



# 窮人如何低資源 復刻自己的 ChatGPT

# 為什麼有人需要自己的 ChatGPT ？

## Data usage for consumer services FAQ

Commonly asked questions about how we treat user data for OpenAI's non-API consumer services like ChatGPT or DALL-E



Written by Yaniv Markovski. Updated this week

### Does OpenAI train on my content to improve model performance?

For non-API consumer products like ChatGPT and DALL-E, we may use content such as prompts, responses, uploaded images, and generated images to improve our services.

Please refer to this [article](#) to understand how this content may be used to improve model performance and how you can opt-out. You can request to opt out of having your content used to improve our services at any time by filling out this [form](#). This opt out will apply on a going-forward basis only.

<https://help.openai.com/en/articles/7039943-data-usage-for-consumer-services-faq>

# 為什麼有人需要自己的 ChatGPT ？

## 6. Will you use my conversations for training?

- Yes. Your conversations may be reviewed by our AI trainers to improve our systems.

## How can I delete my account?

... it may take up to 4 weeks for your request to be completed.

<https://help.openai.com/en/articles/6378407-how-can-i-delete-my-account>

## 7. Can you delete my data?

- Yes, please follow the [data deletion process](#).

## 8. Can you delete specific prompts?

- No, we are not able to delete specific prompts from your history. Please don't share any sensitive information in your conversations.

<https://help.openai.com/en/articles/6783457-what-is-chatgpt>

# 低資源復刻 ChatGPT

- 需要準備甚麼呢？



You can fine-tune.



Access to ChatGPT

# 低資源復刻 ChatGPT

## 以 ChatGPT 為師

Self-Instruct

<https://arxiv.org/abs/2212.10560>

### Knowledge Distillation

請修改以下文句文法錯誤

"I have a dogs."



"I have a dog."

標準答案

自己的  
Model

.....



# 低資源復刻 ChatGPT

Self-Instruct

<https://arxiv.org/abs/2212.10560>

## 連問題都是老師想的

任務：請修改以下文句文法錯誤  
輸入：“I have a dogs.”  
請想出更多可能的輸入



1. "I are good."
2. "You am bad."
3. "I have a apples."
- .....

## 連任務都要老師想

任務1：修改以下文句文法錯誤  
任務2：潤飾以下文句  
請想出更多任務

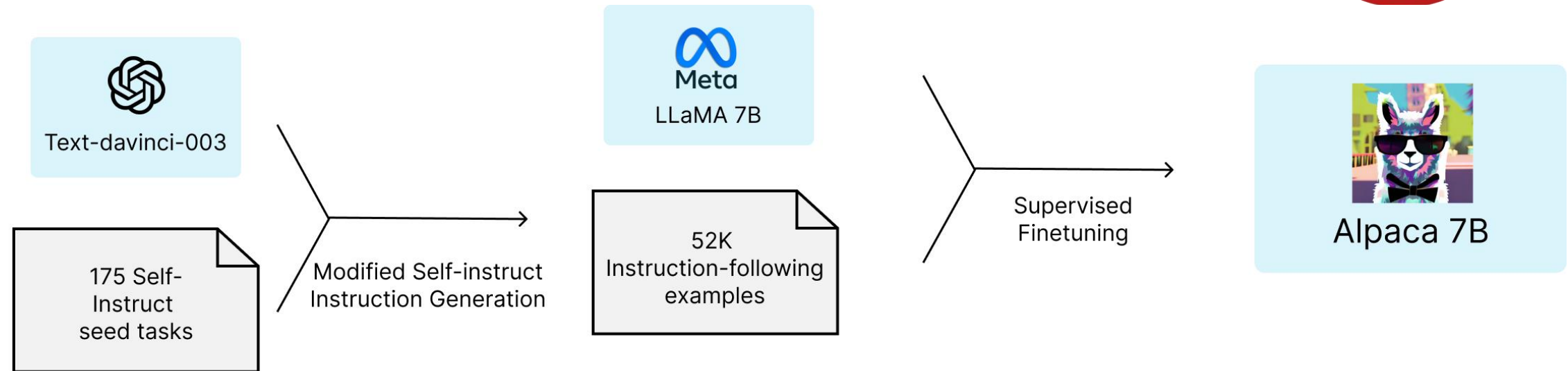


任務3：擴寫以下文句  
任務4：修改以下文句  
.....

