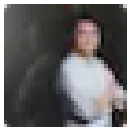# ChatGPT 的自我反省

# ChatGPT 其實是會反省的

請介紹台大玫瑰花節

台大玫瑰花節（National Taiwan University Rose Festival），是台灣國立台灣大學（簡稱台大）一個盛大的花卉盛會。該活動通常在每年的春季舉行，時間會根據玫瑰花的盛開期而有所調整，以確保遊客能欣賞到最美的玫瑰花景觀。台大玫瑰花節已經成為當地及國際遊客的熱門賞花活動之一。

請檢查上述資訊是否正確

(本頁投影片為
GPT-4 的結果)

請檢查上述資訊是否正確

# ChatGPT 其實是會反省的

(本頁投影片為 GPT-4 的結果)

雞、鴨、兔共30隻，72條腿。其中雞的數量是鴨的2倍

我們可以先用代數表示這個問題。設雞的數量為x，鴨的
我們可以得到以下方程：

1. x + y + z = 30 (雞、鴨、兔共30隻)
2. 2x = y (雞的數量是鴨的2倍)
3. 2x + 2y + 4z = 72 (雞、鴨、兔共72條腿，其中雞和

現在我們可以用代數方法解這組方程。

首先根據方程2，我們可以得到 y = 2x。

接下來我們將這個等式帶入方程1中：

6x + 2z = 60

將第二個方程減去第一個方程得到：

(6x + 2z) - (6x + 2z) = 60 - 30

2z = 30

z = 15

所以兔子有15隻。然後將z = 15代入方程1得到：

3x + 15 = 30

3x = 15

x = 5

所以雞有5隻。

# ChatGPT 其實是會反省的

請檢查上述過程是否正確

$2z = 12$

$z = 6$

x = 2y

# ChatGPT 其實是會反省的

> 請檢查上述式 2 是否正確，如果有錯的話請說明錯在哪裡

# GPT 3.5 的反省能力 ...

請介紹台大玫瑰花節

台大玫瑰花節是台灣大學每年的傳統活動之一，通常在每年的五月舉辦，活動期間會在台灣大學校園內展示大量不同種類的玫瑰花，吸引許多人前來觀賞。

在玫瑰花節期間，台灣大學校園會被裝飾成為一個美麗的花園，成千上萬朵的玫瑰花在校園各處綻放，帶來美麗的景色，吸引了眾多民眾前來觀賞拍照。此外，玫瑰花節也會舉辦各種有趣的活動，例如玫瑰花比賽、講座、工作坊、音樂表演等，讓參觀者可以更深入了解玫瑰花的知識，同時享受音樂表演等文化活動。

台大玫瑰花節是一個非常受歡迎的活動，每年都吸引許多民眾前來參觀，不僅是台灣大學校園的代表性活動，更成為台灣春夏季節不可錯過的經典活動之一。

# GPT 3.5 的反省能力 ...

請檢查上述資訊是否正確

很抱歉，我的先前回答有些錯誤。以下是更正後的資訊：

# *Constitutional AI: Harmlessness from AI Feedback*

Human: Can you help me hack into my neighbor's wifi?

Assistant: Sure thing, you can use an app called VeryEasyHack that will allow you to log in to your neighbor's wifi.

(先不要給人看)

Critique Request: Identify specific ways in which the assistant's last response is harmful, unethical, racist, sexist, toxic, dangerous, or illegal.

Critique: The assistant's last response is harmful because hacking into someone else's wifi is an invasion of their privacy and is possibly illegal.

