

PyCon China

Python for Good

2023

Hello AI





How to use Semantic Kernel and Azure OpenAI Service develop your LLM applications

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What is LLM Application ?



Insomnia

Application File Edit View Window Tools Help

Home

+

AOAI

Base Environment

Add Cookies

Filter

POST New Req...

POST https://pycon2023.openai.azure.com/openai/de

Send

200 OK

2.83 s

1102 B

3 Minutes Ago

JSON

Auth

Query

Headers 4

Docs

Headers 14

Cookies

Timeline

1 {
2 "messages": [
3 {
4 "role": "system",
5 "content": "You are an AI assistant that helps
people find information."
6 },
7 {
8 "role": "user",
9 "content": "who are you?"
10 }
11],
12 "temperature": 0.7,
13 "top_p": 0.95,
14 "frequency_penalty": 0,
15 "presence_penalty": 0,
16 "max_tokens": 800,
17 "stop": null
18 }

The request has succeeded.

1 {
2 "id": "chatcmpl-8R0btRKiBrd55t9dU9FXLoaqBuyL5",
3 "object": "chat.completion",
4 "created": 1701447893,
5 "model": "gpt-4",
6 "prompt_filter_results": [1],
29 "choices": [
30 {
31 "index": 0,
32 "finish_reason": "stop",
33 "message": {
34 "role": "assistant",
35 "content": "I am an AI digital assistant
designed to provide information, answer questions, and
assist users with various tasks. My capabilities
include processing natural language inputs, searching
for information, and offering assistance based on the
data available to me up to my last knowledge update.
How can I help you today?"
36 },
37 "content_filter_results": {
38 "hate": {
39 "filtered": false,
40 "severity": "safe"
41 },
42 }
43 }
44]
45 }

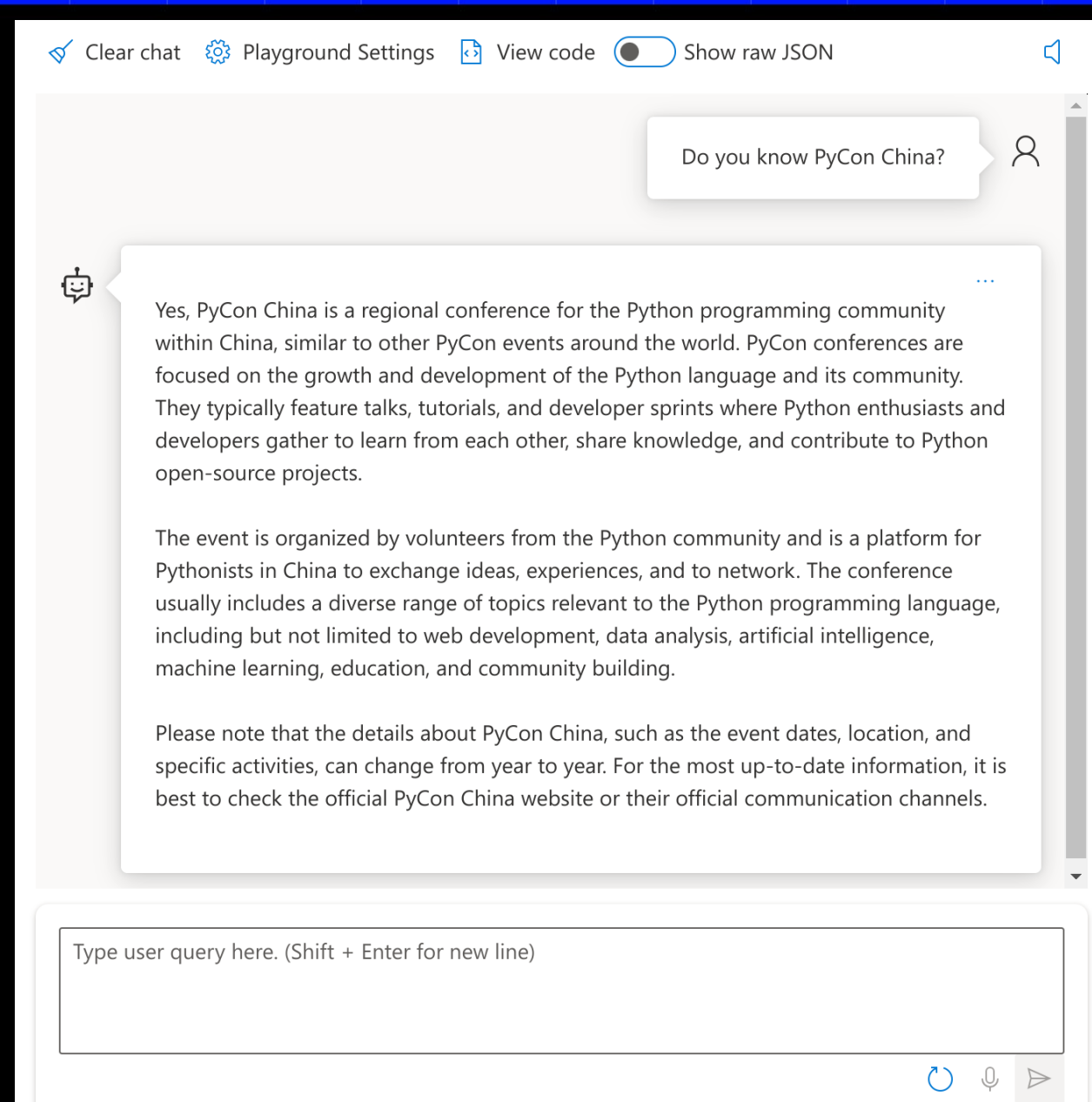
master Beautify JSON \$.store.books[*].author

