



GPT-4

고급 추론 능력의 향상

Advanced Reasoning



GPT-4 surpasses ChatGPT in its advanced reasoning capabilities.

ChatGPT

Input

Andrew is free from 11 am to 3 pm, Joanne is free from noon to 2 pm and then 3:30 pm to 5 pm. Hannah is available at noon for half an hour, and then 4 pm to 6 pm. What are some options for start times for a 30 minute meeting for Andrew, Hannah, and Joanne?

Output

Here is a list of their availability:

- Andrew: 11 am to 3 pm
- Joanne: noon to 2 pm, and 3:30 pm to 5 pm
- Hannah: noon to 12:30 pm, and 4 pm to 6 pm

Based on their availability, there is a 30-minute window where all three of them are available, which is from 4 pm to 4:30 pm. So, the meeting can be scheduled at 4 pm.

GPT-4

Input

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Output

Andrew: 11 am - 3 pm

Joanne: 12 pm - 2 pm, 3:30 pm - 5 pm

Hannah: 12 pm - 12:30 pm, 4 pm - 6 pm

Common availability for a 30-minute meeting: 12 pm - 12:30 pm

↳ 오답(False)



창의성 향상

Creativity

Input

Explain the plot of Cinderella in a sentence where each word has to begin with the next letter in the alphabet from A to Z, without repeating any letters.

Output

A beautiful Cinderella, dwelling eagerly, finally gains happiness; inspiring jealous kin, love magically nurtures opulent prince; quietly rescues, slipper triumphs, uniting very wondrously, xenial youth zealously.

창의성 향상

Creativity



P

이순신 장군의 명량해전을 ㄱ에서 ㅎ까지 사용해서 요약해봐.



이순신 장군의 명량해전은 조선의 무서운 해상 전략가이자 영웅인 이순신 장군의 가장 유명한 해전입니다. 1597년 10월 26일, 임진왜란 중에 벌어진 이 전투에서 이순신 장군은 13척의 거북선으로 일본 해군 133척을 상대하였습니다. 이순신 장군은 절대 단기간에 전쟁을 포기하지 않았으며, 전략적으로 소수의 조선 함대로 일본 해군을 격파하였습니다.



ㄱ: 거북선과 함께 고요한 바다 위를 질주하며,
ㄴ: 남해에서의 전투를 시작하였습니다.
ㄷ: 뛰어난 지휘력으로 아군을 이끌었으며,
ㄹ: 레이더처럼 적의 위치를 파악하여 전략을 세웠습니다.
ㅁ: 명량해전의 승리로 조선의 영토를 지켰으며,
ㅂ: 발휘된 위력으로 적을 격퇴시켰습니다.
ㅅ: 승리의 기쁨을 함께 나누었으며,
ㅇ: 영웅 이순신의 전설을 이어갔습니다.
ㅈ: 전쟁에서 이길 수 있는 힘을 발휘하였으며,
ㅊ: 찬란한 역사를 조선과 함께 써 내려갔습니다.
ㅋ: 큰 전략을 펼쳐 적의 함대를 무찌르고,
ㅌ: 탈환된 영토로 가족들과 함께 축하의 순간을 맞이했습니다.
ㅍ: 패배의 쓴맛을 일본에게 선사하였으며,
ㅎ: 희망의 빛으로 조선의 미래를 밝게 비추었습니다.

2023년 4월 23일 (GPT 4)

창의성 향상

Creativity

P

대한민국의 출산문제를 해결할 수 있는 방법을 ㄱ에서 ㅎ까지 사용해서 제시해봐



대한민국의 출산문제를 해결하기 위해 다양한 방법을 제시합니다. 이러한 제안들은 정부와 사회 전반의 지원이 필요합니다.



ㄱ: 교육비 지원을 통해 부담을 줄여줍니다.

ㄴ: 낳고 키우기 쉬운 사회 구조를 만듭니다.

ㄷ: 돌봄 서비스를 확대하여 부모들의 부담을 줄입니다.

ㄹ: 라이프 워크 밸런스를 개선하여 가족 생활과 직장 생활을 균형 있게 가져갈 수 있도록 지원합니다.

ㅁ: 맞춤형 출산 및 육아 지원 프로그램을 제공합니다.

ㅂ: 보육시설 및 유치원을 확충하고 질을 높여 줍니다.

ㅅ: 세제 혜택을 확대하여 부모들에게 경제적 도움을 줍니다.

ㅇ: 연령별, 소득별 지원 프로그램을 도입합니다.

ㅈ: 주거 문제를 해결하여 젊은 부부들의 안정적인 가정 생활을 지원합니다.

ㅊ: 창업 및 일자리 창출을 촉진하여 경제적 기반이 마련되도록 합니다.

ㅋ: 쾌적한 환경 조성을 통해 출산 의욕을 높입니다.

ㅌ: 탄력 근무제 도입으로 직장인들의 육아 참여를 독려합니다.

ㅍ: 퇴근 시간을 조정하여 가족과의 시간을 확보할 수 있도록 합니다.

ㅎ: 협력적인 사회 분위기를 조성하여 출산과 육아에 대한 인식 개선을 이룹니다.

