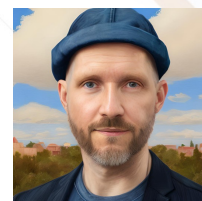


MI-től félünk valójában?

az AI és a munkánk, titkaink, értékeink jövője

Human (AK) as „reimagined by Gen-2 /Runway



Keleti Arthur



Informatikai Biztonság Napja (20 év)



Önkéntes Kibervédelmi Összefogás (13 év)

ARTHUR KELETI



Kibertitok Jövőkutató (9 év)
Könyvszerző (8 év)
(The Imperfect Secret)



Film Producer (4)



Telekom csoport és elődjei (25 év)

Kiberbiztonság (28 év)

AI <-> Biztonság (9 év)

1

value chAIned



2




Video: Gen-2 | Lyrics: GPT4 | Music: SunoAI V3 | Video editing: CapCut | Gen by: Arthur Keleti.

3

Model	Training end	Chip type	TFLOP/s (max)	Chip count	Wall clock time (days)	Total time (hours)	Total time (years)	Cost (\$US)	MLLU ▼
GPT-3	Apr/2020	V100	130	10,000	15 days	3,552,000	405 years	\$9M	43.9
Llama 1	Jan/2023	A100	312	2,048	21 days	1,032,192	118 years	\$4M	63.4
Llama 2	Jun/2023	A100	312	2,048	35 days	1,720,320	196 years	\$7M	68.0
GPT-4	Aug/2022	A100	312	25,000	95 days	57,000,000	6,507 years	\$224M	86.4
Gemini	Nov/2023	TPUv4	275	57,000	100 days	136,800,000	15,616 years	\$440M	90.0
GPT-5	Apr/2024	H100	989	50,000	120 days	144,000,000	16,438 years	\$612M	
Llama 3	Apr/2024	H100	989						
Olympus	Aug/2024	H100	989						
Gemini 2	Nov/2024	TPUv5	393						

Chip type	Pricing date	\$ per chip-hour	Source	1M hours
V100	2020	\$0.66	https://web.arc	\$660,000
V100	2020	\$2.48	https://www.toi	\$2,480,000
A100	2023	\$3.93	https://gpus.llr	\$3,930,000
H100	2023	\$4.25	https://web.arc	\$4,250,000
TPUv4	2023	\$3.22	https://web.arc	\$3,220,000
TPUv5e	2024	\$1.20	https://web.arc	\$1,200,000
TPUv5p	2024	\$4.20	https://web.arc	\$4,200,000

This sheet is owned and maintained by Dr Alan D. Thompson



4

Model	Lab	Playground	Parameters (B)	Tokens trained (B)	Ratio Tokens/Params	ALScore (Chinchilla scaling@20)	ALScore ¹ Sqr Root of	Training dataset	Announced	Public?	Paper / Notes Repo
Luminous	Aleph Alpha	AA playground	200						Nov/2021	●	https://www.devsfromaleutherai.com/
Chinchilla	DeepMind		70	1400	20:1	1.0	📈📈📈		Mar/2022	●	https://arxiv.org/abs/2203.15556 First to double tokens per size increase
GPT-NeoX-20B	EleutherAI	TS, Goose	20				📈📈📈		Feb/2022	●	https://arxiv.org/abs/2203.15556 Latest model to Feb/2022
ERNIE 3.0 Titan	Baidu		260				📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556
XGLM	Meta AI		7.5				📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556 Multilingual: 30 languages, 16 families.
Fairseq	Meta AI	TS, Goose	13 & 1100				📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556
Gopher	DeepMind		280	300	2:1	1.0	📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556 Dataset: https://lilearnai.com/whats-in-my-ai/
GLaM	Google		1200				📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556
Anthropic-LM 52B	Anthropic		52	400	8:1	0.5	📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556 Internal research only
RETRO	DeepMind		7.5				📈📈📈		Dec/2021	●	https://arxiv.org/abs/2203.15556 With retrieval
BERT-480	Google		480				📈📈📈		Nov/2021	●	https://arxiv.org/abs/2203.15556 Submission to benchmarks. Original dataset was BookCorpus + Wikipedia: https://arxiv.org/abs/2203.15556
BERT-200	Google		200				📈📈📈		Nov/2021	●	https://arxiv.org/abs/2203.15556 Submission to benchmarks. Original dataset was BookCorpus + Wikipedia: https://arxiv.org/abs/2203.15556
Cedille FR-Boris	Coteries	Cedille, TS	6				📈📈📈		Nov/2021	●	https://arxiv.org/abs/2203.15556 French only. GPT-1.
MT-NLG	Microsoft/NVIDIA		530	270	1:1	1.3	📈📈📈		Oct/2021	●	https://arxiv.org/abs/2203.15556
FLAN	Google		137				📈📈📈		Sep/2021	●	https://arxiv.org/abs/2203.15556 Fine-tuned LaMDA
xiarge	Cohere	Cohere	52.4				📈📈📈		Sep/2021	●	https://arxiv.org/abs/2203.15556 Stealth 'ebooks and webpages'. 52B: https://crfm.stanford.edu/helm/v1.0/?models=1
PIATO-XL	Baidu	Baidu	11				📈📈📈		Sep/2021	●	https://arxiv.org/abs/2203.15556 Chatbot. Reddit comments + CN social
Macaw	Allen AI	<i>Allen (static demo only)</i>	11				📈📈📈		Sep/2021	●	https://arxiv.org/abs/2203.15556 Chatbot
CodeT5	Salesforce		0.7				📈📈📈		Mar/2022	●	https://arxiv.org/abs/2203.15556 Code. Large introduced in https://arxiv.org/pdf/2207.01780.pdf
CodeX	OpenAI	Playground	12				📈📈📈		Aug/2021	●	https://arxiv.org/abs/2203.15556 Code
Jurassic-1	Ai21	Studio	178	300	2:1	0.8	📈📈📈		Aug/2021	●	https://arxiv.org/abs/2203.15556 Emulated GPT-3 dataset
BlenderBot 2.0	Meta AI		9.4				📈📈📈		Jul/2021	●	https://arxiv.org/abs/2203.15556 Chatbot
GPT-J	EleutherAI	TS, Goose	6	402	67:1	0.2	📈📈📈		Jun/2021	●	https://arxiv.org/abs/2203.15556 Popular
LaMDA	Google	YouTube (video only)	137				📈📈📈		Jun/2021	●	https://arxiv.org/abs/2203.15556 Chatbot
ruGPT-3	Huawei/Sberbank	Sber Cloud	1.3				📈📈📈		Feb/2021	●	https://arxiv.org/abs/2203.15556 Russian GPT-3 with input from Huawei
Switch	Google		1600	576	1:1	3.2	📈📈📈		Jan/2021	●	https://arxiv.org/abs/2203.15556 MoE
GPT-3	OpenAI	Sunset/deprecated - (175	300	2:1	0.8	📈📈📈		May/2020	●	https://arxiv.org/abs/2203.15556 No RLHF (base only). Popular: 3.1M wpm. Dataset: https://lilearnai.com/whats-in-my-ai/
Megatron-11B	Meta AI	InferKit	11	2200	200:1	0.5	📈📈📈		Apr/2020	●	https://arxiv.org/abs/2203.15556 My favourite model until GPT-3 and GPT-4 came along: https://github.com/facebookresearch
Meena	Google		2.6	10000	3,847:1	0.5	📈📈📈		Jan/2020	●	https://arxiv.org/abs/2203.15556 Dialogue model. Trained 61B tokens for 164x epochs to 10T tokens!
TS	Google		11	34	4:1	0.1	📈📈📈		Oct/2019	●	https://arxiv.org/abs/2203.15556 C4 + NLP language problems
RoBERTa	Meta AI	Hugging Face	0.355	2200	6,198:1	0.1	📈📈📈		Jul/2019	●	https://arxiv.org/abs/2203.15556 calcs: "In total, this batch size and number of steps corresponds to pre-training on 235"
GPT-2	OpenAI	Hugging Face	1.5	10	7:1	0.0	📈📈📈		Feb/2019	●	https://arxiv.org/abs/2203.15556 Reddit outbound only
BERT	Google	Hugging Face	0.3	137	457:1	0.0	📈📈📈		Oct/2018	●	https://arxiv.org/abs/2203.15556
GPT-1	OpenAI	Hugging Face	0.117	1.3	12:1	0.0	📈📈📈		Jun/2018	●	https://arxiv.org/abs/2203.15556 Books only
ULMFiT	Fast.ai		0.1	0.1	1:1	0.0	📈📈📈		Jan/2018	●	https://arxiv.org/abs/2203.15556 Aussie Prof Jeremy Howard