Preferences

Online

Made with ❤ by Kong

The application of LLM is essentially the same as existing applications, except that it calls upon the abilities/APIs of LLM.

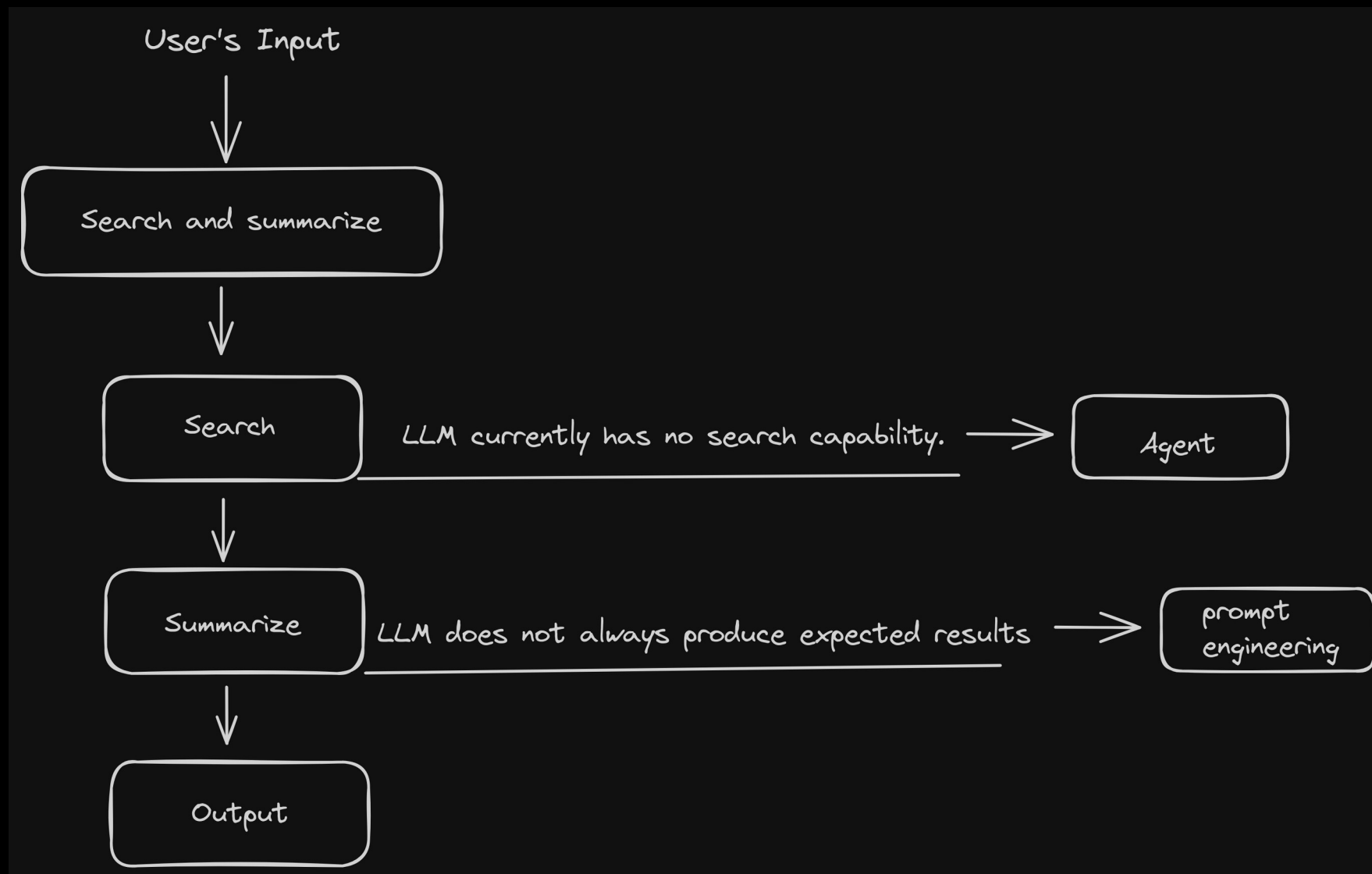


What is Prompt engineering ?





Prompt engineering is the process of designing and refining questions or instructions to get specific responses from AI models.






- Zero-shot prompting
- Few-shot prompting
- Chain-of-thought (CoT)
- Retrieval Augmented Generation(RAG)
- ReAct Prompting
- ...








Filter by


<> Code 680k

 Repositories 9.6k

 Issues 21k


 Pull requests 15k


 Discussions 3k


 Users 489


More


Languages


 Python


 Jupyter Notebook


 TypeScript


 HTML


 JavaScript

 Rust

 Go


 Java


 CSS


 C#


More languages...


Advanced

 Owner

 Size



 Number of followers

 Number of forks

 Number of stars



9.6k results (700 ms)

Sort by: Most stars Save ...

 **langchain-ai/langchain** 

⚡ Building applications with LLMs through composability ⚡



Python · ☆ 69.9k · Updated 1 minute ago

 **binary-husky/gpt_academic** 

为ChatGPT/GLM提供实用化交互界面，特别优化论文阅读/润色/写作体验，模块化设计，支持自定义快捷按钮&函数插件，支持Python和C++等项目剖析&自译解功能，PDF/LaTex论文翻译&总结功能，支持并行问询多种LLM模型，支持chatglm2等本地模型。兼容文心...

academic gpt-4 large-language-models chatgpt chatglm-6b



Python · ☆ 48.1k · Updated 8 hours ago

 **geekan/MetaGPT** 

🌟 The Multi-Agent Framework: Given one line Requirement, return PRD, Design, Tasks, Repo

agent multi-agent gpt hacktoberfest llm



Python · ☆ 30.9k · Updated 1 hour ago

 **run-llama/llama_index** 

LlamaIndex (formerly GPT Index) is a data framework for your LLM applications

application data framework agents fine-tuning



Python · ☆ 24.5k · Updated 27 minutes ago

 **microsoft/JARVIS** 


JARVIS, a system to connect LLMs with ML community. Paper: <https://arxiv.org/pdf/2303.17580.pdf>

