AI 大模型开发工程师
之深入浅出LangChain之Agents模块
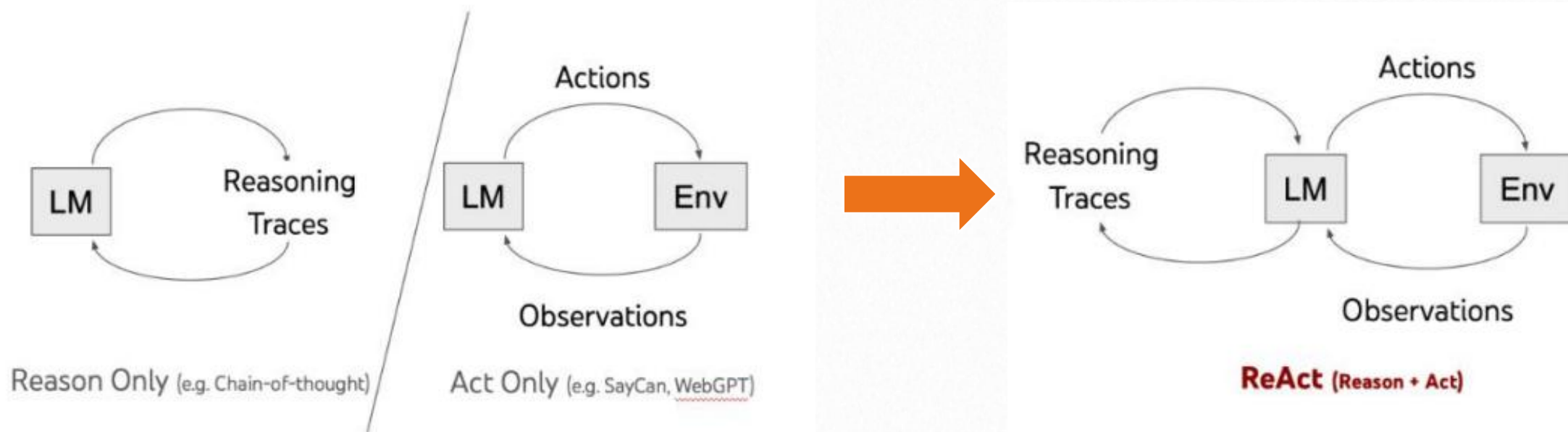
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“ 目录

1 LangChain Agent设计理念

问题：卡塔尔世界杯的冠军球队是?

02、ReAct测试效果

Prompting Method	HotpotQA (question answering, exact match, 6-shot)	FEVER (fact verification, accuracy, 3-shot)	ALFWorld (text-based game, succ rate, 2-shot)	WebShop (web interaction, succ rate, 1-shot)
Standard (IO)	28.7	57.1	N/A (cannot act)	N/A (cannot act)
Reason-only (CoT)	29.4	56.3	N/A (cannot act)	N/A (cannot act)
Act-only	25.7	58.9	45	30.1
Best ReAct method	**35.1**	**64.6**	**71**	**40**
Supervised/Imitation Learning SoTA	**67.5** (140k samples)	**89.5** (90k samples)	37 (100k samples)	29.1 (90k samples)

03、ReAct 的优势

Question: Aside from the Apple Remote, what other device can control the program Apple Remote was originally designed to interact with?

Standard

Answer: iPod ✗

Reason only

Thought: Let's think step by step. Apple Remote was originally designed to interact with Apple TV. Apple TV can be controlled by iPhone, iPad, and iPod Touch. So the answer is iPhone, iPad, and iPod Touch.

Answer: iPhone, iPad, iPod Touch ✗

Act only

Act 1: Search[Apple Remote]
Obs 1: The Apple Remote is a remote control introduced...
Act 2: Search[Front Row]
Obs 2: Could not find [Front Row]. Similar: ...
Act 3: Search[Front Row (software)]
Obs 3: Front Row is a discontinued media center software ...
Act 4: Finish[yes] ✗

ReAct

Thought 1: I need to search Apple Remote and find the program it was originally designed to interact with.
Act 1: Search[Apple Remote]
Obs 1: The Apple Remote is a remote control introduced in October 2005 by Apple … originally designed to control the Front Row media center program …