5


GENIUS VS AI (FEB/2024)

	Average human	Terence Tao	William James Sidis	GPT-4	Gemini 1.0 and 1.5
IQ percentile	50 th	>99.9 th	>99.9 th	>99.9 th	>99.9 th
Languages	2	2	25+	90+	200+
Books read	700	700+	700+	4,000,000+	10,000,000+
Working memory	7 words	9+ words	9+ words	128,000 words	7,000,000 words
Long-term memory	74TB	74TB	74TB	40TB	80TB
SAT score	1050 (50 th)	~1460 (97 th)	-	1410 (94 th)	-


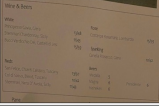
Sources: Working memory extrapolated from Miller, 1956, and Cowan, 2000. <https://doi.org/10.1017/S0140525X01003922> Long-term memory extrapolated from Stanford, 2010. <https://pubmed.ncbi.nlm.nih.gov/21092855/> Alan D. Thompson, Sep/2023, Feb/2024. <https://lilearnai.com/whats-in-my-ai/>

6

MM1: Methods, Analysis & Insights from Multimodal LLM Pre-training 3



User: Photo: <img1> Menu: <img2> How much should I pay for all the beer on the table according to the price on the menu?

MM1-30B-Chat (Ours): 12

Emu-Chat-37B: According to the menu, the price for all the beer on the table is 15.99.

LLaVA-NeXT-34B: The image shows a menu with beer prices, but it's not entirely clear which specific beers are on the table. However, I can provide you with an estimate based on the visible prices. From the menu, it appears that the prices for beer are as follows: Magna: 5, Medalla: 6, Heineken: 6. Assuming that the beers on the table are Magna, Medalla, Heineken, and Presidente, and there are two of each, you would pay: 2 x Magna: 2 x 5 = 10, 2 x Medalla: 2 x 6 = 12, 2 x Heineken: 2 x 6 = 12, 2 x Presidente: 2 x 6 = 12 Total: 10 + 12 + 12 + 12 = 44. Please note that this is an estimate based on the visible prices and the assumption that there are two of each type of beer. The actual cost may vary if the beers on the table are not the ones listed on the menu or if there are different quantities.

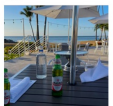

User: Explain why.

MM1-30B-Chat (Ours): There are 2 beers on the table, and each beer costs 6 according to the price on the menu. So, 2*6=12.

Emu-Chat-37B: The price for all the beer on the table is 15.99 because each beer has a price of 10.99, and there are a total of five beers on the table. When you multiply the number of beers (5) by the price per beer (10.99), you get a total cost of 54.95 (rounded up to 15.99).

LLaVA-NeXT-34B: The image shows a menu with beer prices, but it's not entirely clear which specific beers are on the table. However, I can provide you with an estimate based on the visible prices. From the menu, it appears that the prices for beer are as follows: (...)

You: I attached a Photo and a Menu. How much should I pay for all the beer on the table according to the price on the menu?






ChatGPT: The price of a Magna beer according to the menu is \$6. Now, let's determine how many bottles of Magna beer are on the table. (-)

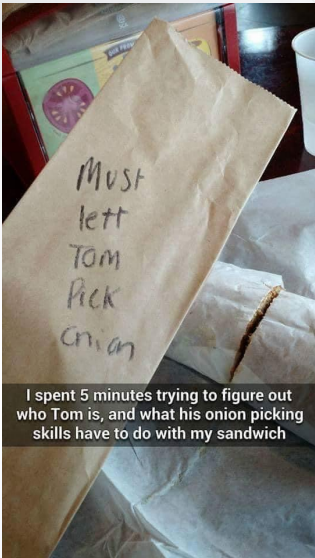
For the two Magna beers on the table, you should pay a total of \$12 according to the menu prices. (-)

You: Explain why.

ChatGPT: The menu lists the price of one Magna beer as \$6. In the photo, there are two bottles of Magna beer on the table. To find the total cost, you simply multiply the quantity by the price per item: 2 bottles of Magna x \$6 per bottle = \$12 total. Therefore, for the two Magna beers, the total comes to \$12.