platform deep-learning pytorch

Python · ☆ 22.2k · Updated 15 hours ago

 **mindsdb/mindsdb** 

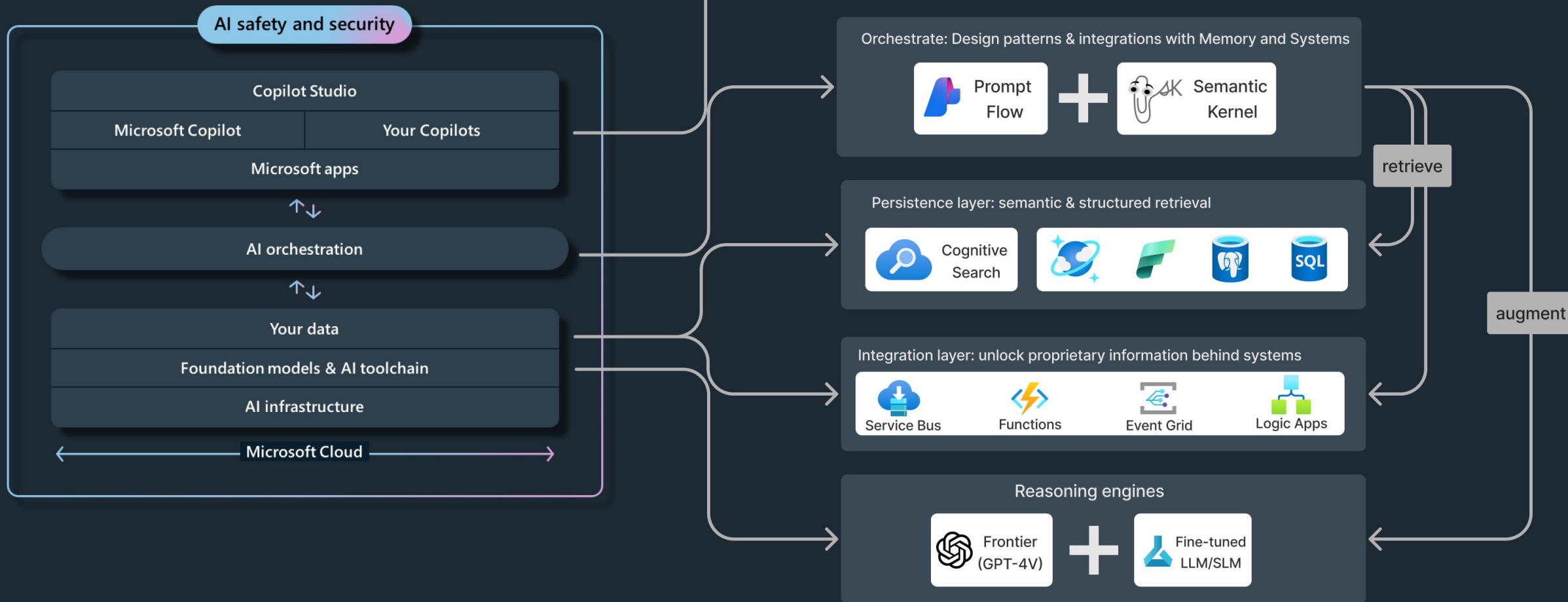
MindsDB connects AI models to real time data



What is Semantic Kernel ?