Thought 2: Apple Remote was originally designed to control the Front Row media center program. I need to search Front Row next and find what other device can control it.
Act 2: Search[Front Row]
Obs 2: Could not find [Front Row]. Similar: ['Front Row Seat to Earth', 'Front Row Motorsports','Front Row (software)', …]

Thought 3: Front Row is not found. I need to search Front Row (software) .
Act 3: Search[Front Row (software)]
Obs 3: Front Row is a discontinued media center software …

Thought 4: Front Row (software) is controlled by an Apple Remote or the keyboard function keys. So the answer is keyboard function keys.
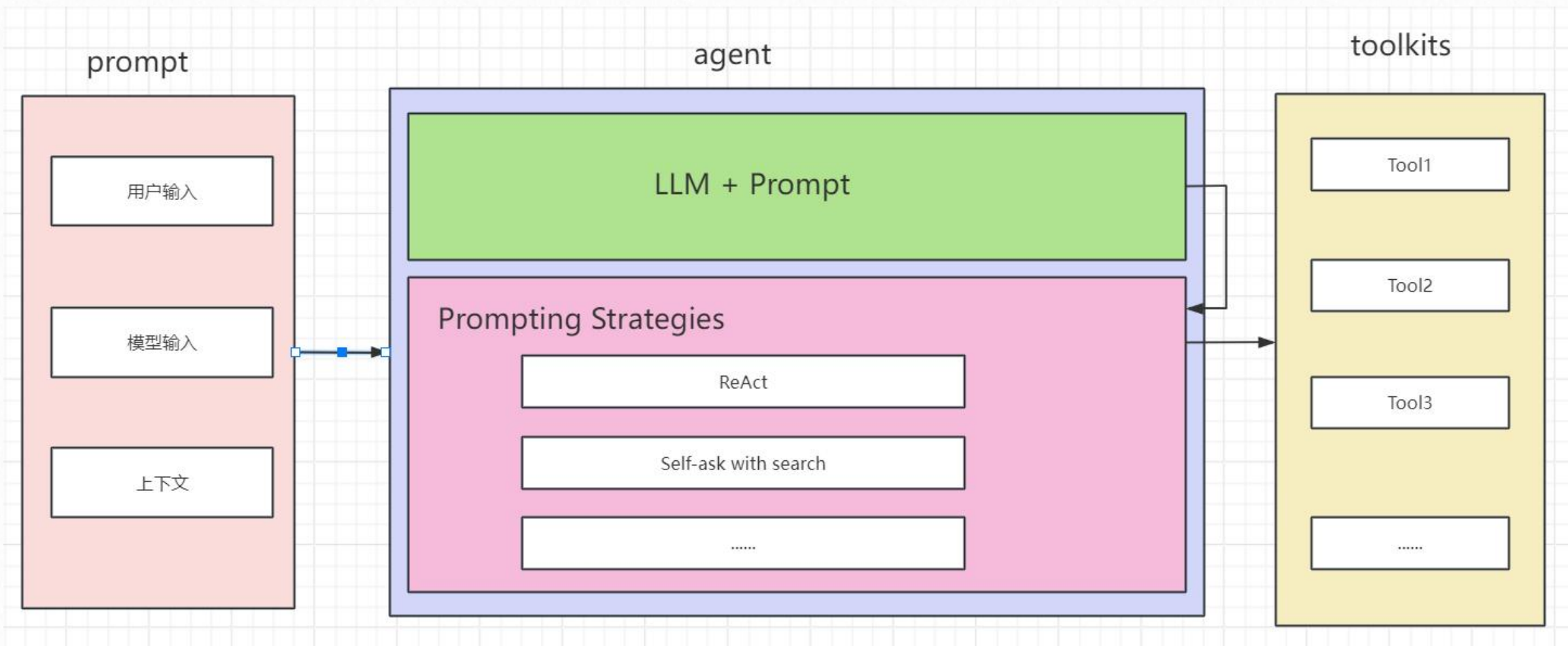**Act 4:** Finish[keyboard function keys] ✓