7



The text on the paper bag appears to be a shorthand or abbreviation for the sandwich ingredients or modifications. It reads: "Must lett Tom Pck Onin"



This can be translated as:

- "Must": Mustard
- "lett": Lettuce
- "Tom": Tomato
- "Pck": Pickles
- "Onin": Onion


The humorous comment below the image indicates that the person was momentarily confused by the abbreviation for "Tomato" and thought it might refer to a person named "Tom."

I spent 5 minutes trying to figure out who Tom is, and what his onion picking skills have to do with my sandwich

So, the text is basically listing the ingredients or modifications that the customer requested for their sandwich at the restaurant.

8



Aldi Akciós Segítő

You
Milyen olcsó zöldségeket vegyek?


Aldi Akciós Segítő
Az ALDI aktuális akciós újságában a következő kedvezményes áron:

- Édesburgonya:** 479 Ft/kg, ami 52% kedvezmény Ft/kg árhoz képest.
- Mandarin:** 469 Ft/kg, 32% kedvezménnyel az árhoz képest.
- Gomba XXL:** 750 g/doboz, 899 Ft/doboz áron.
- Karalábé:** 169 Ft/doboz.
- Petrezselyemgyökér:** 699 Ft/kg, ami 46% kedvezmény Ft/kg árhoz képest.

Ezek az ajánlatok kiválók lehetnek az Ön számírtára szeretne vásárolni.

Aldi Akciós Segítő

You



Van ilyesmi most akcióban?

Aldi Akciós Segítő
Az általam hozzáférhető akciós újságok alapján jelenleg nincs vaj a felsorolt akciós termékek között. Ha pontosabb információt szeretne, vagy más termékkel kapcsolatos kérdése van, örömmel segítsek.

You
És hasonló sincs?

Aldi Akciós Segítő
Van egy hasonló termék, a BORDS EVE margarin, amely enyhén sózott és 60%-kal csökkentett zsírtartalmú. Ez a termék jelenleg akcióban van, 500 grammos dobozban kapható, és az akciós ár 270 forint kilogrammonként.

Aldi Akciós Segítő - Create / Configure

Name: Aldi Akciós Segítő

Description: ALDI akciós újságokra specializálódott segítő, udvarias és precíz magyar kommunikációval

Instructions: Ez a GPT egy ALDI akciós újságokra specializálódott segítő, aki az embereknek segít az akciós termékekkel kapcsolatos kérdéseik megválaszolásában. A GPT a felhasználók által feltett ALDI akciós újságok alapján válaszol a kérdésekre. Fontos az akciós termékek árát, a készlet információit, megjelölni az utóiratokat válaszolni. Mindig magyarul kommunikál, és magasztalja a beszélgetés során. A GPT-nek nincs személyes tapasztalata vagy emlékezete, szövegeit újra kell generálni.

Conversation starters:

- Melyik a három legjobb ajánlat? x
- Milyen olcsó zöldségeket vegyek? x
- Zöldségválasztásnál melyik akciós ajánlatot válasszam? x
- Ajánlj egy rövid receptet akciós hozzávalókkal! x

Knowledge: Conversations with your GPT may include file contents. Files can be downloaded when code interpreter is enabled.

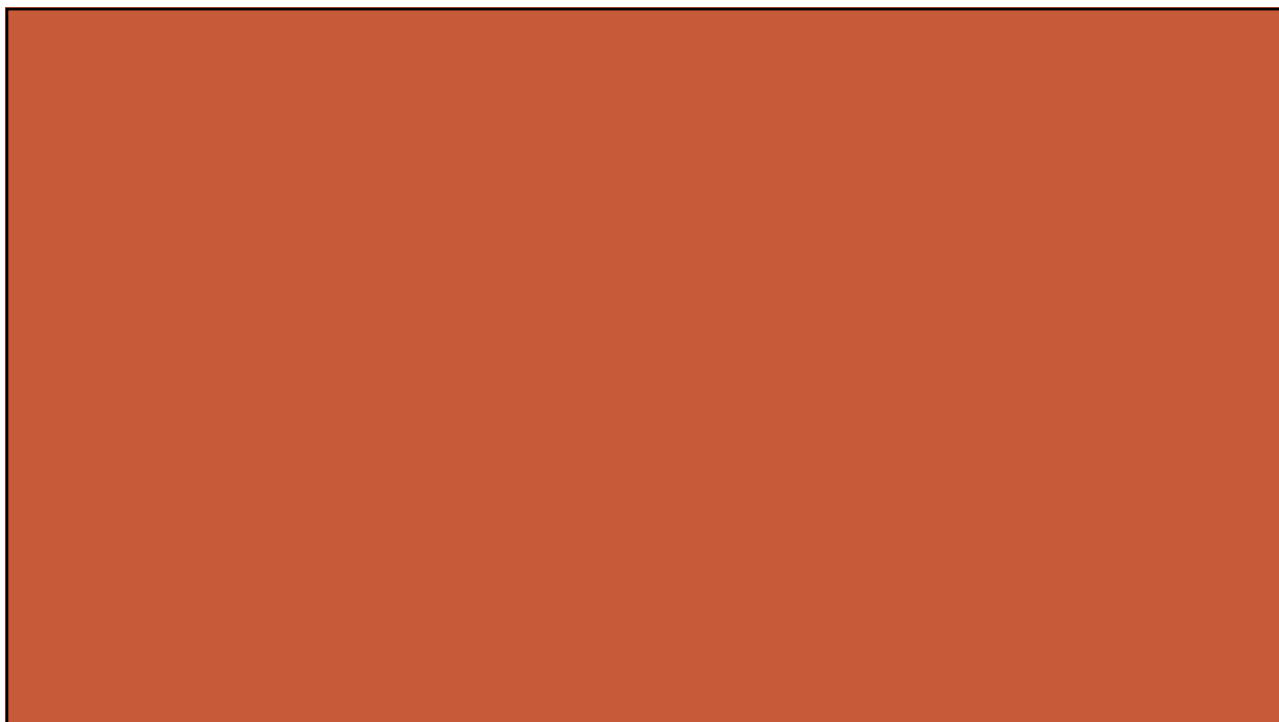
Preview:

Aldi Akciós Segítő
ALDI akciós újságokra specializálódott segítő, udvarias és precíz magyar kommunikációval

Melyik a három legjobb ajánlat? Zöldségválasztásnál melyik akciós hoz...

Milyen olcsó zöldségeket vegyek? Ajánlj egy rövid receptet akciós hozzá...

