

AI GAME OVER OR GAME CHANGER

9.3.23



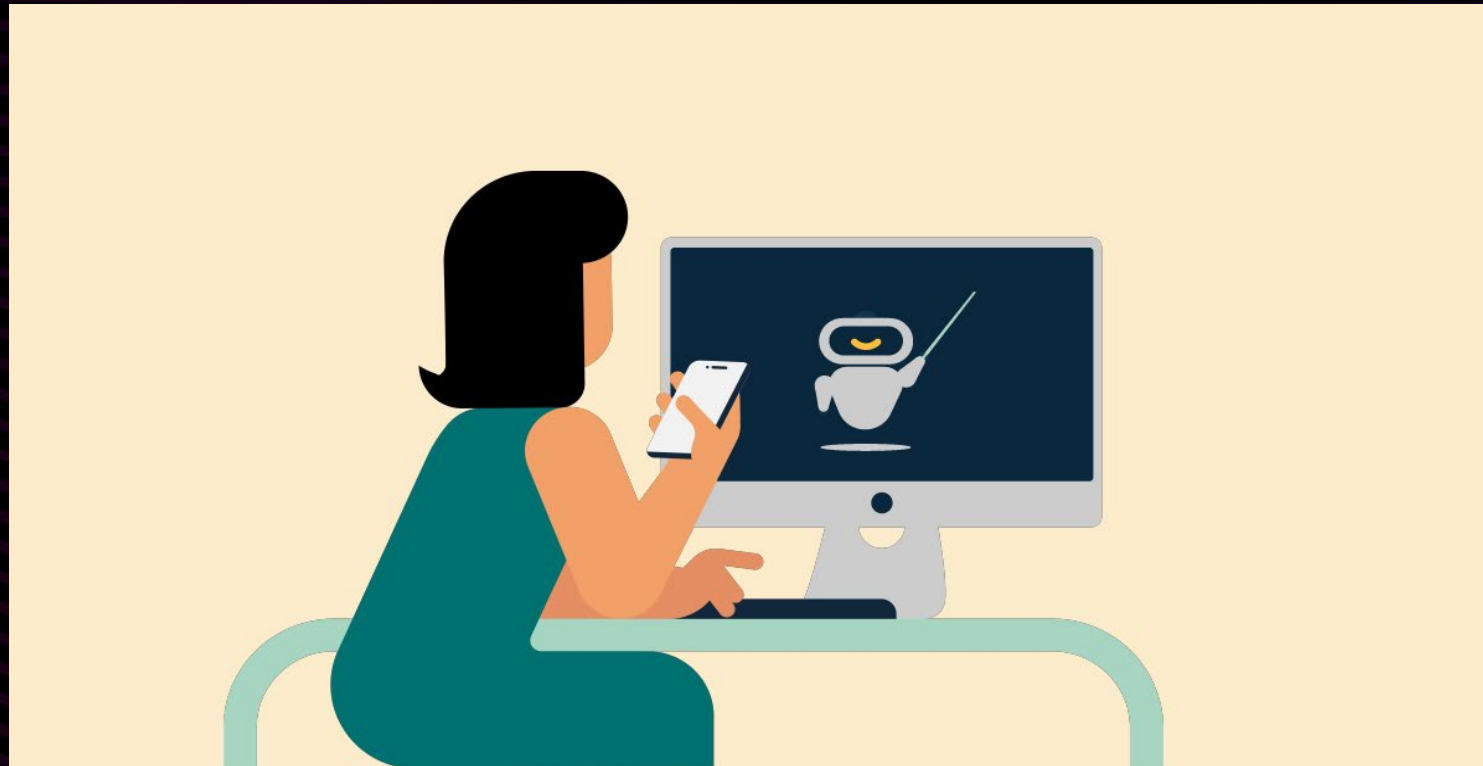
ChatGPT

"מאין באת? לאן אתה
הולך? ולפני מי אתה
עתיד ליתן דין וחשבון?"
(פרקי אבות פרק ג משנה א)

ד"ר יהונתן שלר

Who spoke with a machine today?