04、Agent设计理念

```python
next_action = agent.get_action(...)
while next_action != AgentFinish:
    observation = run(next_action)
    next_action = agent.get_action(..., next_action, observation)
return next_action
```
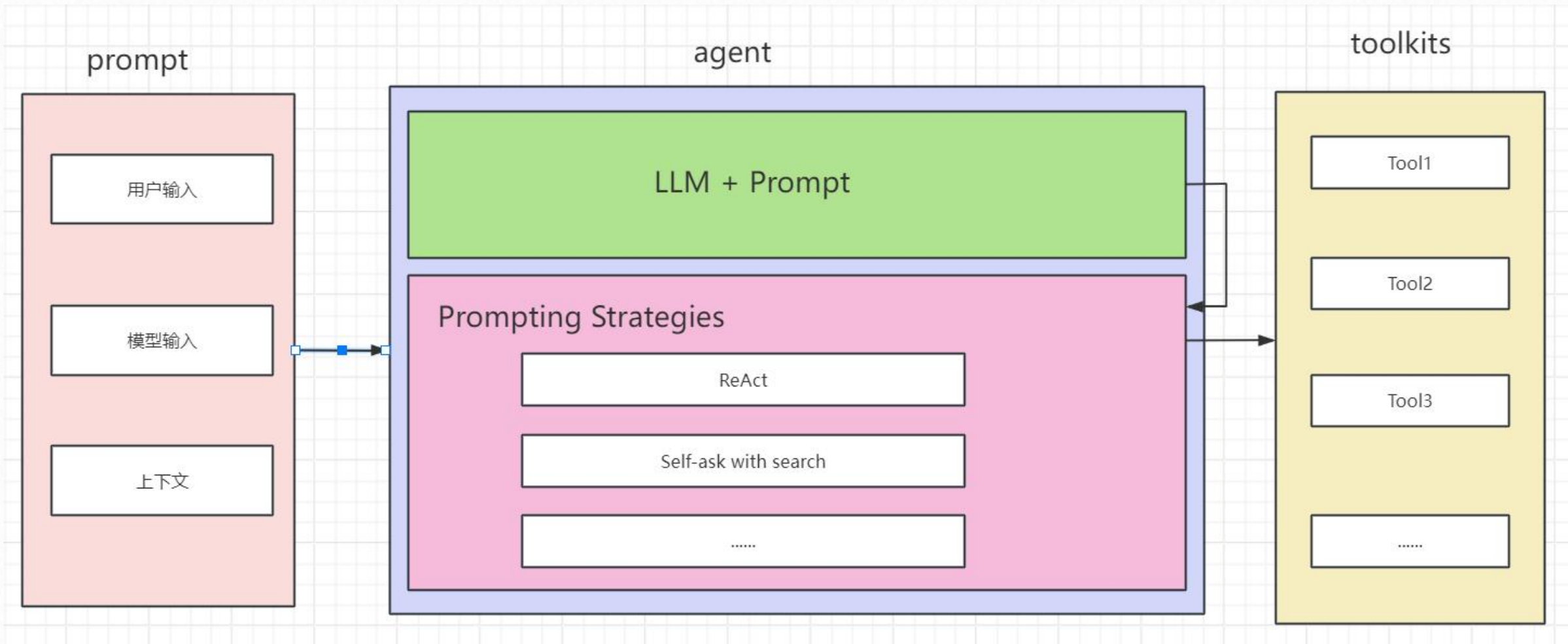
AgentExecutor

05、Agent设计理念

思考链模式：React，Plan-and-execute Agent，Baby AGI，Auto GPT

AgentExecutor

```
llm = OpenAI(model_name="gpt-4",temperature=0,openai_api_base = "https://newone.nxykj.tech/v1")

search = SerpAPIWrapper()
tools = [
    Tool(
        name="Intermediate Answer",
        func=search.run,
        description="useful for when you need to ask with search",
    )
]
```

```
[10]:  self_ask_with_search = initialize_agent(
           tools, llm, agent=AgentType.SELF_ASK_WITH_SEARCH, verbose=True
       )
       self_ask_with_search.run(
           "卡塔尔世界杯的冠军球队是？"
       )
```

```
> Entering new AgentExecutor chain...
Yes.
Follow up: When was the Qatar World Cup held?
Intermediate answer: The FIFA World Cup 2022™ in Qatar was the first edition of the tournament to be host
he most geographically compact since the inaugural installment in 1930. The finals took place between 20 |
22. The FIFA World Cup Qatar 2022™ was the 22nd edition of the tournament.
Follow up: Who won the FIFA World Cup 2022?
Intermediate answer: Argentina national football team
So the final answer is: Argentina national football team

> Finished chain.
```

③ Agent实战

代码实战

谢谢观看