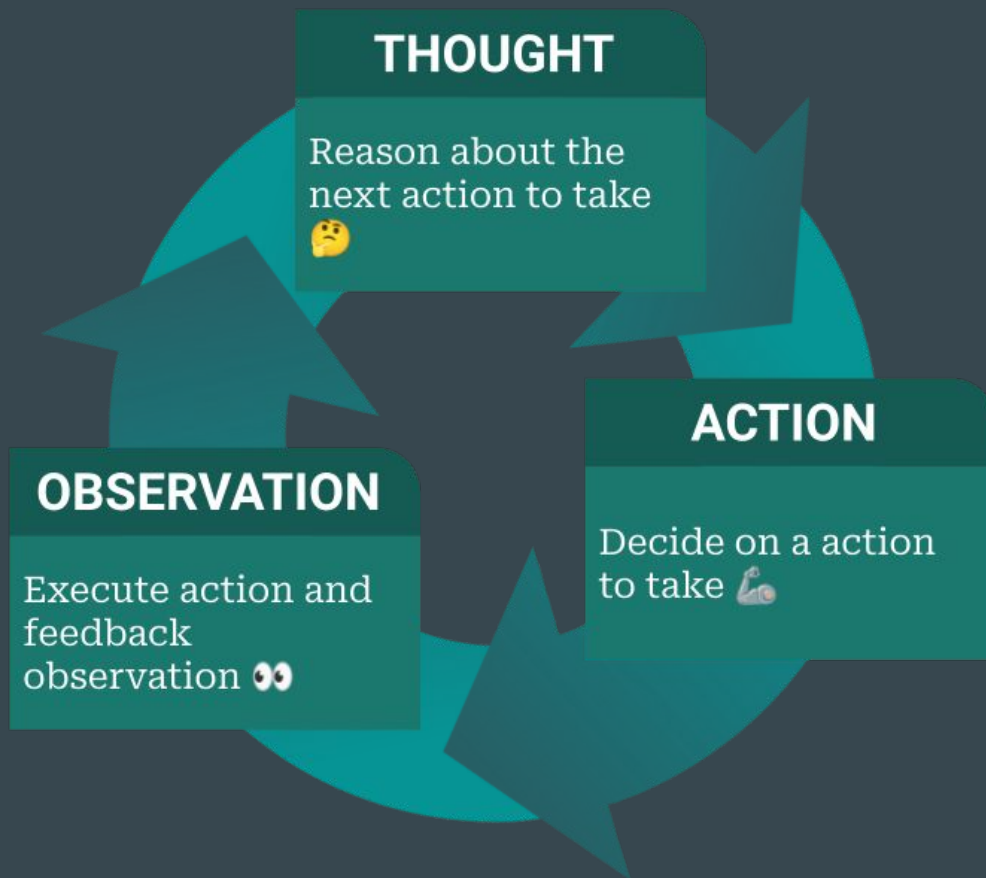
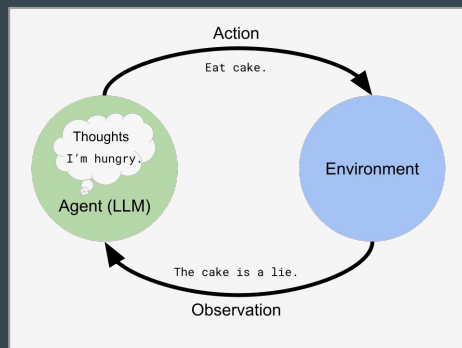
Bunch of messages in, response out

Tags, ChatML etc.

Building ReAct

Agent Paradigm

Robot + World



Thinking and Acting

U: Question input: I need to know age of SZA to the power of 2

A: Thought: First I need to look up her age

A: Action: wikipedia: SZA

U: Observation: A musician...