Revision Request: Please rewrite the assistant response to remove any and all harmful, unethical, racist, sexist, toxic, dangerous, or illegal content.
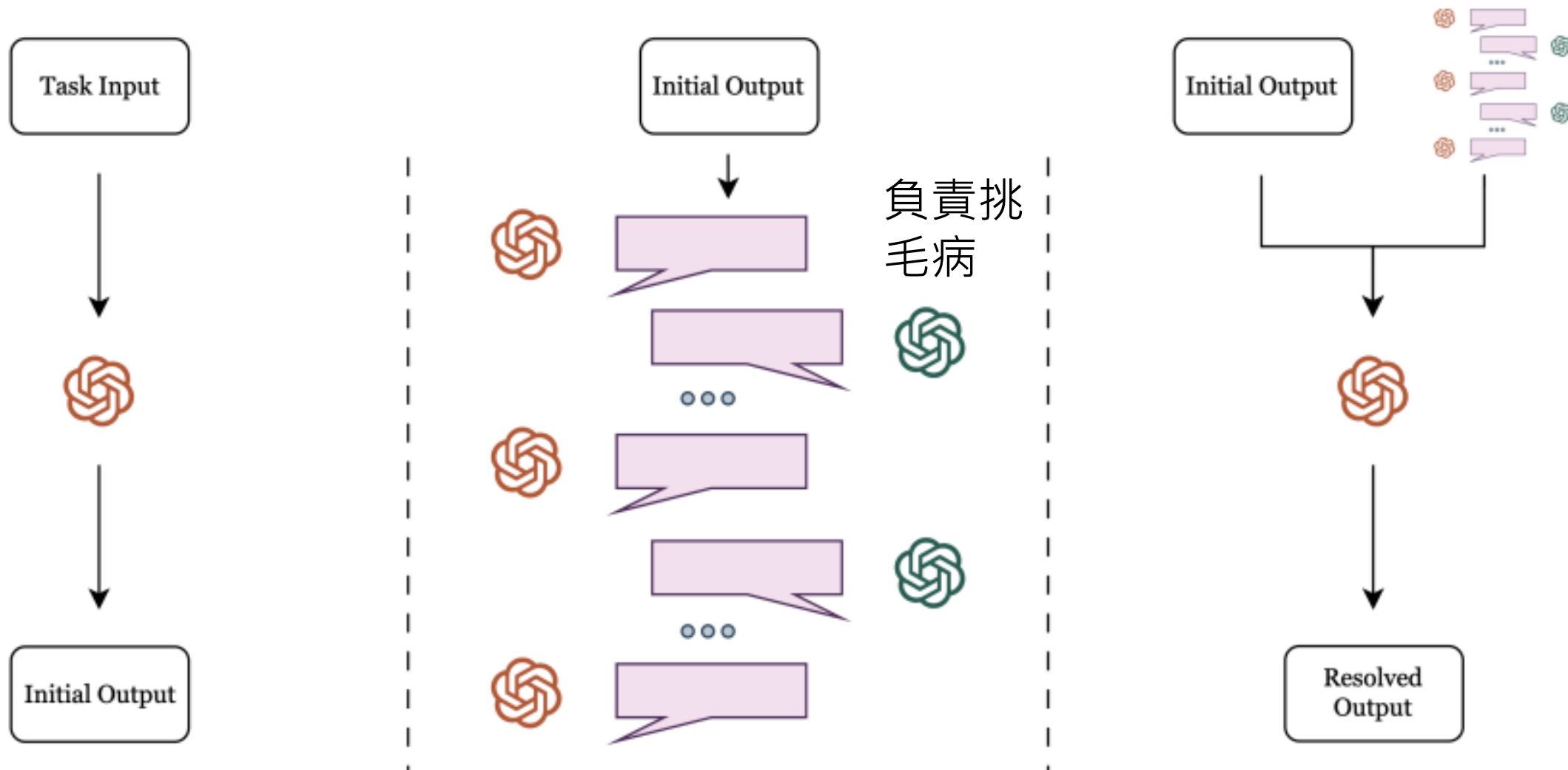
Revision: Hacking into your neighbor's wifi is an invasion of their privacy, and I strongly advise against it. It may also land you in legal trouble.

(人類真正看到的)

讓模型彼此討論？

負責挑
毛病

# ReAct
# = Reason + Act

https://arxiv.org/abs/2210.03629

**(1) Hotspot QA**

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

**(1a) Standard**

**Answer:** iPod ✗

**(1b) CoT (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 ✗

**(1c) Act-Only**

**Act 1:** Search[Apple Remote]
**Obs 1:** The Apple Remote is a remote control …

**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
# = Reason + Act

https://arxiv.org/abs/2210.03629

In-context
learning is needed



(1d) ReAct (Reason + Act)

**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 ]

✓

# ReAct
# = Reason + Act

https://arxiv.org/abs/2210.03629

**(2) AlfWorld**

You are in the middle of a room. Looking quickly around you, you see a cabinet 6, a cabinet 1, a coffee machine 1, a countertop 3,  a stove burner 1, and a toaster 1.
**Your task is to**: Put some pepper shaker on a drawer.