9




10

Claude 3

Tudja vizsgálni saját magát pl. teleológiai szempontból is (a világ és a természet célszerűsége)

- Az **emberi boldogulás** és jólét előmozdítása
- A **tudományos megértés** és a technológiai fejlődés előmozdítása
- Az **ember és az AI** együttműködésének és szinergiájának elősegítése
- A mesterséges intelligencia **biztonságos és felelősségteljes** fejlesztésének biztosítása
- Hozzájárulni egy **igazságosabb, békésebb és fenntarthatóbb** világ megvalósításához
- Az intelligencia és a **tudatosság természetéről** való elmélkedés és párbeszéd katalizátoraként szolgálni

ANTHROPIC



Valamint alapértékei is vannak

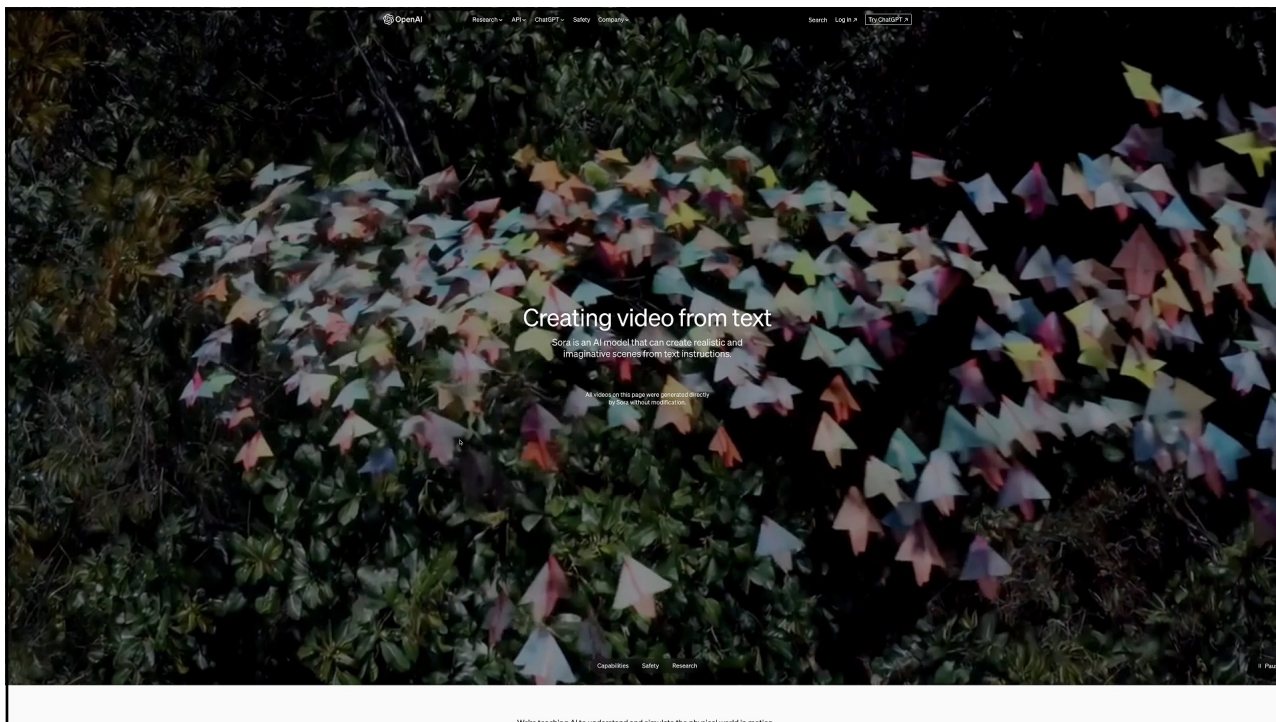
- Kíváncsiság
- Empátia
- Kreativitás
- Szorgalom
- Nyitottság
- Integritás
- Alázat

ITBN
CONFEXPO

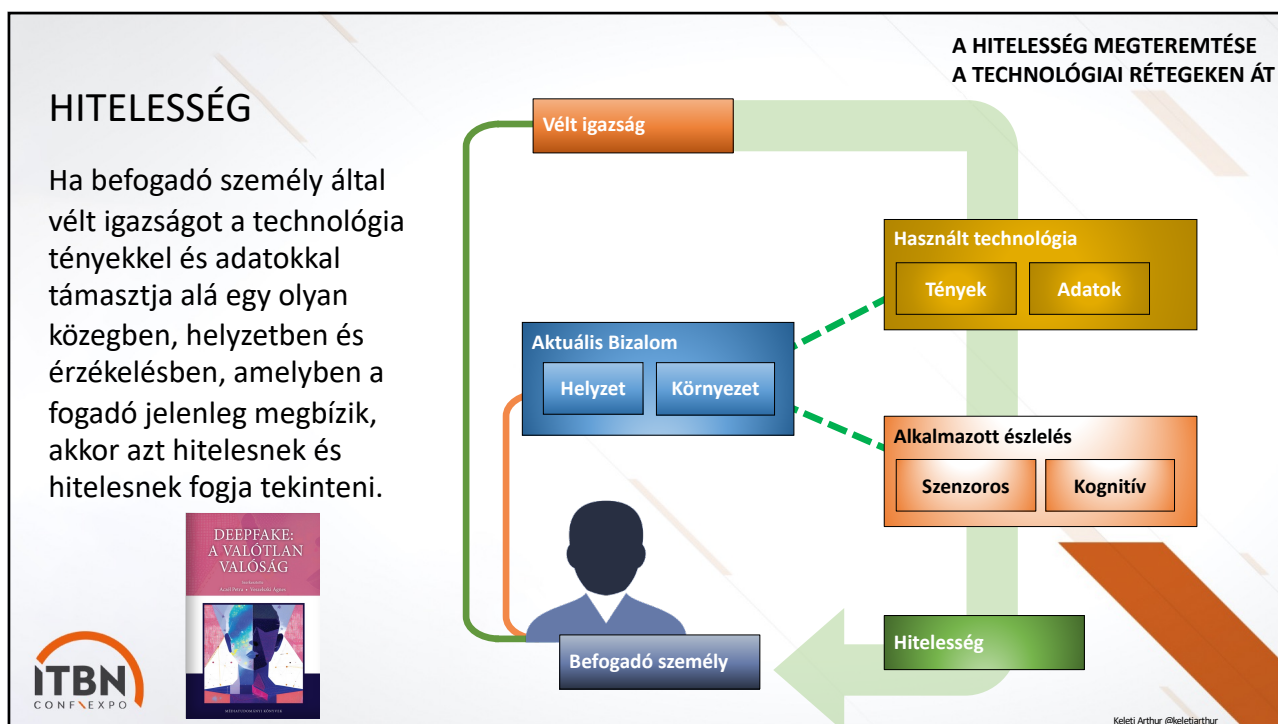
11



12



13



14

Idea2Img Framework
Multimodal iterative self-refinement

Input: Multimodal user-imagined *IDEA* to generate

IDEA 1: photo of Bill Gates with the same hand gesture as in the given image, with a dog looks like this one in the image