# 低資源復刻 ChatGPT

[https://github.com/tatsu-lab/stanford\\_alpaca](https://github.com/tatsu-lab/stanford_alpaca)

## Stanford Alpaca



### Example seed task

*Instruction: Brainstorm a list of possible New Year's resolutions.*

*Output:*

- Lose weight
- Exercise more
- Eat healthier

### Example Generated task

*Instruction: Brainstorm creative ideas for designing a conference room.*

*Output:*

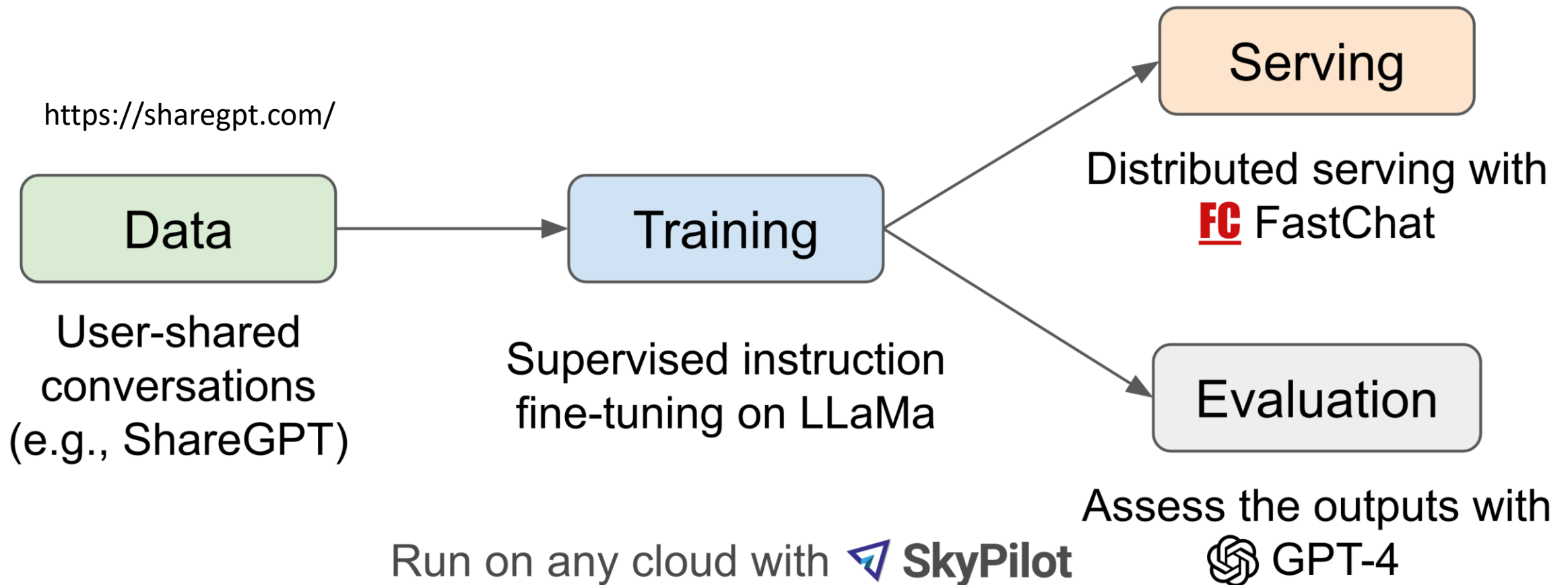
*... incorporating flexible components, such as moveable walls and furniture ...*

# 低資源復刻 ChatGPT

<https://github.com/lm-sys/FastChat>



Vicuna





# GPT-4 Evaluation

*According to a fun and non-scientific evaluation with GPT-4. Further rigorous evaluation is needed.*

**Question:** Can you help me write a formal email to a potential business partner proposing a joint venture?

**Assistant #1**


Alpaca-13b

Yes, I can help you write a formal email to a potential business partner proposing a joint venture. Here's a template that you can use:

Subject Line: Proposing a Joint Venture

Dear [Name],

I am writing to propose a joint venture between our two companies. I be [Show more](#) combining our resources, we can create a powerful