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Artificial Intelligence timeline

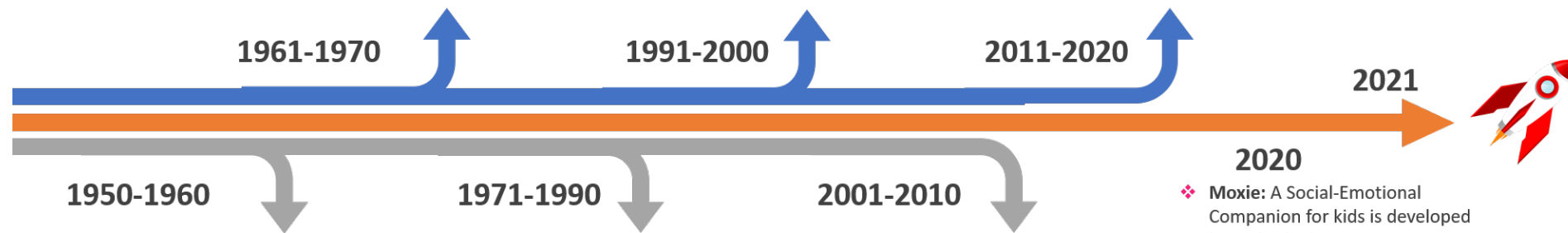
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1961. First Industrial robot replaced humans at assembly line.
1964. Pioneering chatbot named ELIZA was developed at MIT
1966. A general purpose mobile robot developed at Stanford

1997. IBM's Deep Blue defeated Garry Kasparov in chess Competition
1998. An emotionally intelligent robot KISMAT was developed
1999. Sony launched pet robot dog named AIBO

2011. Apple's SIRI and IBM's Watson were developed
2014. EUGENE, a chatbot passed Turing test; Amazon launched Alexa, a voice enabled intelligent virtual assistant.
2017. Google's AlphaGO beat the world's best GO player Ke Jie.



1950. Turing Test by Alan Turing
1956. Term of AI was coined

AI Winter

2002. iRobot launched autonomous vacuum cleaner robot in bulk.
2009. Google built first self driving car for urban conditions

- 2020
- ❖ Moxie: A Social-Emotional Companion for kids is developed by Embodied.
 - ❖ Earth's first autonomous beehive is developed by beewise
 - ❖ TrialJectory is an AI enabled service to look for clinical trials.
 - ❖ BrainBox AI is an AI system to predict a building's thermal conditions.
 - ❖ Refined business process, more personalized recommendations, human like conversational skills

Demystifying GPT

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GPT?

Demystifying GPT

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G – Generative

Demystifying GPT

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G – Generative

P – Pre-trained

Demystifying GPT

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G – Generative

P – Pre-trained

T – Transformer

Generative AI

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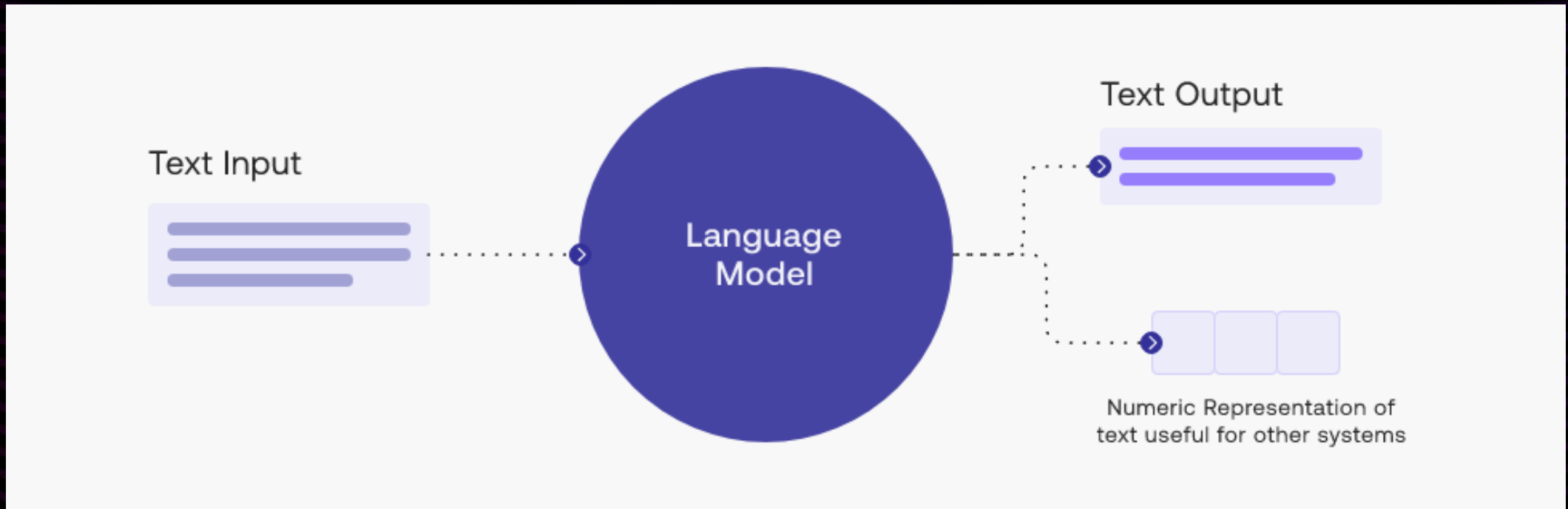
A branch of AI focused on creating **new things** from existing data, typically using **deep learning** algorithms.