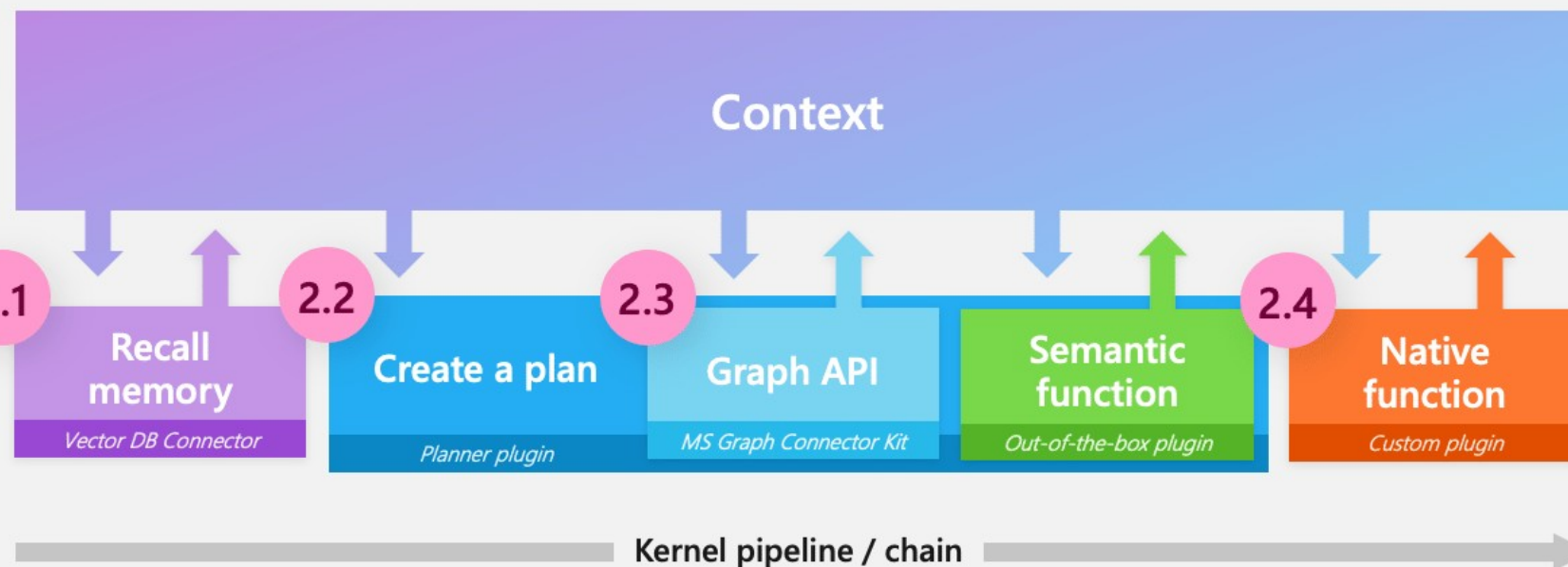


Copilot stack



2

The kernel



1

Please create a series of tasks to complete a marketing project. Once you're done, please summarize them and send them to my team.

Copilot

Here's the email with the summarized tasks in it.