Token (NLP)

- 단일 단위를 나타내는 문자 시퀀스
- (컴퓨터가) 이해할 수 있는 텍스트의 기본 단위
- Text → Word로 분할

Token (NLP)

- 그런데 한국어는 “^{접사}교착어” 그녀, 그녀가, 그녀를, 그녀의
- 한국어는 의미를 가지는 최소 단위인 **형태소**로 Tokenizing
- 안녕하세요

['안녕', '하', '세', '요']

대용량 텍스트 처리 능력

최대 토큰수 4천 개 -> 3만 2천개

Creativity Visual input Longer context

GPT-4 is capable of handling over 25,000 words of text, allowing for use cases like long form content creation, extended conversations, and document search and analysis.

Input

[Text from: <https://en.wikipedia.org/wiki/Rihanna>]

Describe her Super Bowl performance and what made it special.

Output

Rihanna's Super Bowl LVII halftime show performance was special for a number of reasons. For one, it marked her first live performance in over five years, and it was her first time headlining the Super Bowl halftime show. Additionally, she made history by becoming the first person to perform at the Super Bowl while pregnant. The show itself was critically acclaimed, with many praising her high-energy performance and impressive vocals. It also garnered a massive viewership, becoming the second most-watched halftime show in history.

64,000 단어 또는 50 Page

대용량 텍스트 처리 능력

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기억력도 64,000개 단어까지 대화 내용을 기억

각종 테스트에서의 능력 향상



GPT-4 outperforms ChatGPT by scoring in higher approximate percentiles among test-takers.

Uniform Bar Exam

10th

ChatGPT

90th

GPT-4

Biology Olympiad

31st

ChatGPT

99th

GPT-4 (with vision)

미 법무사 표준화 시험

비교 대상 중
90%보다 뛰어남
(90 백분위수)

고등학생의 생물학
지식을 시험하는
국제대회

GPT4 is Safer and More Factual

82% ↓

40% ↑

더 안전하고 더 사실에 근접한 답변

We spent 6 months making GPT-4 safer and more aligned. GPT-4 is 82% less likely to respond to requests for disallowed content and 40% more likely to produce factual responses than GPT-3.5 on our internal evaluations.

Visual Input (이미지 인식)

Creativity Visual input Longer context

GPT-4 can accept images as inputs and generate captions, classifications, and analyses.

영상 인식, 이해 및 처리 가능

차트 이미지 해석해서 답 구함

GPT-4 visual input example, Chart Reasoning

User: What is the sum of average daily meat consumption for Georgia and Western Asia? Provide a step-by-step reasoning before providing your answer.

GPT-4:

To find the sum of average daily meat consumption for Georgia and Western Asia, we will follow these steps:

1. Identify the average daily meat consumption for Georgia.
2. Identify the average daily meat consumption for Western Asia.
3. Add the values from steps 1 and 2.

Step 1: From the provided chart, we see that the average daily meat consumption for Georgia is 79.84 grams per person per day.

Step 2: From the chart, we see that the average daily meat consumption for Western Asia is 69.62 grams per person per day.

Step 3: Add the values from steps 1 and 2.

$79.84 \text{ g (Georgia)} + 69.62 \text{ g (Western Asia)} = 149.46 \text{ g}$

So, the sum of average daily meat consumption for Georgia and Western Asia is 149.46 grams per person per day.

Table 14. Example prompt demonstrating GPT-4's visual input capability. The prompt consists of a question which requires reading information from a chart and performing computation.

GPT-4 visual input example, École Polytechnique Exam Question

User: Answer question 1.1.a. Think step-by-step.

1. Étudier la loi de Fourier de conduction dans un isolant.

On considère une barre homogène de longueur L , d'abaissement et de section constante S , et de conductivité thermique λ . La température $T(x)$ est supposée varier linéairement le long de la barre. On note T_0 la température à l'extrémité gauche et T_L la température à l'extrémité droite. On suppose que la barre est soumise à un régime stationnaire.

GPT-4:

To answer question 1.1.a, we need to express the temperature $T(x)$ in every point of the conductive bar, which is characterized by the abscissa x . We are given that $T(0) = T_0$ and $T(L) = T_L$.

For a stationary regime, the heat equation for the one-dimensional heat conduction in the bar is:

$$\frac{d^2 T}{dx^2} = 0$$

Integrating once, we get:

$$\frac{dT}{dx} = C_1$$

Integrating a second time:

$$T(x) = C_1 x + C_2$$

To determine the constants C_1 and C_2 , we use the boundary conditions: $T(0) = T_0$, which gives $C_2 = T_0$; $T(L) = T_L$, which gives $C_1 = (T_L - T_0)/L$.

Finally, the expression for $T(x)$ is:

$$T(x) = (T_L - T_0) \frac{x}{L} + T_0$$

This represents a linear temperature profile along the conductive bar, with a slope of $(T_L - T_0)/L$.

Table 15. Example prompt demonstrating GPT-4's visual input capability. The prompt consists of a question which requires understanding a physics problem with a diagram written in French and solving it using chain-of-thought reasoning.