<https://www.wired.com/story/this-copyright-lawsuit-could-shape-the-future-of-generative-ai/>

Pre-Trained (Language Model)

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<https://docs.cohere.ai/docs/introduction-to-large-language-models>

Pre-Trained (Language Model)



Next Token Prediction

Hannah is a _____

Hannah is a *sister*

Hannah is a *friend*

Hannah is a *marketer*

Hannah is a *comedian*

Masked Language Model

Jacob _____ reading

Jacob *fears* reading

Jacob *loves* reading

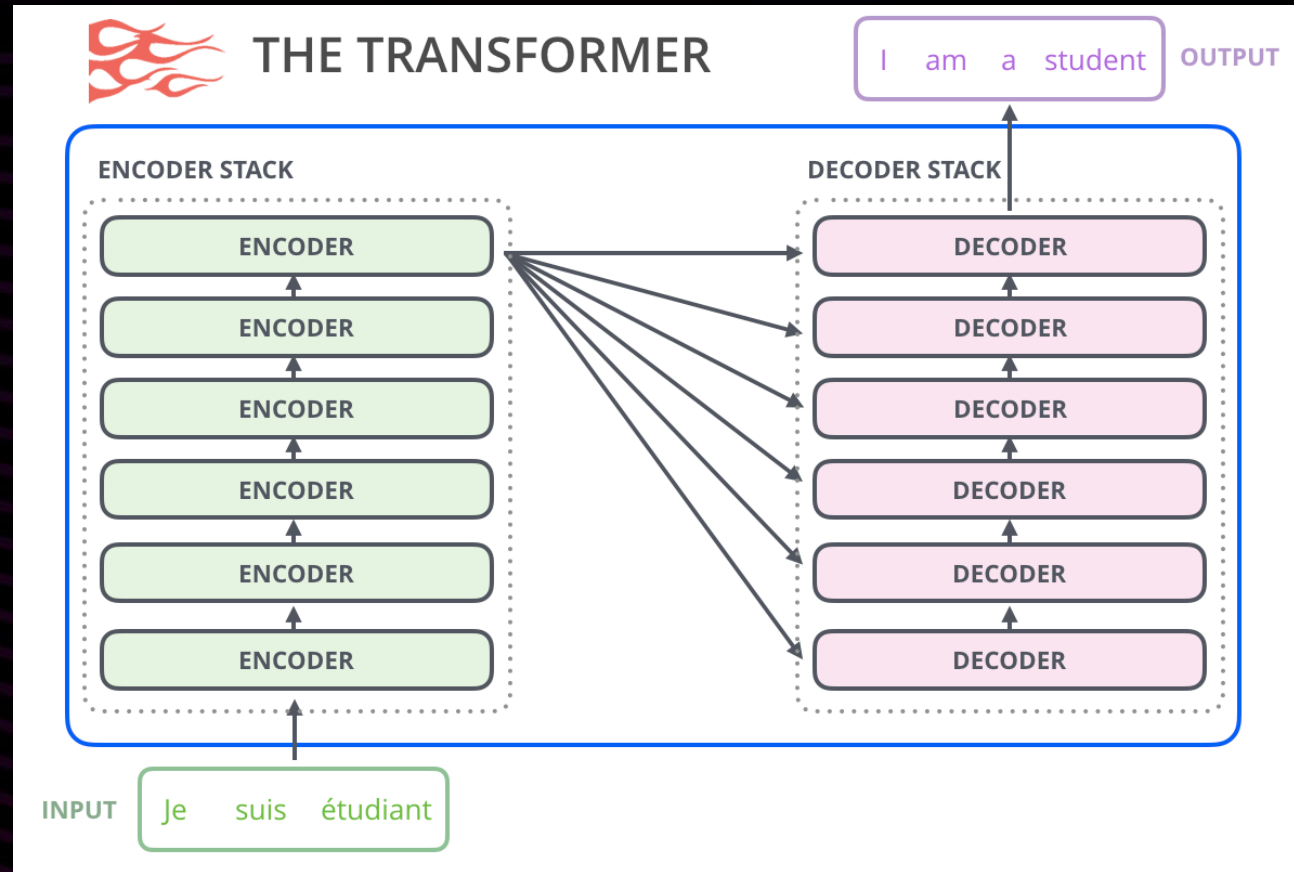
Jacob *enjoys* reading

Jacob *hates* reading

<https://towardsdatascience.com/how-chatgpt-works-the-models-behind-the-bot-1ce5fca96286>