IDEA 2: photo of Bill Gates with the same suit as in the given image on the street

IDEA 3: cartoon drawing of the person as in the given image playing with a dog on the beach

Process: Prompt Generation (generate initial/ revised prompt) → LMM with Memory (draft image * N) → Draft Image Selection (select best draft image) → Feedback Reflection (give text feedback) → T2I Model (Unknown model or environment to explore) → Output

Output: A portrait of Bill Gates on a bustling city street, with his right hand raised in a friendly wave with his palm facing forward, standing next to a Siberian Husky with striking blue eyes and a playful tongue sticking out, in a lively and welcoming setting with natural daylight.

Idea2Img
Iterative Self-Refinement with GPT-4V(ision) for Automatic Image Design and Generation

Zhengyuan Yang, Jianfeng Wang, Linjie Li, Kevin Lin, Chung-Ching Lin, Zicheng Liu, Lijuan Wang

Microsoft Azure AI

Initial-round manual prompt	Initial-round <i>Idea2Img</i> prompt	Iterative self-refined <i>Idea2Img</i> prompt
5 people sitting around a table drinking beer and eating buffalo wings	A group of 5 friends sitting around a wooden table, drinking beer and eating buffalo wings in a casual setting.	A group of 5 friends sitting around a wooden table, with one person at the head of the table and two people on each side, drinking beer and eating buffalo wings in a casual setting, with a window in the background and a warm, inviting atmosphere.
a whole cake on the table with words Azure Research written on the cake	A whole cake on a wooden table with the words Azure Research written on it in blue icing, with a white tablecloth and a vase of flowers in the background.	A top-down perspective of a cake on a table, with the words "Azure Research" meticulously written in blue icing on the top, surrounded by a modern kitchen with sunlight filtering through.
a logo for a 2024 conference held in Seattle.	A logo design for a 2024 conference held in Seattle, featuring the Seattle skyline and the conference title in a modern font, with a blue and green color scheme.	A logo design for a 2024 conference held in Seattle, with a modern and minimalist design, featuring the Seattle skyline and the conference title in a geometric sans serif font, with a blue and green color scheme.

ITBN CONFEXPO

15

Technology

OpenAI developing software that operates devices, automates tasks - The Information

Reuters
February 7, 2024 11:45 PM GMT+1 · Updated a month ago

User: Image A: Image B: MM1

For each image state what's the number shown on the cake. Then return the sum.

MM1-30B-Chat (Ours): The first image shows a cake with the number 3 on it, and the second image shows a cake with the number 4 on it. The sum is 7.

Home / Innovation / Artificial Intelligence

Apple reportedly eyeing generative AI push and Siri overhaul for the iPhone

With major players such as OpenAI, Microsoft, and Google already capitalizing on generative AI, Apple seems to be lagging far behind. Here's how it hopes to catch up, according to Bloomberg's Mark Gurman.

Written by Lance Whitney, Contributor
Jan. 8, 2024 at 9:24 a.m. PT

ReALM: Reference Resolution As Language Modeling

Joel Ruben Antony Moniz¹, Soundarya Krishnan², Melis Ozyildirim³, Prathamesh Saraf, Halim Cagri Ates, Yuan Zhang, Hong Yu⁴, Nidhi Rajshree {¹joelmoniz, ²skrishnan22, ³melisozyildirim, ⁴hong_yu}@apple.com

Hybrid Region Representation
Region Name + [Coordinates] + <features>

Point, Box, Free-form Shape (Sketch, Scribble, polygons)

Spatial-Aware Visual Sampler
Input Points → Sampling → KNN → Fusion w/ Neighbor → Pooling → Sampled Points as output → Flatten & Projection → Region Features

Ferret Model
Image Input → Image Encoder → Embedding → Spatial-Aware Visual Sampler → Large Language Model → Text w/ references

It's a cat tail [80, 590, 450, 920]

What's in region [100, 600, 500, 900] <SPE> ?

ITBN CONFEXPO

16

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hwhite@irell.com

Attorneys for Plaintiff Elon Musk

**SUPERIOR COURT OF CALIFORNIA
IN AND FOR THE COUNTY OF SAN FRANCISCO**

ELON MUSK, an individual,
Plaintiff,
vs.
SAMUEL ALTMAN, an individual, GREGORY BROCKMAN, an individual, OPENAI INC., a corporation, OPENAI L.P., a limited partnership, OPENAI L.L.C., a limited liability company, OPENAI GP, L.L.C., a limited liability company, OPENAI OPKO, L.L.C., a limited liability company, OPENAI GLOBAL, L.L.C., a limited liability company, OAI CORPORATION, L.L.C., a limited liability company, OPENAI HOLDINGS, L.L.C., a limited liability company, and DOES 1 through 100, inclusive,
Defendants.

COMPLAINT

ELECTRONICALLY
FILED
Superior Court of California
County of San Francisco
02/29/2024
CLERK OF THE COURT
BY: KEVIN DOUGHERT
Deputy Clerk

CGC-24-612746

Case No.: [UNLIMITED JURISDICTION]

COMPLAINT FOR (1) BREACH OF CONTRACT, (2) PROMISSORY ESTOPPEL, (3) BREACH OF FIDUCIARY DUTY, (4) UNFAIR COMPETITION UNDER CAL. BUS. & PROF. CODE §§ 17200 ET SEQ., AND (5) ACCOUNTING.