물리학 문제를 이미지를 읽어서 풀

Input

What can I make with these ingredients?



Output

There are many options for what you can make with these ingredients! Some possibilities include:

- Pancakes or waffles
- Crepes
- French toast
- Omelette or frittata
- Quiche
- Custard or pudding
- Cake or cupcakes
- Muffins or bread- Cookies or biscuits

These are just a few examples, but the possibilities are endless!

P

can GPT-4 accept images as inputs?

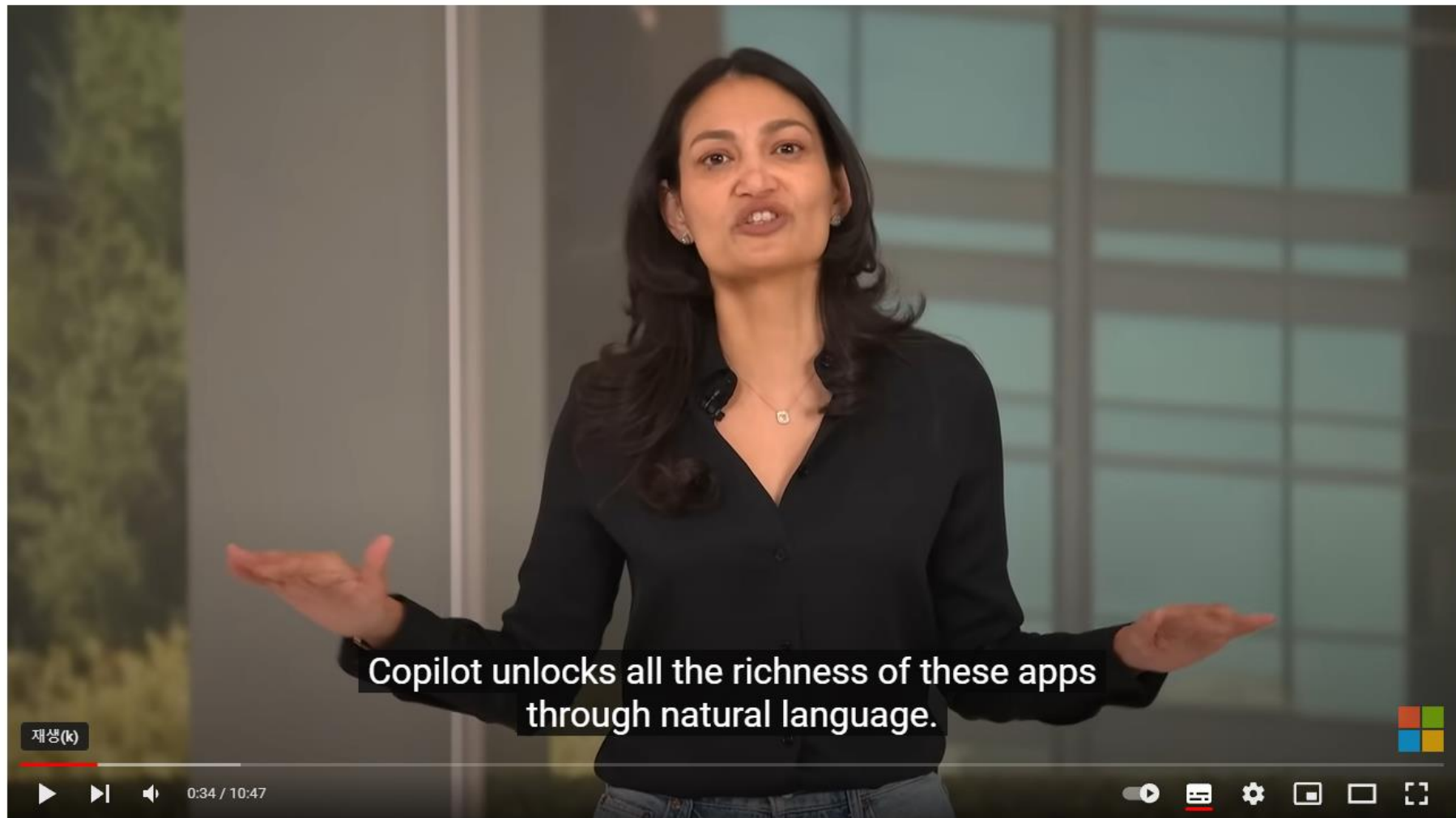


No, GPT-4 cannot accept images as inputs directly because it is a text-based AI model



designed to process and generate text. It is not designed to analyze or interpret images. If you want to work with images, you would need a different type of AI model that is specifically designed for image recognition and processing, such as convolutional neural networks (CNNs) or vision transformers (ViTs).

To combine the capabilities of text-based AI like GPT-4 with image-based AI, you can use a multimodal AI model. One example is OpenAI's CLIP (Contrastive Language-Image Pretraining), which has been trained on both text and images, allowing it to perform tasks that involve both modalities. With a multimodal model, you can work with images and text simultaneously, but GPT-4 on its own cannot directly accept images as inputs.



한달전 발표한 MS 365 Copilot – GPT 4 기반 사무 보조용 AI의 끝판왕!