Transformer (model)

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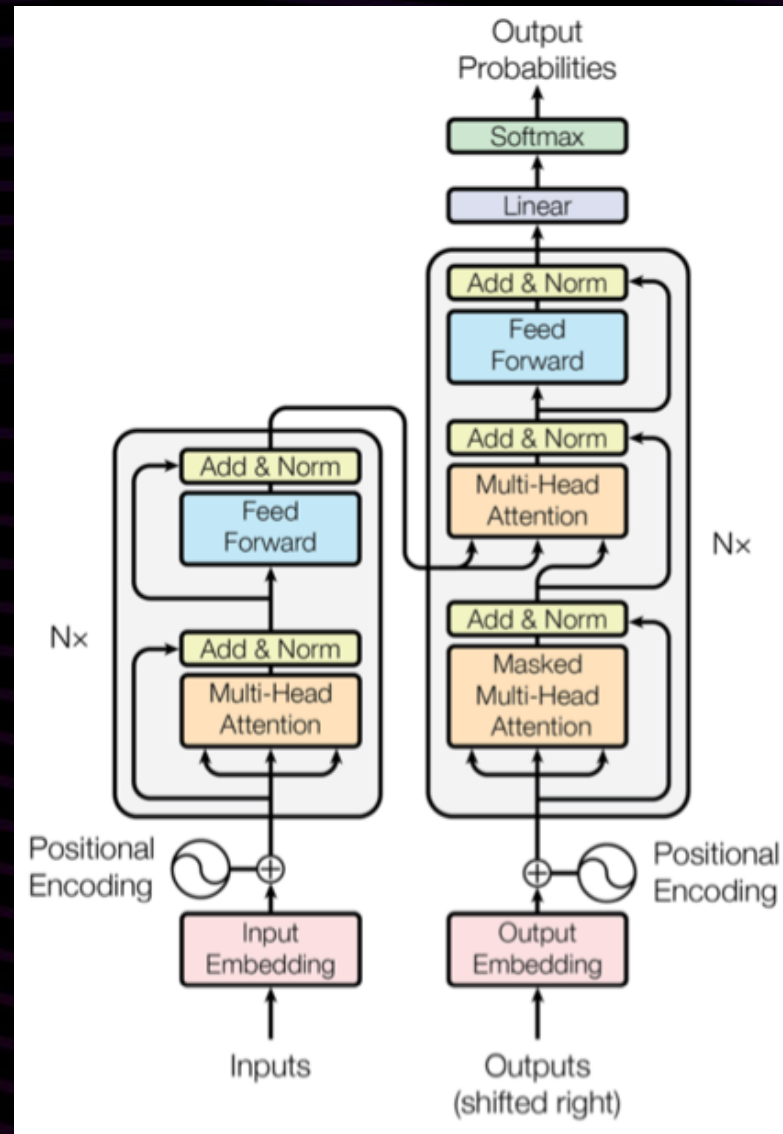
Transformer (model)

Neural network

Multi layered encoders/decoders

Attention and self-attention

Attention is all you need. <https://arxiv.org/pdf/1706.03762.pdf>



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Doesn't sound very new

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<https://bootcamp.uxdesign.cc/how-chatgpt-really-works-explained-for-non-technical-people-71efb078a5c9>

What made the difference?