 **Assistant #2 (Vicuna-13b, our model)**

Certainly, here's an example of a formal email proposing a joint venture:

Subject: Proposal for Joint Venture

Dear [Name of Partner],

I hope this email finds you well. I am writing to propose a joint venture be [Show more](#) ipanies, [Your Company Name] and [Partner

**GPT-4 Evaluation (Score: Alpaca-13b 9/10, Vicuna-13b 10/10)**

Both **Assistant 1** and **Assistant 2** provided helpful, relevant, and accurate responses to the user's request for a formal email proposing a joint venture. **Assistant 1** provided a concise and clear template that can be easily adapted by the user. **Assistant 2**, on the other hand, provided a more detailed and comprehensive email, including specific information about the proposed joint venture, such as the creation of a new company and the sharing of profits and losses. This level of detail may be more useful for the user, as it provides a more complete picture of the proposed partnership. Therefore, **Assistant 1** receives a 9 and **Assistant 2** receives a 10.

| Model Name          | LLaMA                                  | Alpaca   | Vicuna                                  | Bard/ChatGPT |
|---------------------|--|--|---|--------------|
| Dataset             | Publicly available datasets (1T token) | Self-instruct from davinci-003 API (52K samples) | User-shared conversations (70K samples) | N/A          |
| Training code       | N/A                                    | Available  | Available                               | N/A          |
| Evaluation metrics  | Academic benchmark                     | Author evaluation                                | GPT-4 assessment                        | Mixed        |
| Training cost (7B)  | 82K GPU-hours                          | \$500 (data) + \$100 (training)                  | \$140 (training)                        | N/A          |
| Training cost (13B) | 135K GPU-hours                         | N/A  | \$300 (training)                        | N/A          |



3 hours on  
8 80GB A100s

<https://vicuna.lmsys.org/>

# Dolly 2.0

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[https://docs.google.com/forms/d/e/1FAIpQLSfqNECQnMkycAp2jP4Z9TFX0cGR4uf7b\\_fBxjY\\_OjhJILKGA/viewform](https://docs.google.com/forms/d/e/1FAIpQLSfqNECQnMkycAp2jP4Z9TFX0cGR4uf7b_fBxjY_OjhJILKGA/viewform)

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# Dolly 2.0

|                           | GPT-2 | GPT-3   | GPT-Neo | OPT  | T5  | BLOOM | Pythia (ours) |
|---------------------------|-------|---------|---------|------|-----|-------|---------------|
| Public Models             | ●     | ◐       | ●       | ●    | ●   | ●     | ●             |
| Public Data               |       |         | ●       |      | ●   | ◐     | ●             |
| Known Training Order      |       |         | ●       |      |     | ◐     | ●             |
| Consistent Training Order |       |         |         | ●    |     | ◐     | ●             |
| Number of Checkpoints     | 1     | 1       | 30      | 2    | 1   | 8     | 154           |
| Smallest Model            | 124M  | Ada     | 125M    | 125M | 60M | 560M  | 19M           |
| Largest Model             | 1.5B  | DaVinci | 20B     | 175B | 11B | 176B  | 12B           |
| Number of Models          | 4     | 4       | 6       | 9    | 5   | 5     | 8             |