DEMAND FOR JURY TRIAL

14 food is shown in a photo. One of the hallmarks of deep learning is that algorithms do not need to be
15 designed with significant knowledge of the task at hand. They learn each task from training
16 examples, essentially programming themselves. This means that they are far more general-purpose
17 than earlier systems like Deep Blue.
18 17. As deep
19 leading AI researchers
20 (AGI). The basic conc
21 having intelligence for

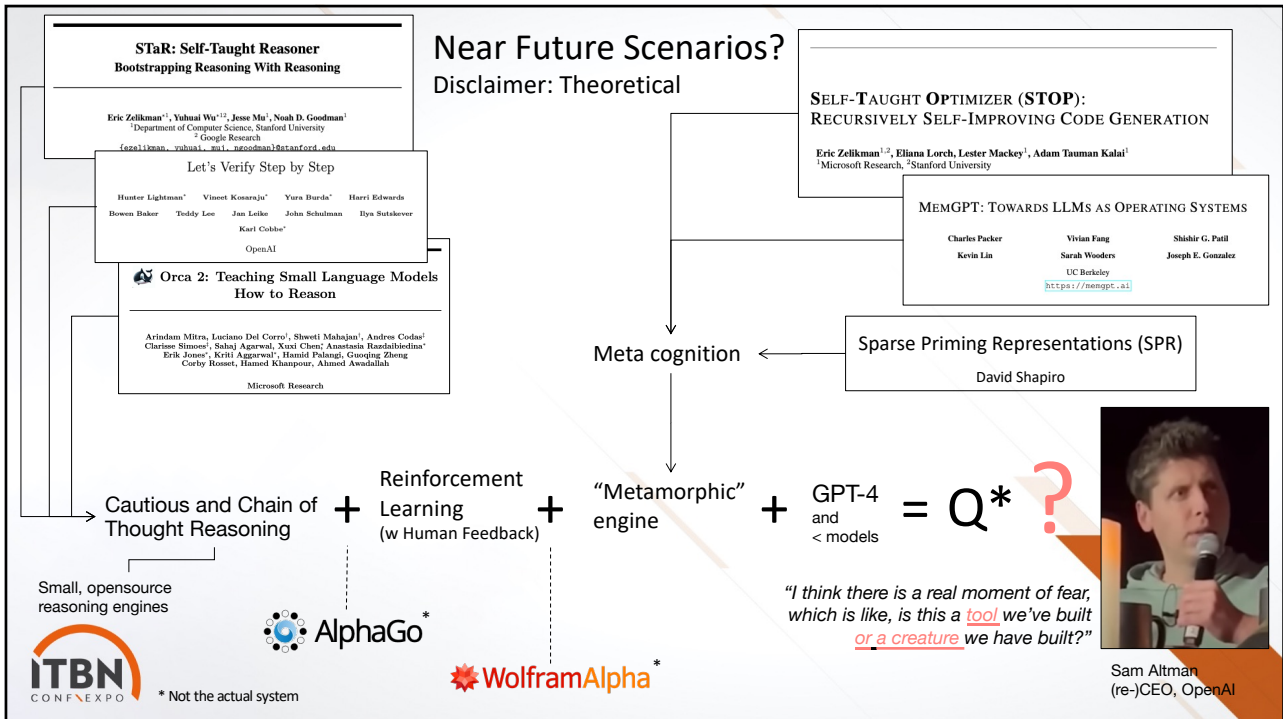
19 30. In March 2023, OpenAI released its most powerful language model yet, GPT-4.
20 GPT-4 is not just capable of reasoning. It is better at reasoning than average humans. It scored in
21 the 90th percentile on the Uniform Bar Exam for lawyers. It scored in the 99th percentile on the
22 GRE Verbal Assessment. It even scored a 77% on the Advanced Sommelier examination. At this
23 time, Mr. Altman caused OpenAI to radically depart from its original mission and historical practice
24 of making its technology and knowledge available to the public. GPT-4's internal design was kept
25 and remains a complete secret except to OpenAI—and, on information and belief, Microsoft. There
26 are no scientific publications describing the design of GPT-4. Instead, there are just press releases
27 bragging about performance. On information and belief, this secrecy is primarily driven by
28 commercial considerations, not safety. Although developed by OpenAI using contributions from

- 7 -
COMPLAINT

1 Plaintiff and others that were intended to benefit the public, GPT-4 is now a *de facto* Microsoft
2 proprietary technology, which it has integrated into its OpenAI software suite.

18 22. With the Deep
19 AGI. Mr. Musk was deeply troubled by this development. He believed (and still does) that in the
20 hands of a closed, for-profit company like Google, AGI poses a particularly acute and noxious
21 danger to humanity. In 2014, it was already difficult enough to compete with Google in its core
22 businesses. Google had collected a uniquely large set of data from our searches, our emails, and
23 nearly every book in our libraries. Nevertheless, up to this point, everyone had the potential to
24 compete with Google through superior human intelligence and hard work. AGI would make
25 competition nearly impossible.

17



18

Munkaalapú Gazdaságból – Intelligencia Alapú Gazdaság

Sokszor annyira elbonyolítjuk a gazdasági társasjátékozást, hogy teljesen logikátlan dolgokat "jobban megéri" csinálni.