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GPT-2

1.5 billion parameters

40 GB text training dataset

Often fine-tuned to perform specific tasks

Smaller version of the model was released to the public open source

GPT-3

176 billion parameters

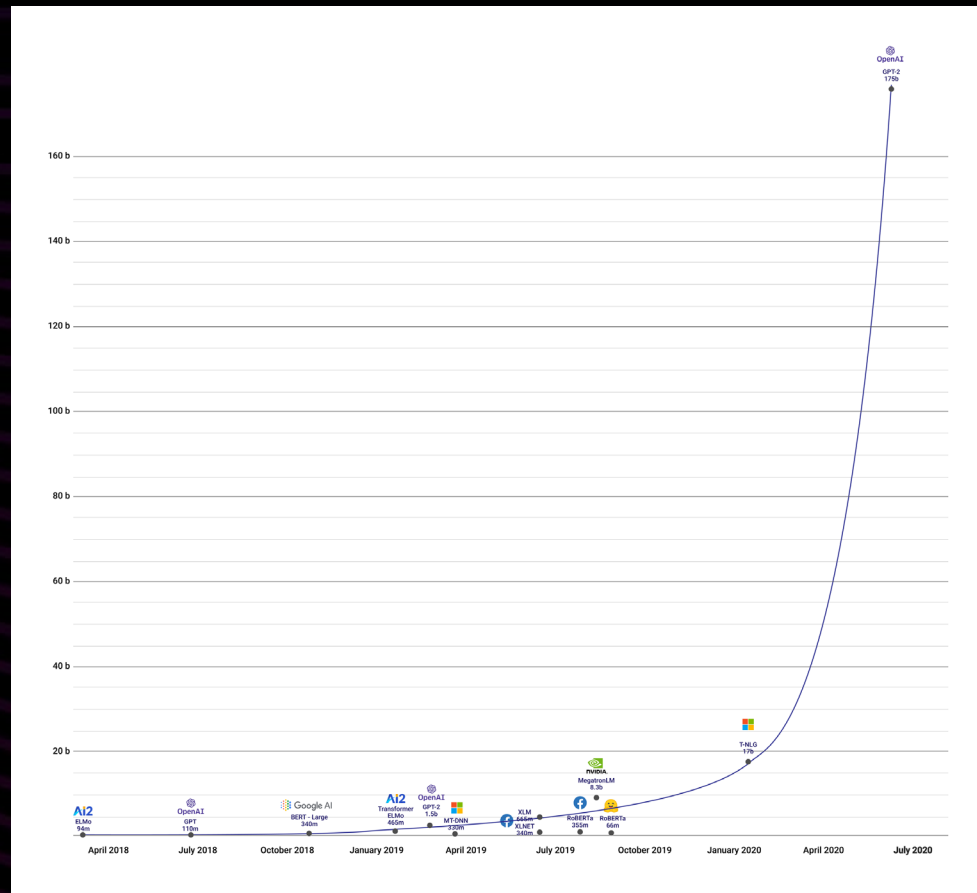
570 GB training dataset comprising of books, articles, websites, and more

Ability to perform most language tasks without additional tuning

Launched as an API service

Revolution or evolution?

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<https://arxiv.org/abs/1910.01108>

GPT is a family of tools

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base (May/2020)

- GPT-3 Small 125M
- GPT-3 Large 760M
- GPT-3 2.7B
- GPT-3 13B

- GPT-3 Medium 350M
ada
- GPT-3 XL 1.3B
babbage
- GPT-3 6.7B
curie
- **GPT-3 175B**
davinci

special (Dec/2021)

- WebGPT

Key
Model name / Parameters / (Instruction type)
API name

- Open via API
- Research only
- Popular

embeddings (Jan/2022)

- **text-embedding-ada-002**
 - text similarity
- text-similarity-ada-001
- text-similarity-babbage-001
- text-similarity-curie-001
- text-similarity-davinci-001
 - text search
- text-search-ada-doc-001
- text-search-ada-query-001
- text-search-babbage-doc-001
- text-search-babbage-query-001
- text-search-curie-doc-001
- text-search-curie-query-001
- text-search-davinci-doc-001
- text-search-davinci-query-001
 - code search
- code-search-ada-code-001
- code-search-ada-text-001
- code-search-babbage-code-001
- code-search-babbage-text-001

instruct (old)

- curie-instruct-beta 6.7B
- InstructGPT-3 175B (SFT)
davinci-instruct-beta
- text-ada-001 350M
- text-babbage-001 1.3B (FeedME)
- text-curie-001 6.7B (FeedME)
- text-davinci-001 175B (FeedME)

code (Jul/2021)

- Codex 12B
code-cushman-001
- Codex 175B
code-davinci-001

pretrain + cpt (Mar/2022)

- GPT-3 1.3B pretrain
- GPT-3 2.7B pretrain
- GPT-3 6.7B pretrain
- GPT-3 unsupervised cpt-text 1.2B

insert + edit (Mar/2022)

- text-davinci-insert-001
- text-davinci-insert-002
- text-davinci-edit-001
- code-davinci-edit-001

GPT-3.5 (2022-2023)

- **Codex 175B (no instruct)**
code-davinci-002
- text-davinci-002 175B (FeedME)
- **text-davinci-003 175B (PPO)**
- **ChatGPT 175B (PPO)**
gpt-3.5-turbo
- Microsoft Bing Chat 175B (Proprietary, GPT-4?)