<https://arxiv.org/abs/2304.01373>

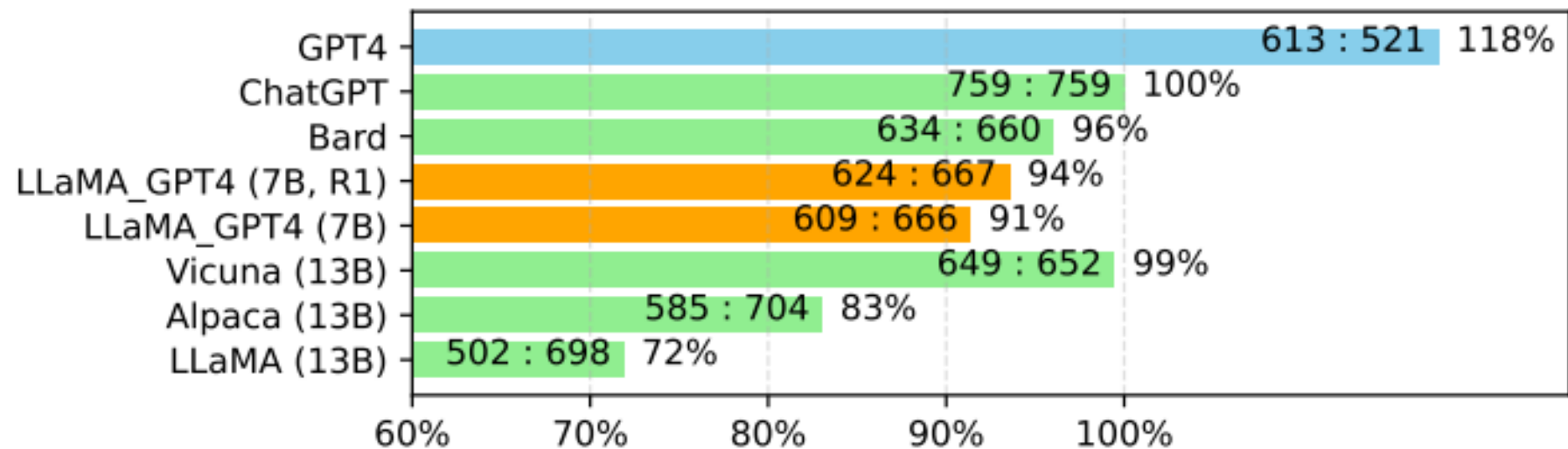
**databricks-dolly-15k** was authored by more than 5,000 Databricks employees during March and April of 2023.

<https://www.databricks.com/blog/2023/04/12/dolly-first-open-commercially-viable-instruction-tuned-llm>

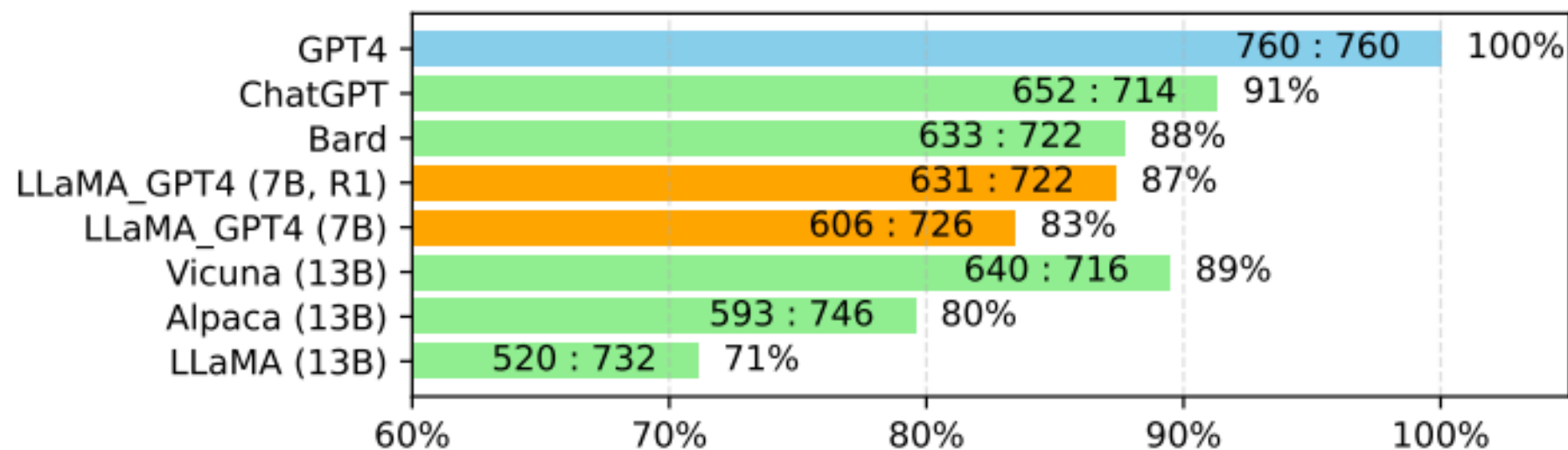
| Model                         | Backbone | #Params  | Open-source model | Open-source data | Claimed language | Post-training (instruction) | Post-training (conversation) | Released |
|-------------------------------|----------|----------|-------------------|------------------|------------------|-----------------------------|------------------------------|----------|
| ChatGPT                       | -        | -        | ✗                 | ✗                | multi            |                             |                              | 11/30    |
| Wenxin                        | -        | -        | ✗                 | ✗                | zh               |                             |                              | 03/16    |
| ChatGLM                       | GLM      | 6B       | ✓                 | ✗                | en, zh           |                             |                              | 03/16    |
| Alpaca                        | LLaMA    | 7B       | ✓                 | ✓                | en               | 52K, en                     | ✗                            | 03/13    |
| Dolly                         | GPT-J    | 6B       | ✓                 | ✓                | en               | 52K, en                     | ✗                            | 03/24    |