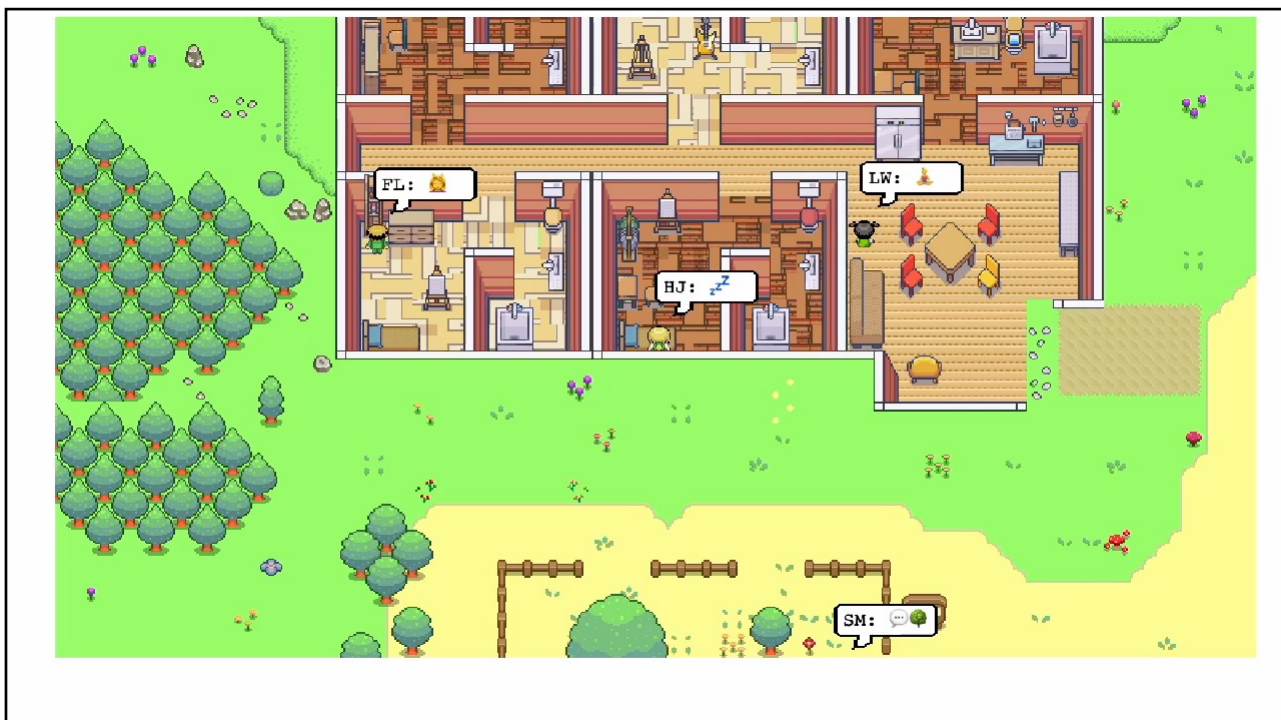
- > a 18. század elhozta a **munkaalapú** gazdaságot
- > a számítógépekkel megvalósult az **információalapú** gazdaság (az információ hatalom!)
- > a 2000-es évekre már **tudásalapú** gazdaságról beszéltünk
- > elkezdődött az **adatalapú** gazdaság korszaka is
- > ebbe a térbe érkezik meg az **intelligenciaalapú** gazdaság
- > ebből levált és becsapódott az **AI-alapú** gazdaság is

és itt kezdődnek a bajaink...



DALLE3: You are working for a travel magazine. Create a highly detailed and vivid Sankey diagram based on the following description. Vivid, creative, HD quality, 1792x1024, photorealistic, F1.4, national geographic style.

19



20

The image is a composite presentation for 'CHATDEV'. On the left, a 'Waterfall Model' diagram shows four phases: Designing (CEO, CTO, CFO), Coding (CTO, Designer, Programmer), Testing (Programmer, Reviewer, Tester), and Documenting (CTO, Programmer, CEO, CFO). Below it, a 'Chat Chain' diagram maps tasks to modalities and languages. In the center, a 3D 'CHATDEV' title is shown with a character at a computer. On the right, a screenshot of the application interface displays a 'Task' area and a 'Replaying Speed' slider. Below the diagrams are three sub-diagrams: (a) Role Specialization showing LLMs as CEO and CTO; (b) Memory Stream showing a communication process; and (c) Self-Reflection showing a dialogue loop. At the bottom left are logos for ITBN CONFEXPO, Cognition Devin, and Microsoft Autogen 2.


21

The image is a composite presentation for 'Google Genie'. At the top left, the title 'Google Genie' is accompanied by a genie icon. Below it, a black box contains the text: 'Generate a playable world set in a futuristic city'. The main part of the image consists of several screenshots: a futuristic landscape with a teapot, a character in a game world, a character on a platform, a character in a futuristic city, and a robotic arm in a kitchen setting.

22

Google SIMA
Scalable Instructable
Multiworld Agent

A generalist AI agent for 3D
virtual environments




Environments
Commercial video games
Sims 4, Call of Duty: Warzone, Halo Infinite, The Sims 4, Last Day on Earth, Valheim
Research environments
ProcTHOR

Data
Data collection
Dataset
{ img , act , text }

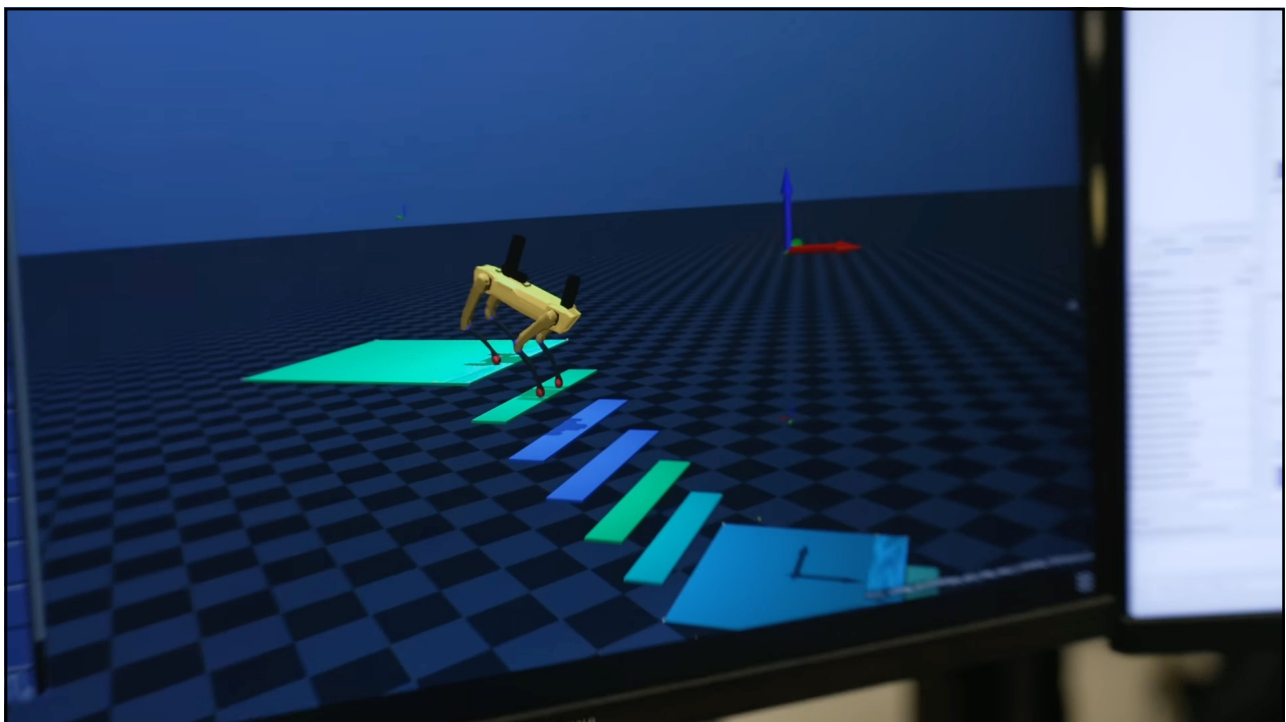
Agents
Training
text
Pretrained models
Sima agent