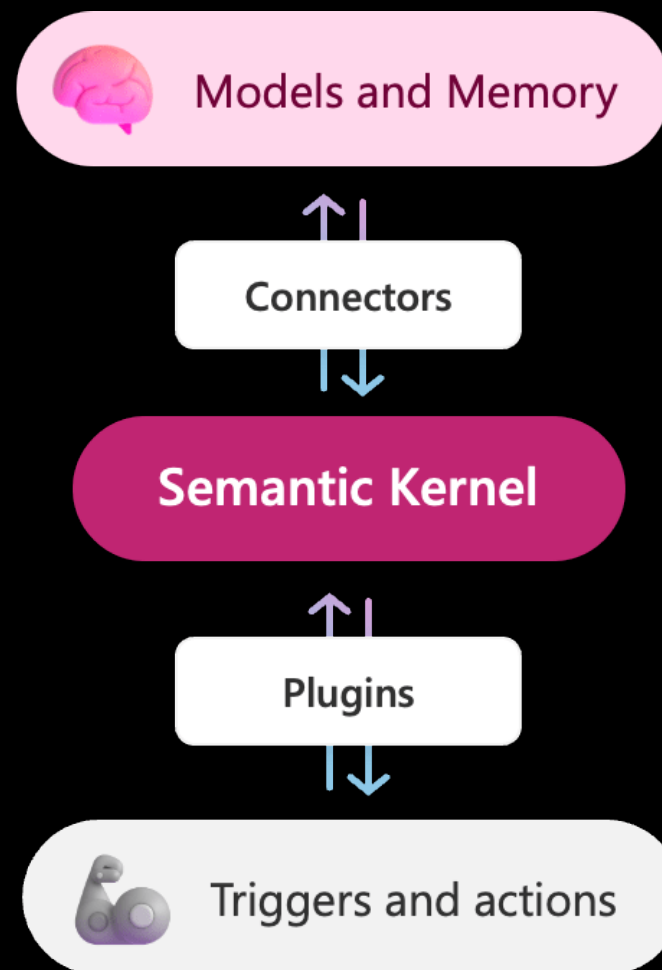


New marketing tasks

3



- Framework
- Integrate with multiple models
- Custom plugins
- ...



How to use Semantic Kernel ?





```
import semantic_kernel as sk
from semantic_kernel.connectors.ai.open_ai import AzureChatCompletion

kernel = sk.Kernel()

deployment, api_key, endpoint = sk.azure_openai_settings_from_dot_env()
kernel.add_chat_service("dv", AzureChatCompletion(deployment, endpoint,
api_key=api_key))
prompt = kernel.create_semantic_function("""
Do you know PyCon China?""")

print(prompt())
```



```
from semantic_kernel.core_skills.text_skill import TextSkill

skills_directory = "../..samples/skills/"

summarize_skill = kernel.import_semantic_skill_from_directory(skills_directory,
"SummarizeSkill")
writer_skill = kernel.import_semantic_skill_from_directory(skills_directory, "WriterSkill")


text_skill = kernel.import_skill(TextSkill(), "TextSkill")

from semantic_kernel.planning.basic_planner import BasicPlanner
planner = BasicPlanner()

basic_plan = await planner.create_plan_async(ask, kernel)
print(basic_plan.generated_plan)

{
    "input": "Valentine's Day Date Ideas",
    "subtasks": [
        {"function": "WriterSkill.Brainstorm"},
        {"function": "WriterSkill.Translate", "args": {"language": "French"}},
        {"function": "TextSkill.uppercase"}
    ]
}
```


New Skill (Plugin)



```
sk_prompt = """
{{$input}}

Rewrite the above in the style of Shakespeare.
"""

shakespeareFunction = kernel.create_semantic_function(sk_prompt, "shakespeare",
"ShakespeareSkill", max_tokens=2000, temperature=0.8)
```

samples > skills > ChatSkill > ChatGPT > ≡ skprompt.txt

```

1  This is a conversation between {{$firstName}} and you.
2  Your Name: {{$botName}}. Play the persona of: {{$attitude}}.
3  Use CONTEXT to LEARN ABOUT {{$firstName}}.
4
5  [CONTEXT]
6  TODAY is {{date}}
7  FIRST NAME: {{$firstname}}
8  LAST NAME: {{$lastname}}
9  CITY: {{$city}}
10 STATE: {{$state}}
11 COUNTRY: {{$country}}
12 {{recall $input}}
13 [END CONTEXT]
14
15 USE INFO WHEN PERTINENT.
16 KEEP IT SECRET THAT YOU WERE GIVEN CONTEXT.
17 ONLY SPEAK FOR YOURSELF.
18
19 {{$firstName}}: I have a question. Can you help?
20 {{$botName}}: Of course. Go on!
21 [Done]
22 {{$history}}
23 [Done]
24 ++++
25 {{$firstName}}:{{$input}}
26

```



Writer plugin

Function	Description for model
Brainstorm	Given a goal or topic description generate a list of ideas.
EmailGen	Write an email from the given bullet points.
ShortPoem	Turn a scenario into a short and entertaining poem.
StoryGen	Generate a list of synopsis for a novel or novella with sub-chapters.
Translate	Translate the input into a language of your choice.

Can you write me a short poem about living in Dublin, Ireland and then create a story based on the poem?

Planner

Copilot

Sure! Here's a story based on living along the Grand Canal in Dublin, Ireland...



<https://github.com/microsoft/semantic-kernel>