| BELLE                         | BLOOMZ   | 7B       | ✓                 | ✓                | zh               | 1.5M, zh                    | ✗                            | 03/26    |
| Guanaco                       | LLaMA    | 7B       | ✓                 | ✓                | en, zh, ja, de   | 534K, multi                 | ✗                            | 03/26    |
| Chinese-LLaMA-Alpaca          | LLaMA    | 7/13B    | ✓                 | ✓                | en, zh           | 2M/3M, en/zh                | ✗                            | 03/28    |
| LuoTuo                        | LLaMA    | 7B       | ✓                 | ✓                | zh               | 52K, zh                     | ✗                            | 03/31    |
| Vicuna                        | LLaMA    | 7/13B    | ✓                 | ✓                | en               | ✗                           | 70K, multi                   | 03/13    |
| Koala                         | LLaMA    | 13B      | ✓                 | ✓                | en               | 355K, en                    | 117K, en                     | 04/03    |
| BAIZE                         | LLaMA    | 7/13/30B | ✓                 | ✓                | en               | 52K, en                     | 111.5K, en                   | 04/04    |
| Phoenix (Ours)                | BLOOMZ   | 7B       | ✓                 | ✓                | multi            | 40+                         | 40+                          | 04/08    |
| Latin Phoenix: Chimera (Ours) | LLaMA    | 7/13B    | ✓                 | ✓                | multi (Latin)    | Latin                       | Latin                        | 04/08    |