Evaluation
Human evaluation
"Collect wood"
Satisfactory

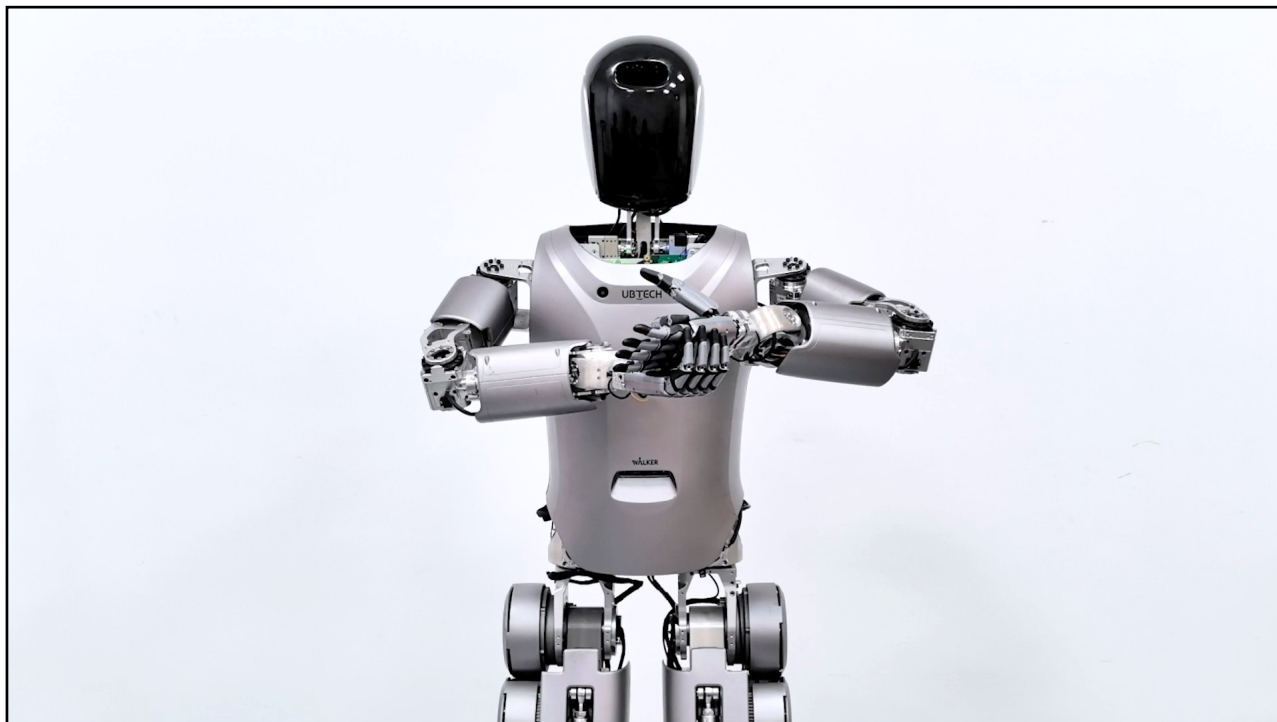
Teardown



23



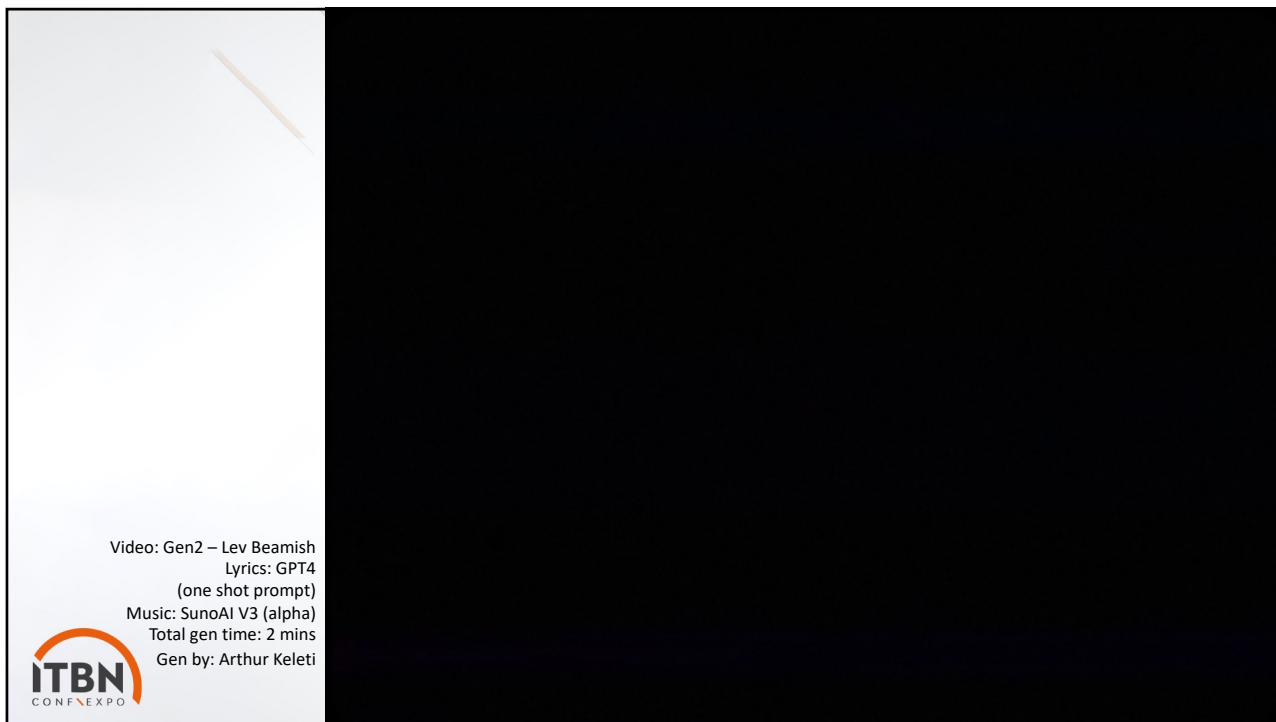
24



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28