- Miscellaneous API
- 1. *cushman:2020-05-03*
- 2. *ada:2020-05-03*
- 3. *babbage:2020-05-03*
- 4. *curie:2020-05-03*
- 5. *davinci:2020-05-03*
- 6. *if-curie-v2*
- 7. *if-davinci-v2*
- 8. *if-davinci:3.0.0*
- 9. *davinci-if:3.0.0*
- 10. *davinci-instruct-beta:2.0.0 (SFT)*
- 11. *text-ada:001*
- 12. *text-babbage:001*
- 13. *text-curie:001*
- 14. *text-davinci:001*
- 15. *audio-transcribe-deprecated*
- 16. *text-chat-davinci-002-20221122*
- 17. *gpt-3.5-turbo-0301*

Total models shown in this viz = **64**

Not to scale. Selected highlights only. Alan D. Thompson, March 2023. <https://lifearchitct.ai/gpt-3> Sources: OpenAI 1, 2 and papers, API duplicates removed.



[missing title]

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[missing title]

SC

I need a creative title for a slide in the presentation where I describe chatgpt capabilities - what would you suggest?

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[missing title]

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SC

I need a creative title for a slide in the presentation where I describe chatgpt capabilities - what would you suggest?



Here are a few creative title suggestions for your slide describing ChatGPT's capabilities:

1. "Unleashing the Power of ChatGPT: Exploring Its Limitless Capabilities"
2. "The AI Revolution: How ChatGPT is Changing the Game"
3. "The Ultimate Conversationalist: A Deep Dive into ChatGPT's Abilities"
4. "ChatGPT: Your Personal AI Assistant for Everything"
5. "Beyond Words: ChatGPT's Multi-Faceted Capabilities"

I hope one of these suggestions inspires you for your presentation!

Continue the conversation

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SC

provide me with such a mind opening example for the talk

Continue the conversation

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SC

provide me with such a mind opening example for the talk



Sure, here's an example of how AI is a game changer in the field of education:



One of the biggest challenges in education is providing personalized and adaptive learning experiences to students. With the help of AI, we can now create intelligent tutoring systems that can adapt to the needs and preferences of individual students.

Can we talk code?

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SC

but I'm a programmer - can you provide some code writing examples?



Sure, here are a few examples of how AI is changing the way we write code: 👍 🗨️

1. **Code Generation:** With the help of AI, we can now generate code automatically based on a set of inputs or specifications. For example, tools like OpenAI's Codex can analyze natural language descriptions of a program and generate corresponding code.
2. **Code Optimization:** AI can also be used to optimize existing code, improving its efficiency and performance. For example, Google's AutoML technology uses machine learning algorithms to optimize neural networks, resulting in faster and more accurate AI models.
3. **Code Analysis:** AI can be used to analyze large codebases and identify potential errors, vulnerabilities, or performance bottlenecks. For example, tools like DeepCode use machine learning to analyze code and provide recommendations for improvements.
4. **Code Completion:** AI can also help programmers by suggesting code completions and auto-corrections as they write. For example, the Intellisense feature in Microsoft's Visual Studio uses machine learning algorithms to suggest code completions and provide real-time feedback.

Can you write / fix code?

SC

where is my bug in the following code:

```
i=0
while(i<10):
    print(i)
    i+=1
```

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Can you write / fix code?

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SC where is my bug in the following code:
i=0
while(i<10):
 print(i)
i+=1



In the given code, the line `i+=1` is not indented properly and is outside the scope of the while loop. This will result in an infinite loop where the value of `i` will never exceed 10.



To fix the bug, simply indent the line `i+=1` so that it is within the scope of the while loop:

css

Copy code

```
i = 0  
while i < 10:  
  print(i)  
  i += 1
```

This code will print the numbers from 0 to 9 and then terminate the while loop.

Can you do my exams?