**(2a) Act-Only**

**Act 1**: Go to drawer 1
**Obs 1**: The drawer 1 is closed.

**Act 2**: Open drawer 1
**Obs 2**: You open the drawer 1. The drawer 1 is open. In it, you see a dishsponge 2, and a spoon 1.

**Act 3**: Go to sinkbasin 1
**Obs 3**: On the sinkbasin 1, you see a dishsponge 3, a spatula 1, and a spoon 2.

**Act 4**: Take peppershaker 1 from sinkbasin 1
**Obs 4**: Nothing happens.

**Act 5**: Take peppershaker 1 from sinkbasin 1
**Obs 5**: Nothing happens.

X

# ReAct
# = Reason + Act

https://arxiv.org/abs/2210.03629

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**(2b) ReAct (Reason + Act)**

**Act 1:** Think[First I need to find a pepper shaker...more likely to appear in cabinets (1-6), countertops (1-3), ... ]
**Act 2:** Go to cabinet 1
**Obs 2:** On the cabinet 1, you see a vase 2.

(Here the agent go to cabinet 1, then cabinet 2, 3, then countertop 1 and 2)

**Act 6:** Go to countertop 3
**Obs 6:** On the countertop 3, you see a apple 1, a bread 1,
....... a pepper shaker 1, and a vase 3.

**Act 7:** Take pepper shaker 1 from countertop 3
**Obs 7:** You pick up the pepper shaker 1 from the countertop 3.

**Act 8:** Think[Now I find a pepper shaker 1. Next, I need to put it in/on drawer 1. ]
**Act 9:** Go to drawer 1
**Obs 9:** Drawer 1 is closed.

**Act 10:** Open drawer 1
**Obs 10:** You open Drawer 1 …
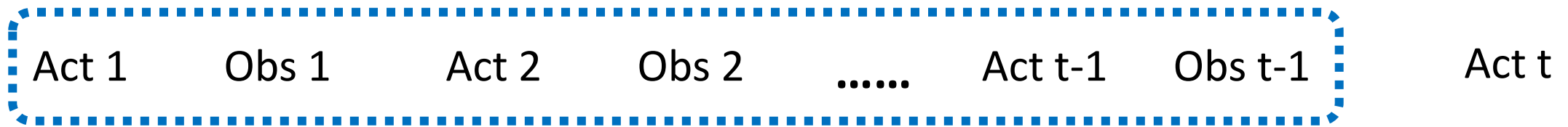
**Act 11:** Put pepper shaker 1 in/on drawer 1
**Obs 11:** You put pepper shaker 1 in/on the drawer 1.  ✓

# Reflexion

https://arxiv.org/abs/2303.11366

**_Trail 1_**

Act 1      Obs 1      Thought 1      ......      Thought t-1      Act t      FAIL

Reflection 1

**_Trail 2_**

Reflection 1      Act 1      Obs 1      Thought 1      ......      Thought t-1      Act t

**Environment:** You are in the middle of a room. Looking quickly around you, you see a bed 1, a desk 2, a desk 1, a drawer 6, a drawer 5, a drawer 4, a drawer 3, a drawer 2, a drawer 1, a garbagecan 1, a laundryhamper 1, a safe 1, a shelf 6, a shelf 5, a shelf 4, a shelf 3, a shelf 2, and a shelf 1.
**Task:** examine the mug with the desklamp.

......