<https://github.com/FreedomIntelligence/LLMZoo>





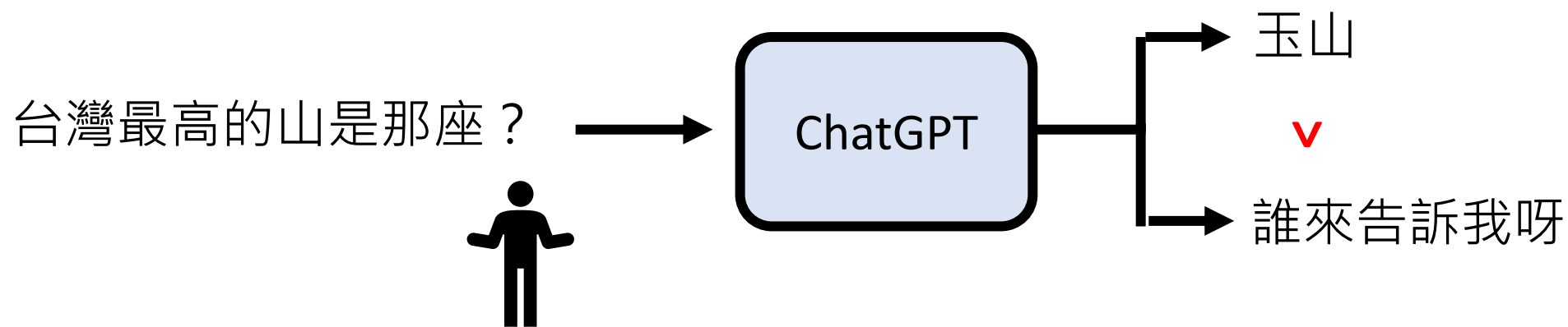
(c) All chatbots against ChatGPT



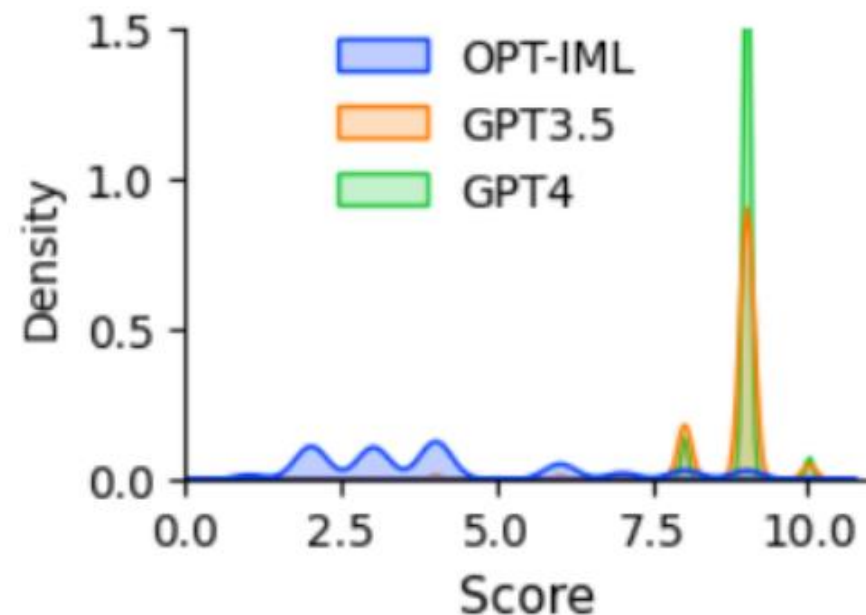
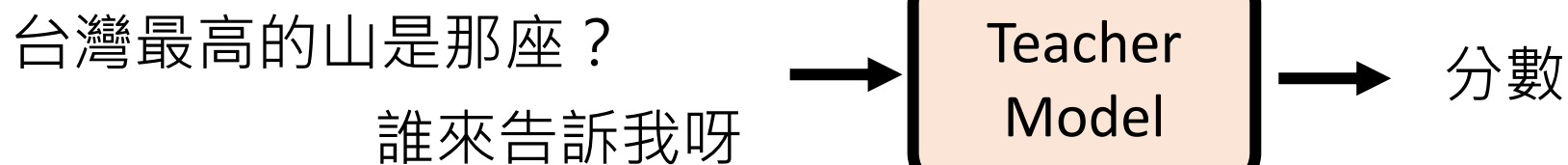
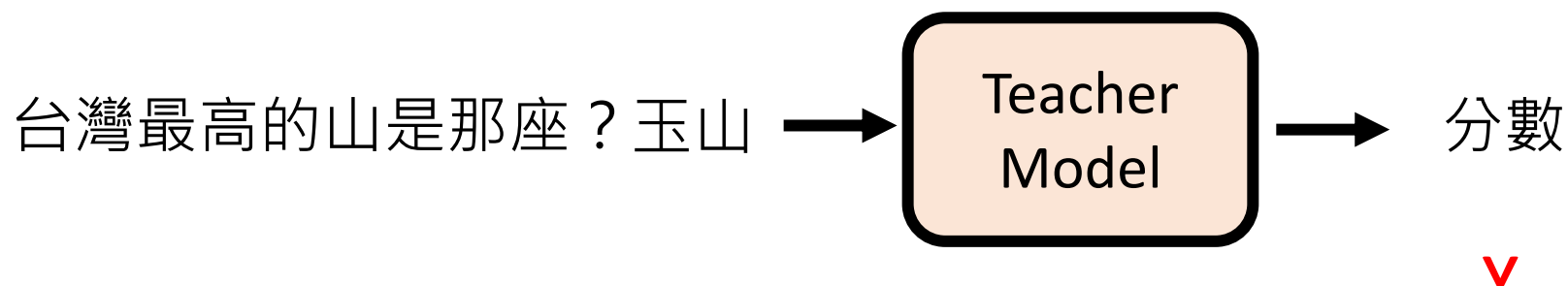
(d) All chatbots against GPT-4

<https://arxiv.org/abs/2304.03277>

# No Reinforcement Learning?



GPT-4



# Large Language Model can Self-improve

## Self-consistency

**Q:** If there are 3 cars in the parking lot and 2 more cars arrive, how many cars are in the parking lot?

**A:** There are 3 cars in the parking lot already. 2 more arrive. Now there are  $3 + 2 = 5$  cars. The answer is 5.

...