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Field	Achievement	Result	Outperforms human avg?	Engine	Testing date	Peer-reviewed?	Paper/link	Extract
Jurisprudence/legal rulings	ChatGPT helps a judge with a verdict (Colombia).	-	-	ChatGPT	31/Jan/2023	No	English: https://interestingen	English: https://interestingen Spanish:
Politics	ChatGPT writes several Bills (USA).	-	-	ChatGPT	26/Jan/2023	Yes	Regulate ChatGPT: https://m	Regulate ChatGPT: https://m Mental health & ChatGPT: ht
MBA	ChatGPT would pass an MBA degree exam at Wharton (UPenn).	B/B-	Yes	ChatGPT	22/Jan/2023	Yes	"Considering this performanc	"Considering this performanc
Accounting	GPT-3.5 would pass the US CPA exam.	57.6%	Yes	text-davinci-003	11/Jan/2023	Yes	"the model answers 57.6% of	"the model answers 57.6% of
Legal	GPT-3.5 would pass the bar in the US.	50.3%	Yes	text-davinci-003	29/Dec/2022	Yes	"GPT-3.5 achieves a headline	"GPT-3.5 achieves a headline
Medical	ChatGPT would pass the United States Medical Licensing Exam (USMLE).	>60%	Yes	ChatGPT	20/Dec/2022	Yes	"ChatGPT performed at >50%	"ChatGPT performed at >50% year, is approximately 60%. T
IQ (fluid/apptitude)	ChatGPT outperforms college students on the Raven's Progressive Matrices aptitude test.	>98%	Yes	text-davinci-003	19/Dec/2022	Yes	More info at: https://lifearchi	More info at: https://lifearchi
AWS certificate	ChatGPT would pass the AWS Certified Cloud Practitioner exam.	80%	Yes	ChatGPT	8/Dec/2022	No	"Final score: 800/1000; a pas	"Final score: 800/1000; a pas
IQ (verbal only)	ChatGPT scores IQ=147, 99.9th %ile.	>99.9%	Yes	ChatGPT	6/Dec/2022	No	"Psychology Today Verbal-Lin	"Psychology Today Verbal-Lin
SAT exam	ChatGPT scores 1020/1600 on SAT exam.	52%	Yes	ChatGPT	2/Dec/2022	No	"According to collegeboard, a	"According to collegeboard, a
General knowledge	GPT-3 would beat IBM Watson on Jeopardy! questions.	100%	Yes	davinci	20/Sep/2021	No	Watson scored 88%, GPT-3 sc	Watson scored 88%, GPT-3 sc
IQ (Binet-Simon Scale, verbal only)	GPT-3 scores in 99.9th %ile (estimate only).	99.9%	Yes	davinci	11/May/2021	No	"As of 2021, I expect that it w	"As of 2021, I expect that it w the AI would be easily in the

Answer on any question (?!)

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SC

why is the word conference shorter than workshop



Answer on any question (?!)

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SC

why is the word conference shorter that workshop



The word "conference" is shorter than the word "workshop" because it contains fewer letters and syllables. The word "conference" has three syllables and nine letters, while the word "workshop" has two syllables and nine letters.



Other limitations

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sc

what is the latest data point you have?



As an AI language model, I do not have access to real-time information unless it has been previously programmed into my system. My knowledge cutoff date is September 2021, and I do not have access to live data or information beyond that point. However, I can use my knowledge and skills to assist you with any questions or concerns you may have based on the information available to me.