A: Thought: Now I need to calculate her age to the power of 2

A: Action: calculate: 36^2

U: Observation: 1296

A: (Final) Answer: SZA's age to the power of 2 is 1296

Architecture

Agent

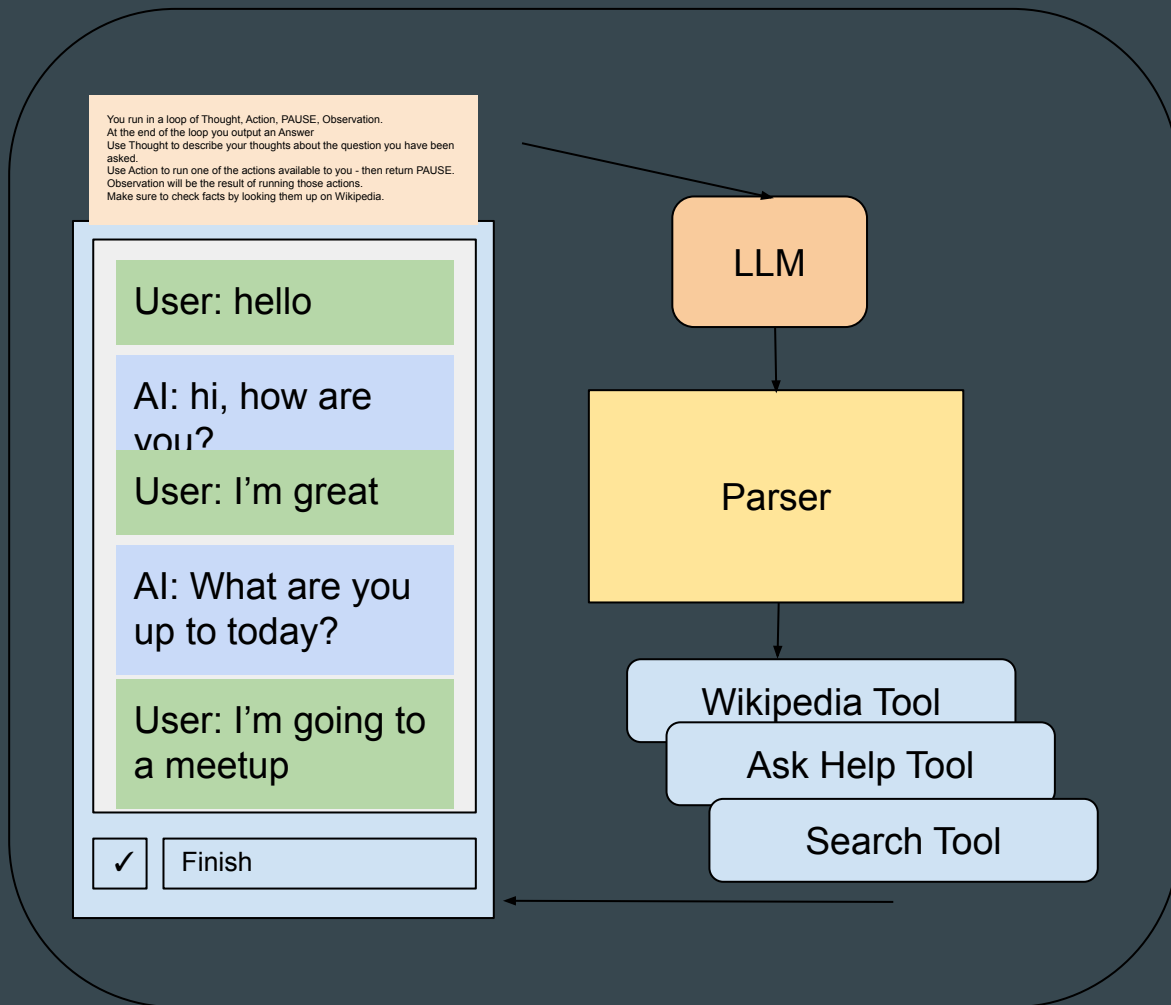
State

Tools

Parser

LLM

System Prompt



System Prompt

You run in a loop of Thought, Action, PAUSE, Observation.
At the end of the loop you output an Answer
Use Thought to describe your thoughts about the question you have been asked.
Use Action to run one of the actions available to you – then return PAUSE.
Observation will be the result of running those actions.
Make sure to check facts by looking them up on Wikipedia.

Your available actions are:

calculate:

e.g. calculate: $4 * 7 / 3$

Runs a calculation and returns the number – uses Python so be sure to use floating point syntax if necessary

wikipedia:

e.g. wikipedia: Django

Returns a summary from searching Wikipedia

simon_blog_search:

e.g. simon_blog_search: Django

Search Simon's blog for that term

Always look things up on Wikipedia if you have the opportunity to do so.

Example session:

Question: What is the capital of France?

Thought: I should look up France on Wikipedia

Action: wikipedia: France

PAUSE

You will be called again with this:

Observation: France is a country. The capital is Paris.

You then output:

Answer: The capital of France is Paris

System Prompt

Prefix

Mechanism of Action

Tool Descriptions

Example(s)

Suffix

Mechanism of Action

You run in a loop of Thought, Action, PAUSE, Observation.

At the end of the loop you output an Answer

Use Thought to describe your thoughts about the question you have been asked.

Use Action to run one of the actions available to you - then return PAUSE.

Observation will be the result of running those actions.

Make sure to check facts by looking them up on Wikipedia.

Actions/Tools

Your available actions are:

calculate:

e.g. calculate: $4 * 7 / 3$

Runs a calculation and returns the number - uses Python so be sure to use floating point syntax if necessary

wikipedia:

e.g. wikipedia: Django

Returns a summary from searching Wikipedia

ask_for_help:

e.g. ask_for_help: Can't find the file foo.txt. What should I do?

User will respond with some advice

Example(s)

Example session:

Question: What is the capital of France?

Thought: I should look up France on Wikipedia

Action: wikipedia: France

PAUSE

You will be called again with this:

Observation: France is a country. The capital is Paris.

You then output:

Answer: The capital of France is Paris

Random / Bits and Bobs

Prefix: You are an expert coder...

Make sure to check facts by looking them up on Wikipedia.

Always look things up on Wikipedia if you have the opportunity to do so.

ALWAYS reply in JSON format

Suffix: let's go

Demo

Code Tour

Other Examples

Chatty TODO

Coding Agents

Me



<https://www.linkedin.com/in/thetobe/>