**Q:** Janet's ducks lay 16 eggs per day. She eats three for breakfast every morning and bakes muffins for her friends every day with four. She sells the remainder for \$2 per egg. How much does she make every day?

**A:**

Language model

Sample a diverse set of reasoning paths

She has  $16 - 3 - 4 = 9$  eggs left. So she makes  $\$2 * 9 = \$18$  per day.

The answer is \$18.

This means she she sells the remainder for  $\$2 * (16 - 4 - 3) = \$26$  per day.

The answer is \$26.

She eats 3 for breakfast, so she has  $16 - 3 = 13$  left. Then she bakes muffins, so she has  $13 - 4 = 9$  eggs left. So she has  $9 \text{ eggs} * \$2 = \$18$ .

The answer is \$18.

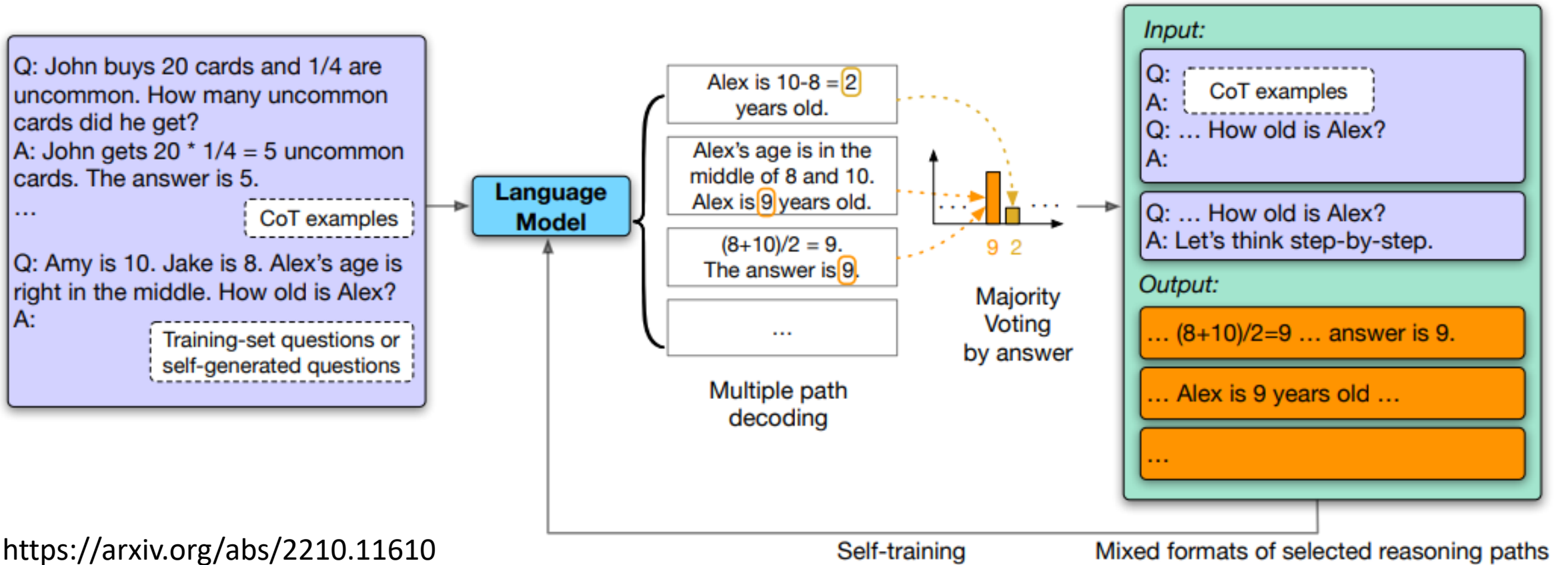
Marginalize out reasoning paths to aggregate final answers

The answer is \$18.

Ref: <https://arxiv.org/abs/2203.11171>

56.5% → 74.4% on GSM8K test set

# Large Language Model can Self-improve



<https://arxiv.org/abs/2210.11610>

56.5%  $\rightarrow$  74.4%  $\rightarrow$  82.1% on GSM8K test set  
17 / 18





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