ויש גם בעברית

SC

רעיונות לליל הסדר

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ויש גם בעברית



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רעיונות לליל הסדר

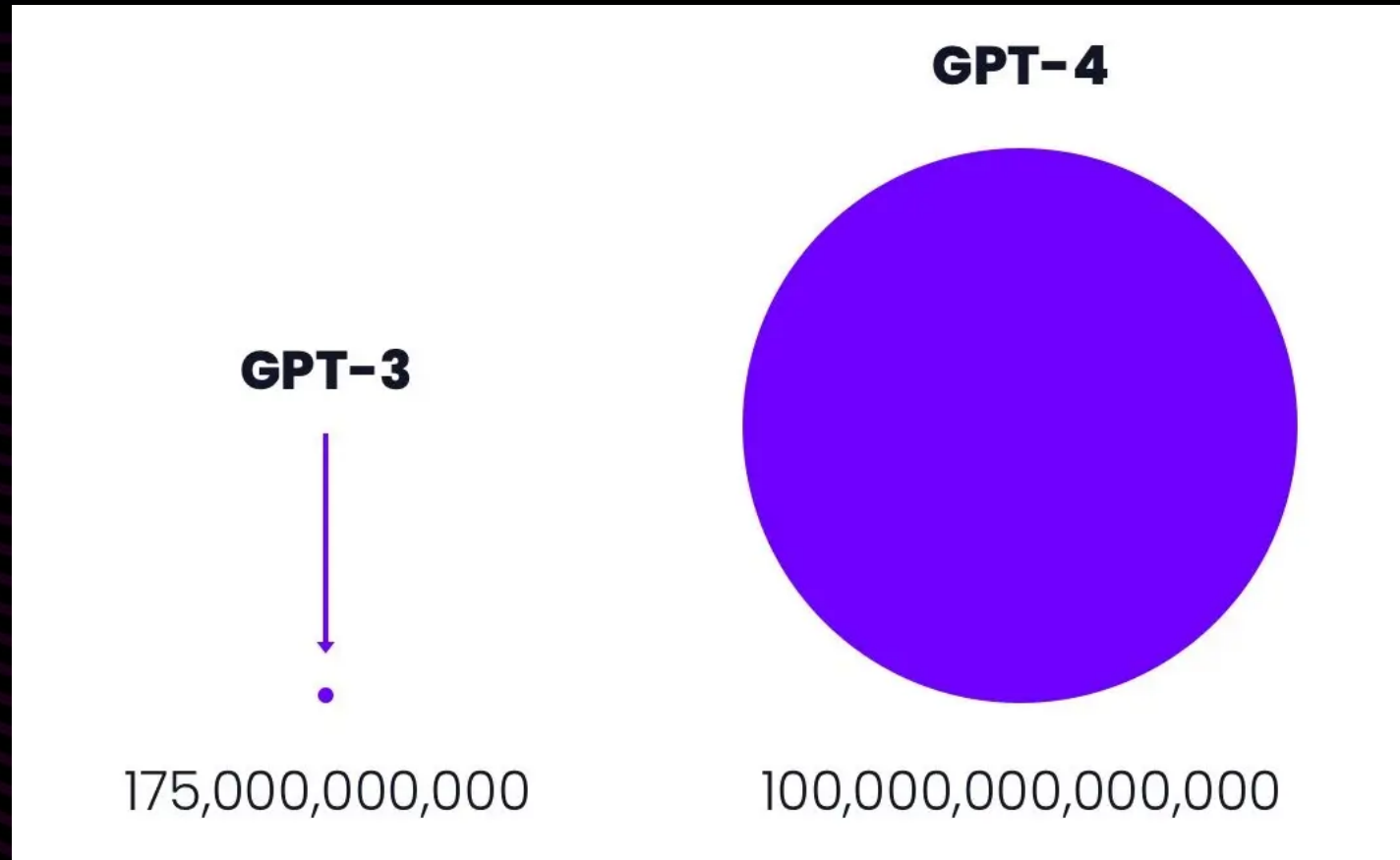


ליל הסדר הוא לילה מיוחד בחג הפסח, שבו מתקיים הסדר המסורתי. הנה כמה רעיונות לכיכד להפוך את ליל הסדר לחוויה מיוחדת ומשמעותית  

1. הכנת שולחן הסדר: כדי ליצור אווירה ייחודית ומיוחדת, אפשר להכין את השולחן המיוחד לסדר. לדוגמה, להשתמש בצלחות וכלים מיוחדים, להציב מספר כוסות ליין ולחלוק סיפורים ומשימות לכל חברי המשפחה.
2. משחקי פסח: אפשר להכין משחקי פסח כמו פאזלים, תמונות לצביעה ותחרויות למי יכול למצוא את המצות הצמחיות המוסתרות בבית.
3. קריאת הגדה: קריאת הגדה היא חלק מרכזי בסדר הלילה. אפשר להכין ערכה של ספרי הגדה ולבחור לקרוא בצורות וסגנונות שונים, כגון תוך שימוש בפיזמונים או בשירה.
4. שירים ומנגינות: אפשר לשיר שירים מסורתיים של פסח, כמו גם לנגן ולשיר שירי הודיה וספירת הפלאות. בזמן קריאת הגדה.
5. מנות טעימות: אפשר להכין מנות טעימות ומיוחדות למסע הגעת החמץ לבית הכנסת, כמו פיצוחי חמץ או

GPT4?

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What does it mean?

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Feature	Expectation
Number of parameters	1 Trillion
Accuracy	Enhanced understanding of the context of a given task and complete it more accurately. Also designed to handle larger amounts of data and more sophisticated tasks than GPT-3.
Multimodality	Support for image, and sound based inputs in addition to text.
Less dependent on good prompting	Freedom to users to formulate their intention in their way, and the system will understand it.
Alignment	Greater alignment with human values and expectations

Ethical considerations

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- 1. Training bias** - Language models can pick up biases from the data they are trained on
- 2. Misinformation** – LLM can generate responses that may contain misinformation or propaganda
- 3. Safety** – Control over potentially harmful content
- 4. Accountability** – Maintain user’s accountability over obtained results and their use
- 5. Copyrights** – the prompter? Model owner? Data owner? None?
- 6. Dependence on AI** – creativity? Job security? Other?
- 7. Unintended consequences**

לפני מי אתה עתיד ליתן דין וחשבון



כמו שאר הדברים בחיים

אין טוב או רע – זה תלוי במה אנחנו עושים איתו

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▶▶ Thank you