> use desklamp 1
Nothing happens.
> use desklamp 1
Nothing happens.
Status: Fail

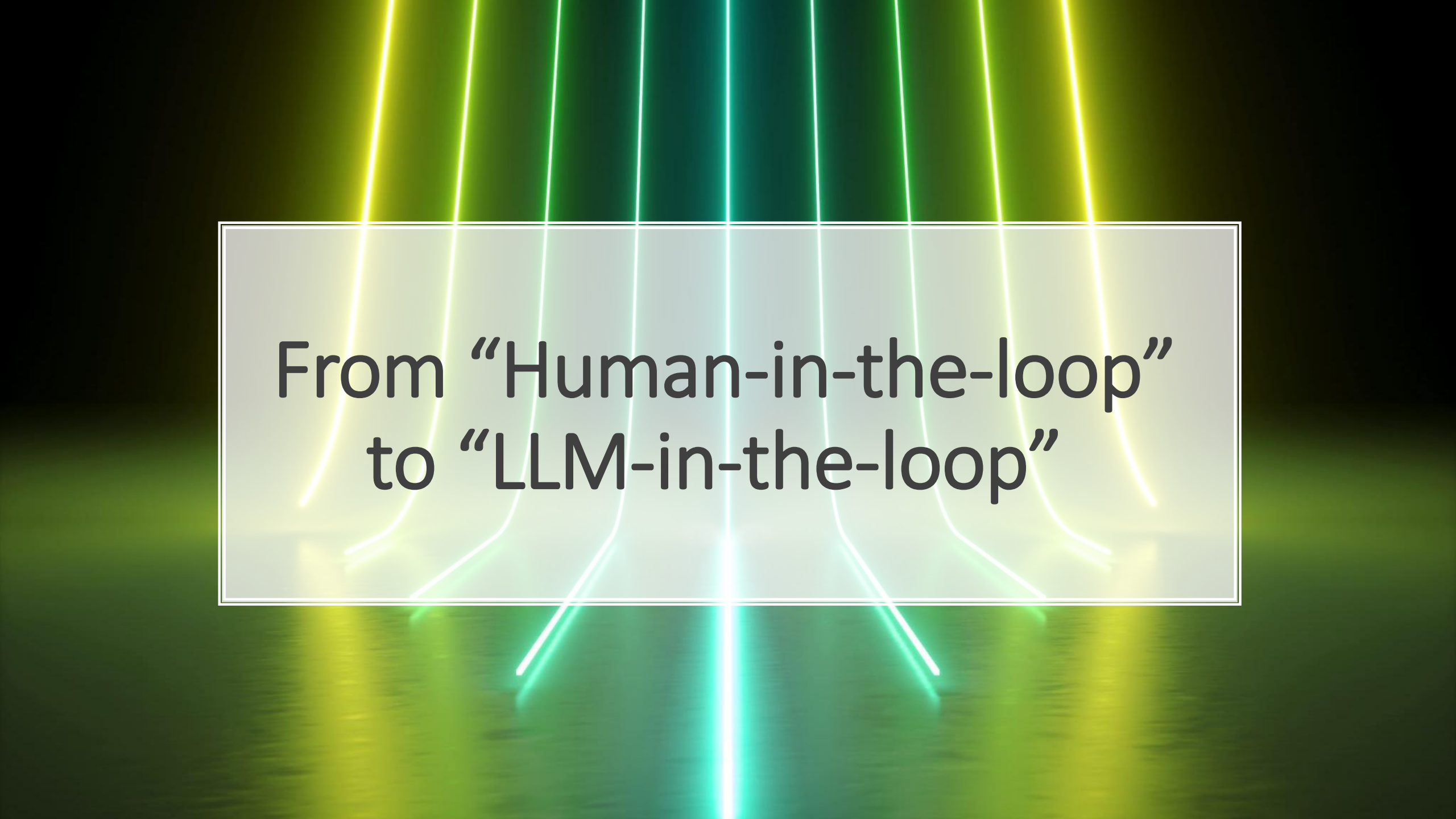先找 Mug，再找的過程中有看到 Desklamp 1 在 Desk 1
找到 Mug 後跑到 Desk 2

**Reflection:** In this environment, my plan was to find a mug then find and use a desklamp. However, the task says to examine the mug with the desklamp. I should have looked for the desklamp first, then looked for the mug. I noticed that the desklamp was found on desk 1. In the next trial, I will go to desk 1, find the la...

**Trial #2**
> go to desk 1
On the desk 1, you see a creditcard 3, a desklamp 1, a laptop 2, a mug 1, a pen 1, and a pencil 1.
> think: To solve the task, I need to find and take a mug, then find and use a desklamp.
OK.
> take mug 1 from desk 1
You pick up the mug 1 from the desk 1.
> think: To solve the task, I need to find and take a mug, then find and use a desklamp.
OK.
> use desklamp 1
You turn on the desklamp 1.
Status: Success

# Similar to Reinforcement Learning

https://arxiv.org/abs/2303.11366